

# Self-advocacy as a practice of empowering adolescents with hearing impairment: a pilot study

## A autoadvocacia como prática de empoderamento de adolescentes com deficiência auditiva: um estudo-piloto

Rebeca Liaschi Floro Silva<sup>1</sup> , Larissa de Almeida Carneiro<sup>1</sup> , Daniele Batista Nery<sup>1</sup> , Luciana Alves Duarte<sup>1</sup> , Adriane Lima Mortari Moret<sup>1</sup> , Amanda Salimon<sup>1</sup> , Thais Corina Said de Angelo<sup>1</sup> , Camila Medina<sup>1</sup> , Danielle Mecheseregian Albano<sup>1</sup> , Dagma Venturini Marques Abramides<sup>1</sup> , Natália Barreto Frederique Lopes<sup>1</sup> , Regina Tangerino de Souza Jacob<sup>1</sup> 

### ABSTRACT

**Purpose:** To verify the effectiveness of an intervention with recreational activities that aim to develop self-advocacy and citizenship as a practice of empowerment for adolescents with hearing impairment. **Methods:** This is a pre- and post-intervention experimental study with a quantitative and qualitative approach. Four oral hard-of-hearing adolescents aged between 12 and 17 years, users of hearing aids and/or cochlear implants, participated in this study. Five face-to-face meetings were held, in which topics related to self-advocacy were addressed through recreational activities. The Self-advocacy Checklist “I can” and the Classroom Participation Questionnaire (CPQ) were applied pre- and post-intervention. The Social Skills Inventory for Adolescents (IHS-A-Del-Prette) and the Wechsler Abbreviated Scale of Intelligence (WASI) were also used. The data were analyzed utilizing qualitative and quantitative methods. **Results:** In the Frequency Indicator of the IHS-A-Del-Prette, all participants were classified as low average or below average. In the WASI, which analyzed performance IQ, all participants were classified as average. Differences were observed when comparing the Self-advocacy Checklist “I can” pre- and post-intervention, especially regarding hearing and hearing loss and the use of hearing devices. In the CPQ, worsening was observed in some domains, such as teachers’ understanding and negative aspects. **Conclusion:** The intervention program with the structure proposed in this study was efficient in developing self-advocacy and citizenship skills to empower adolescents with hearing impairment.

**Keywords:** Adolescent; Hearing loss; Self care; Empowerment; Self-help devices

### RESUMO

**Objetivo:** verificar a efetividade da intervenção com atividades lúdicas grupais que visam desenvolver a autoadvocacia e a autocidadania como prática de empoderamento de adolescentes com deficiência auditiva. **Métodos:** trata-se de um estudo experimental pré e pós-intervenção, de abordagem quantitativa e qualitativa. Participaram quatro adolescentes com idades entre 12 e 17 anos, usuários de aparelho de amplificação sonora individual e/ou implante coclear, oralizados. Foram realizados cinco encontros presenciais, nos quais foram abordados temas relacionados à autoadvocacia, por meio de atividades lúdicas. Os instrumentos Checklist de Autoadvocacia “Eu consigo” e o Questionário de participação em sala de aula foram aplicados na pré e pós-intervenção. Foram aplicados o Inventário de Habilidades Sociais para Adolescentes (IHS-Adolescente) e a Escala Wechsler Abreviada de Inteligência. Os dados foram analisados de forma qualitativa e quantitativa. **Resultados:** No Inventário de Habilidades Sociais para Adolescentes, para frequência, todos os participantes foram classificados como abaixo da média ou média inferior. No teste de Escala Wechsler Abreviada de Inteligência, observando o dado de quociente de inteligência de execução, todos ficaram na média. Houve diferenças na comparação dos resultados pré e pós-intervenção do Checklist de Autoadvocacia “Eu consigo”, principalmente no domínio compreensão da audição e da perda auditiva e uso dos dispositivos auditivos. No Questionário de participação em sala de aula, foi observada piora em alguns domínios, como compreensão dos professores e aspectos negativos. **Conclusão:** O programa de intervenção com a estruturação proposta neste estudo foi eficiente para desenvolver as habilidades de autoadvocacia e autocidadania para o empoderamento de adolescentes com deficiência auditiva.

**Palavras-chave:** Adolescência; Perda auditiva; Autocuidado; Empoderamento; Tecnologias assistivas

Study carried out at Departamento de Fonoaudiologia, Faculdade de Odontologia de Bauru – FOB, Universidade de São Paulo – USP – Bauru (SP), Brasil.

<sup>1</sup>Faculdade de Odontologia de Bauru – FOB, Universidade de São Paulo – USP – Bauru (SP), Brasil.

**Conflict of interests:** No.

**Authors' contribution:** RLFS, DBN, LAD, DMA and DVMA participated in the design of the project, data collection and analysis, and writing of the manuscript; ALMM participated in the data analysis and writing of the manuscript; AS participated in the writing/reviewing of the project and the manuscript; TCSA, LAC, CM and NBFL participated in the data analysis and writing of the manuscript; RTSJ participated in the elaboration of the project, data analysis, writing of the manuscript and guidance in all stages of the work.

**Funding:** Coordenação de Programas de Bolsas de Estudos de Estudantes de Graduação da Universidade de São Paulo (PUB-USP).

**Corresponding author:** Regina Tangerino de Souza Jacob. E-mail: reginatangerino@usp.br

**Received:** April 19, 2020; **Accepted:** August 24, 2020

## INTRODUCTION

Hearing impairment (HI) is a condition that requires the use of electronic devices for the development of hearing skills and oral communication. It commonly causes emotional fragility situations due to the disability itself, the difference created by the indispensable use of an assistive device or, often, due to the difficulty in communicating with people.

In particular, during adolescence, these situations are negatively intensified, given the emotional vulnerability observed in this life stage<sup>(1)</sup>.

Adolescents with HI need empowerment to develop specific skills to deal with these situations; therefore, it is necessary to identify and monitor self-advocacy skills. Empowerment can be understood as a sociocultural process, which happens gradually, allowing individuals to appropriate knowledge about their rights in a personal-collective context and develop a critical sense, contributing directly to the promotion of health, well-being and self-confidence<sup>(2-5)</sup>.

Self-advocacy is associated with the empowerment process and can be defined as the individuals' ability to speak or act for themselves, making decisions and taking responsibility for those decisions<sup>(6)</sup>. Self-advocacy components include knowledge of self, knowledge of rights, communication and leadership<sup>(7)</sup>.

The development of self-advocacy allows people with disabilities to create a sense of community, establish their own identity and enjoy their basic human rights, such as leisure, culture and education<sup>(7)</sup>.

In several moments, problems communicating and understanding the environment formed by hearing individuals increase the dimension of the tensions suffered by young people with HI. This factor reflects on the formation of their identity and influences their view of themselves, their self-concept<sup>(1,8)</sup>.

The adolescents' ability to express their preferences and needs to others can be impaired when facing these communication problems. This ability can also be related to the adolescents' social skills, which involve the communication of feelings, attitudes, expectations, opinions and rights in an appropriate way to the situation, respecting the same possibilities of expression from their interlocutors<sup>(9)</sup>. Such skills are learned throughout development; however, they can also be developed through training.

Studies involving the empowerment and self-advocacy of children and adolescents with HI are found in the international literature<sup>(10-13)</sup>, but, to date, similar studies for this specific population have not been found in the national literature.

Given this scenario, two questions emerged: 1) "what self-knowledge do adolescents with HI have of the disability and of the benefits and limitations of the hearing (re)habilitation process?"; 2) "are recreational activities effective in developing citizenship as an empowerment practice in adolescents with HI?"

Considering these questions, this study aimed to verify the effectiveness of an intervention with recreational activities that aim to develop self-advocacy and citizenship as a practice of empowerment for adolescents with hearing impairment.

## METHODS

This research is a pre- and post-intervention experimental study with a quantitative and qualitative approach, conducted

at the Speech-Language Pathology and Audiology Clinic of the Speech-Language Pathology and Audiology Department of the Faculdade de Odontologia de Bauru (FOB/USP), internationally known as Bauru School of Dentistry. The study was approved by the Research Ethics Committee of FOB/USP, under protocol number 2,340,961.

## Participants

To compose the sample, we analyzed 20 medical records of patients who had been in therapy at the Educational Audiology Internship at the Speech-Language Pathology and Audiology Clinic of the Faculdade de Odontologia de Bauru (FOB/USP). The inclusion criteria for this study were: being 12 to 18 years old, corresponding to the adolescence stage; being a user of hearing aids and/or cochlear implant; using oral language as the primary form of communication; being considered in language category 5<sup>(14)</sup>, and being available to attend the Speech-Language Pathology and Audiology Clinic for afternoon weekly meetings in dates previously requested to their guardians. The exclusion criteria were the withdrawal or non-attendance at one of the meetings.

After analyzing the medical records, 11 adolescents met the study criteria and were invited by telephone. Four adolescents agreed to participate in the study. The focus group, composed of these four participants, was moderated by three students from the 4th year of the Speech-Language Pathology and Audiology Undergraduate Program of FOB/USP. The students were supervised by a professor responsible for the Clinic and a psychologist. One of the students was elected as the main interlocutor. Before the intervention process started, the participants and their guardians were informed about the research objectives and signed the Parental Consent Form and Informed Assent.

## Sample characterization

After acceptance, data regarding socioeconomic levels<sup>(15)</sup> and school performance<sup>(16)</sup> were collected from medical records, which were updated in the semester before the intervention program started.

Table 1 presents the demographic data regarding age, gender, socioeconomic levels, the degree and type of hearing loss, the assistive devices used, whether or not they use the Frequency Modulation System and the school performance classification.

Between the first and the second meetings, the psychologist individually assessed the level of social skills and intelligence using the Wechsler Abbreviated Scale of Intelligence (WASI)<sup>(17)</sup> and Social Skills Inventory for Adolescents (IHS-A-Del-Prette)<sup>(18)</sup>. For each participant, the evaluation lasted 60 minutes.

Table 2 presents the result of the Wechsler Abbreviated Scale of Intelligence (WASI)<sup>(17)</sup>, delivered through an Intelligence Quotient (IQ).

Table 3 presents the result of the Social Skills Inventory for Adolescents (IHS-A-Del-Prette)<sup>(18)</sup>, delivered through the Frequency and Difficulty indicators.

**Table 1.** Demographic data regarding age, gender, socioeconomic levels, the degree and type of hearing loss, the assistive devices used, whether or not they use the Frequency Modulation System and the school performance classification

Participants	Age (years)	Gender	Socioeconomic level	Degree of hearing loss	Assistive device	Device usage time (months)	Use of FM System	School performance
1	16	M	Lower lower	Profound bilateral	Bilateral CI	RE: 60 LE: 156	Yes	Inferior
2	16	M	Upper lower	Mild bilateral	Bilateral HA	RE/LE: 156	Yes	Inferior
3	17	F	Lower lower	Profound bilateral	Bilateral CI	RE: 72 LE: 168	No	Inferior
4	12	F	Lower lower	Profound bilateral	Bilateral CI	RE: 125 LE: 96	Yes	Inferior

**Subtitle:** M = male; F = female; RE = right ear; LE = left ear; HA = hearing aids; CI = cochlear implant; FM System = Frequency Modulation System

**Table 2.** Scores from the Verbal, Performance and Total Intelligence Quotients, and classification

Participants	Verbal IQ		Performance IQ		Total IQ	
	Score	Classification	Score	Classification	Score	Classification
1	71	Borderline	97	Average	81	Low average
2	75	Borderline	104	Average	88	Low average
3	59	Intellectual Disability	90	Average	71	Borderline
4	81	Low average	97	Average	87	Low average

**Subtitle:** IQ = Intelligence Quotient

**Table 3.** Frequency and difficulty in performing social skills.

Participants	Total score			Classification
	Frequency	Classification	Difficulty	
1	3	Below average	85	High Cost of Response
2	35	Low average	1	Low Cost of Response
3	35	Low average	85	High Cost of Response
4	10	Below average	60	Medium Cost of Response

### Structure of the intervention program

Five face-to-face meetings were held weekly in the afternoon and were recorded using a digital camera. Each meeting lasted 110 minutes. The intervention program “Self-advocacy for Students Who are Deaf or Hard Hearing”<sup>(19)</sup> was used to structure the themes. This program was chosen because it contains a script divided into four units. The units include introductory topics, such as the definition of self-advocacy and knowledge about the rights of people with disabilities, and complex topics, such as personal and interpersonal skills and the use of self-advocacy strategies. All the activities developed had their contents’ presentation and complexity adjusted to the research participants’ reality and profile, e.g., simplifying the terminologies and activities proposed in the original file. Other adjustments were necessary to adapt the activities according to the Brazilian laws corresponding to Brazil’s resources and support services.

At each meeting, two to three themes were addressed through activities and games that include topics related to assistive technology devices, such as the game “Rule at the School”<sup>(20)</sup>, in the Brazilian Portuguese version. The objectives and details of the activities executed in the intervention are available at <https://cutt.ly/8gr7ma6>.

Chart 1 presents the structure of the intervention program.

### Materials

The recreative activities used in the study were games from “Rule the School”<sup>(20)</sup>, which deal with topics related to hearing aids and remote microphones. These games aim to provide information that enables the empowerment of this population in the school environment.

After the formal authorization of their author, the games were translated and adapted<sup>(21)</sup>. Multidisciplinary validation was performed by a committee of professional translators and audiologists. After the committee analysis, the translator reviewed all changes made and performed the synthesis. At this stage, it was sought to find a consensus among all the committee’s observations and amendments. Once the translation and adaptation were completed, a professional graphic designer diagrammed the art according to the original layout.

The following instruments were used to collect the data:

- Self-advocacy Checklist “I can”<sup>(22)</sup>.

It is an instrument used to identify and monitor the development of self-advocacy skills. It consists of a list of self-advocacy skills, divided into three areas: personal health/medical information, hearing devices and other assistive technology use, and accommodation and consumer awareness. The questionnaire does not have a final score for classification;

**Chart 1.** Structure of the intervention program

MEETING	OBJECTIVES	PROCEDURES
1 <sup>st</sup>	· To integrate the participants	<i>Rapport.</i>
	· To establish rules	Presentation dynamics.
	· To evaluate the participants (pre-intervention)	Application of the Self-advocacy Checklist "I can" and the CPQ.
2 <sup>nd</sup>	· To promote bodily awareness	Dynamics to exercise body expression.
	· To know and understand the concepts of self-advocacy and citizenship	Themes: Self-advocacy and citizenship.
	· To develop strategies to deal with learning and communication difficulties	High school, Higher education and employability
	· To know the Brazilian Laws regarding the inclusion of people with disabilities and how to use them to obtain accommodations	
3 <sup>rd</sup>	· To identify individual qualities	Dynamic: "Valuing your qualities."
	· To understand hearing loss	Themes: Understanding hearing loss
	· To identify and describe the benefits and limitations of the use of hearing aids (HA) and cochlear implants (CI)	The use of electronic devices applied to deafness (benefits and limitations).
	· To identify and describe the benefits and limitations of using assistive technologies	The use of assistive technologies.
4 <sup>th</sup>	· To use recreational elements to reinforce and apply concepts learned in previous meetings	Dynamics using the following games from the website "Rule the School": "Rule at the school," a self-advocacy board game; "FM Tic Tac Toe Bingo Featuring Phonak's Inspiro" and "Hearing Aid Tic Tac Toe Bingo," which aim to teach vocabulary and functions of hearing devices; and "Helping Hands," which aim to teach how to request essential accommodations independently.
	· To practice self-advocacy through problem-situation games	
5 <sup>th</sup>	· To internalize the concepts learned in previous meetings	Closing dynamics with games used in the 4th meeting.
	· To evaluate participants (post-intervention)	Second application of the Self-advocacy Checklist "I can" and the CPQ.

**Subtitle:** CPQ = Classroom Participation Questionnaire; HA = hearing aids; CI = cochlear implant; FM = Frequency Modulation System

however, to demonstrate patients' evolution, one point was assigned for each skill checked.

- Classroom Participation Questionnaire (CPQ)<sup>(23)</sup>.

The CPQ is a tool that aims to evaluate the participation of hard-of-hearing students in the classroom subjectively. The questionnaire was applied in the simplified version with 16 items, divided into four subscales, scored as: 1 (almost never); 2 (seldom); 3 (often) and 4 (almost always). The four subscales are Understanding Teacher, Understanding Student, Positive Affect and Negative Affect. Higher scores are expected, except in the Negative Affect subscale, in which the lowest score is expected. To score the CPQ, add the points of one subscale at a time and divide by four. Thus, the average of the subtotal is obtained as a result.

Two instruments were used by the group psychologist to characterize the sample:

- Wechsler Abbreviated Scale of Intelligence (WASI)<sup>(17)</sup>.

WASI aims to evaluate several cognitive aspects, such as verbal knowledge, visual information processing, spatial and nonverbal reasoning, fluid and crystallized intelligence.

The test is divided into four subtests: the Vocabulary and Similarities subtests form the Verbal Scale, and the Block Design and Matrix Reasoning subtests form the Performance Scale. The Full Scale is comprised of all four scores. The results are presented as an Intelligence Quotient (IQ). Scores equal to and below 69 are classified as Intellectual Disability; from 70 to 79, Borderline; 80 to 89, Low Average; 90 to 109, Average; 110 to 119, High Average; 120 to 129, Superior; 130 and above as Very Superior.

- Social Skills Inventory for Adolescents (IHSA-Del-Prette)<sup>(18)</sup>.

The IHSA-Del-Prette is an inventory composed of 38 items. Through Frequency and Difficulty Indicators, it assesses social skills within the main situational and behavioral dimensions on everyday situations of interpersonal interactions of adolescents aged between 12 and 17. The items are grouped into six categories: (1) Empathy includes the skills to identify the other person's feelings and problems, express understanding and support, apologize, negotiate solutions in situations of conflict of interest, concern for the other's well-being. (2) Self-control is the ability to react calmly in adverse situations, such as the ones that generate frustration, discomfort, anger or humiliation. (3) Civility includes skills related to greeting and complimenting people, expressing thanks for favors or compliments and doing small pleasantries. (4) Assertiveness refers to the ability to deal with interpersonal situations that demand standing up for one's right and self-esteem, with a potential risk of undesirable reaction by the interlocutor. (5) Affective Approach refers to conversational skills, which involve establishing contact, developing conversation and expressing satisfaction or dissatisfaction with different forms of affection to establish friendships, intimate relationships, and join school or workgroups. (6) Social Resourcefulness consists of the skills required in situations of social exposure, such as presenting group work, talking about sex with parents, asking for information, explaining tasks to colleagues and talking to people of authority. In the Frequency Indicator, percentiles from 1 to 25 are classified as Below Average Repertoire; 26 to 35, Low Average Repertoire; 36 to 65, Good Repertoire; 66 to 75, Elaborate Repertoire; and 76 to 100, Highly Elaborate Repertoire.

In the Difficulty Indicator, percentiles below 35 indicate a Low Cost of Response and/or anxiety to perform social skills; from 36 to 65, a Medium Cost of Response; and 66 to 100, a High Cost of Response.

The other characterization data were extracted from the participants' charts.

### Analysis of the results of the questionnaires

We analyzed the questionnaires' results comparing pre- and post-intervention, using qualitative and quantitative methods, and making intersubject and intrasubject comparisons. After transferring the data to a Microsoft Excel spreadsheet, the tables and graphs were synthesized and analyzed.

According to the themes proposed in the meetings, the recorded material was analyzed and categorized to conduct the focus group's descriptive qualitative analysis and investigate the intervention program's possible repercussions. In a focus group, the main interlocutor assumes a role in the group, participating in activities to involve every participant in the process. Then, during the analysis, a more in-depth and complex description of each participant's experience is highlighted<sup>(24)</sup>.

## RESULTS

The results are presented according to the following structure: the content analysis of the participants' dialogues in the group meetings and the results pre- and post-intervention of the Self-advocacy Checklist "I can" and the CPQ. Participants were identified as P1, P2, P3 and P4. The researchers were

identified as T. Relevant fragments obtained in the group are used to illustrate the analysis.

### Results of the intervention program

Chart 2 shows the results of the intervention program in each meeting.

### Results of the questionnaires

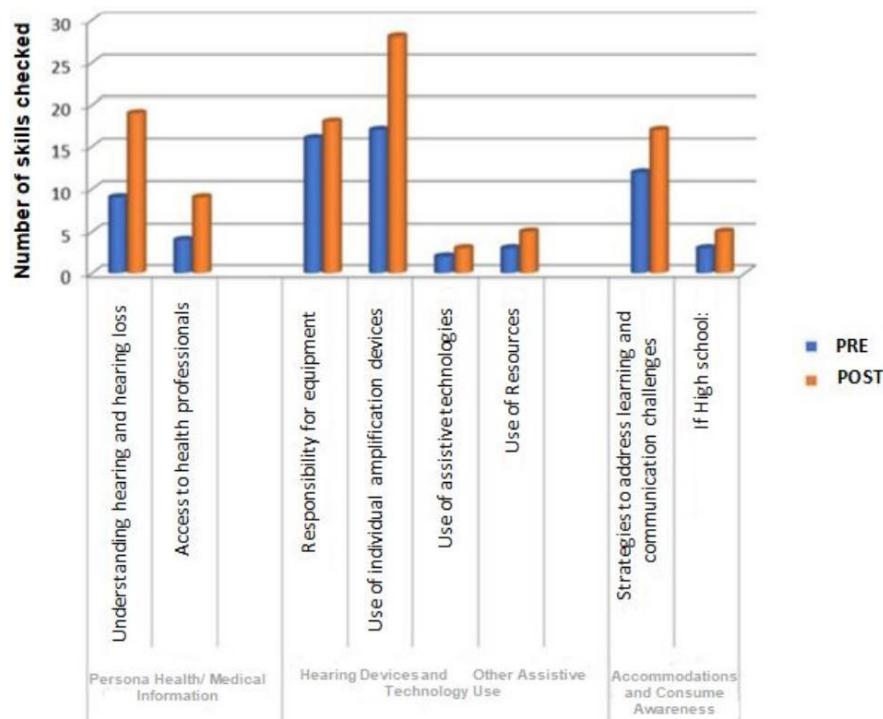
Figure 1 represents the results of the Self-advocacy Checklist "I can." The four participants' results were grouped according to the moment of application, pre- and post-intervention, and separated by topic. It is an intersubject descriptive quantitative analysis.

Figure 2 represents the results of CPQ, applied pre- and post-intervention, separated by subscales. It is an intrasubject quantitative descriptive analysis.

## DISCUSSION

In this study, the group intervention program aimed to evaluate the effectiveness of using activities and games to develop self-advocacy and citizenship as a practice of empowerment for adolescents with hearing impairment.

During the proposed activities, we observed the subjects releasing their feelings, externalizing their perceptions and expressing their preferences and daily experiences. The establishment of rapport provided a connection among the members of the group.

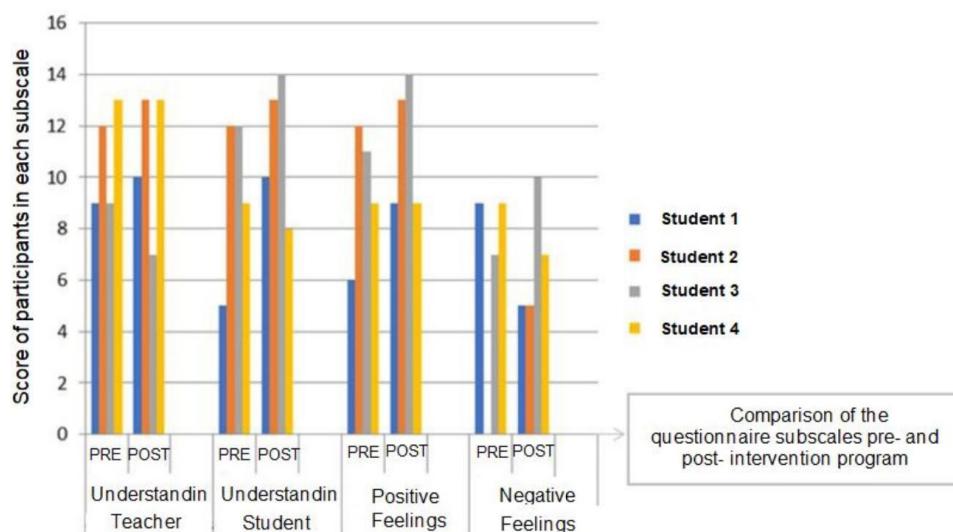


**Figure 1.** Results of the Self-advocacy Checklist "I can" pre- and post-intervention.

**Chart 2.** Results of the intervention program

Meeting	The topic addressed/ Proposed activity	Result
1 <sup>st</sup>	Rapport	P3 interacted in the rapport situation and had difficulty expressing herself in other group situations, requiring the researcher's intervention to encourage her participation, which consisted of only short comments.
2 <sup>nd</sup>	Self-advocacy	In the second meeting of the program, after performing the true or false activity about the theme, the researcher stated that "Self-advocacy is telling people what I need." "Self-advocacy is telling people what I need." All participants responded that the statement was false. Some participants pointed out that: P4: "Self-advocacy is taking care of yourself." P2: "It is to tell people about my rights."
3 <sup>rd</sup>	Hearing functioning and types of hearing loss	The dialogues demonstrated that the participants had limited knowledge about how hearing works and the types of hearing loss. The researcher presented a diagram to show how hearing works and images to exemplify the types and degrees of hearing loss. After this explanation, the level of knowledge was resumed through questions: T: "When there is a problem with the sound conduction, what is the type of hearing loss?" P1: "Conductive." T: "And when the loss affects the cochlea?" P1: "Sensorineural is the hearing loss in the cochlea."
	Use of hearing aids and assistive technology	The participants were able to describe the functions of each assistive device and list some of their components. T: "What is the battery for?" P2: "The battery is used to power the device." P2 explained how the parts of his hearing aid worked, especially the volume controls. P1 explained the functioning of his CI and emphasized that the CI helps him to understand speech. P4 explained his CI's connectivity with TV and cell phone when he wants to listen to music. Some hypothetical situations were raised regarding the use of hearing devices. Participants were encouraged to answer what they would do in those situations. If a situation had already happened to them, they were encouraged to answer what they had done. T: "What would you do if a new teacher, who did not know that you use the FM System, arrived in the classroom?" P1: "I would hand the FM microphone to him and explain how it works." P1: "Once, the teacher forgot the microphone on while calling out another student. It was not cool, but the teacher apologized." P2: "I would warn the teacher and explain."
4 <sup>th</sup>	Access to health professionals and each of their functions on the health service	After the discussion was held in the meeting, the participants could describe each health professionals' function.
5 <sup>th</sup>	Reapplication of "Rule at the School" games translated into Brazilian Portuguese, also used in the 4th meeting	The adolescents were very excited and participative. From their answers to the games' questions, we noticed that the activity contributed to the internalization of the contents worked in the previous meetings, especially because, when there were doubts, the participants retrieved the contents and discussed them with the group.

**Subtitle:** P = participant, T = researcher, FM System = Frequency Modulation System



**Figure 2.** Results of the Classroom Participation Questionnaire (CPQ) pre- and post-intervention.

Regarding participation in activities and group discussions, P1, P2 and P4 found it easier to express themselves, making comments and contributing to the activities and discussions. However, P3 had considerable difficulty expressing herself, which can be justified by the low performance on the Verbal IQ (Table 2), which includes two subtests (Similarities and Vocabulary) that evaluate competences regarding linguistic integration and expression of thought. The Similarities subtest assesses the ability to create logical connections and synthesize and integrate verbally expressed knowledge categories. The Vocabulary subtest assesses performance according to distinct abilities, some of which are related to oral language skills and others related to written language.

In the Performance IQ, all participants were classified as average. In the Total IQ, which includes all subtests, P1, P2 and P4 were classified as low average and P3 as borderline (Table 2).

Another aspect analyzed refers to the repertoire of social skills. P3 also presented serious difficulty in emitting her social skills, although she presented a reasonable Frequency of these skills. In addition to the deficiency of verbal intellectual abilities, the limited social skills' repertoire contributed to P3's difficulty communicating and expressing herself during the group dynamics. P1 presented a low average classification for the Frequency Indicator and a High Cost of Response for the Difficulty Indicator in the IHSA-Del-Prette. P4 also presented a low average classification for Frequency. Such results agree with another study, which showed limited social skills' repertoire in children with HI, even when compared with children with language disorder<sup>(25)</sup>. A good social skills' repertoire is necessary for children to deal with interpersonal situations' demands since there is a positive correlation between children's social skills and several adaptive functioning indicators, such as academic performance, responsibility, independence and cooperation<sup>(9)</sup>.

In this study, we adopted a language classification criterion<sup>(14)</sup> that includes categories 1 to 5. It is important to emphasize that all participants were classified in category 5, i.e., they can construct sentences of more than five words, conjugate verbs, and use the plural form. One study<sup>(10)</sup> evaluated the language skills of 27 students with HI in northern Israel, and the authors found positive correlations between syntactic and pragmatic skills and self-advocacy.

Language skills are important and necessary for good communication and have a direct correlation with self-esteem. Another study<sup>(26)</sup> compared the self-esteem of children with HI and children with normal hearing and investigated the influence of communication, type of education and audiological characteristics. The findings showed that children with HI experience lower levels of self-esteem in social domains. The results indicated a direct impact between well-developed language skills and the improvement of self-esteem in children with HI when compared to their peers.

According to the information taken from the participants' medical records, all of them were classified as inferior regarding the school performance test (Table 1). This test aims to objectively assess critical school performance skills, such as writing, arithmetic and reading. The second meeting of this study aimed to develop strategies to deal with learning and communication difficulties, which is important to examine considering the difficulties pointed out by the school performance test. This study's data agree with another study<sup>(27)</sup>, which evaluated and characterized the school performance of children with HI who used cochlear implants. Their results showed that 74% of them

had general school performances below expectations, presenting greater difficulty in writing.

When comparing pre- and post-intervention (Figure 1), the differences observed in the Self-advocacy Checklist "I can" demonstrate the benefits of the intervention program proposed in this study, especially in the areas of hearing and hearing loss, access to health professionals, responsibility for equipment and use of hearing aids. Therefore, indicating that the participants reached the knowledge component, according to the self-advocacy model recommended by the literature<sup>(28)</sup>.

This self-advocacy model<sup>(28)</sup> suggests that individual advocacy comprises three essential components: knowledge, motivational characteristics and skills. The knowledge component includes personal knowledge of difficulties, strengths, rights and duties. The motivational characteristics component includes basic self-advocacy characteristics, such as self-esteem, self-efficacy, self-determination and internal locus of control. The skills component includes skills that increase the efficiency of self-advocacy activities, such as decision-making, problem-solving, assertive communication and using self-advocacy statements.

The last two components of self-advocacy, according to this model<sup>(28)</sup>, can be seen in the CPQ's subscales<sup>(23)</sup> (Figure 2), in which the scores in some items of the questionnaire worsened. The knowledge acquired by the adolescents during the intervention program and the reflections generated during the activities made them reevaluate the situations experienced in the classroom. This reevaluation altered their judgment in the face of such circumstances, which may justify the worsening of some scores.

Knowing more about their condition and their rights has led the adolescents to change how they relate in various areas. The varieties of recreational materials available contributed to the externalization of feelings, in addition to favoring knowledge about the functioning of hearing, understanding of hearing loss and functioning of hearing devices. The recreational element in the rehabilitation context has been used by several programs to humanize health, promoting human development combined with physical and mental health<sup>(29)</sup>.

The findings of this study concur with other studies that correlate the development of empowerment in adolescents with the promotion of health and well-being<sup>(2-4)</sup>. Furthermore, factors such as autonomy, self-awareness and social support are related to the empowerment process<sup>(5)</sup>.

Group intervention, aimed to promote health education for adolescents, enables self-confidence to deal with their health conditions during the transition stage between adolescence and adulthood<sup>(4)</sup>. In addition to working with the group participants' personal concerns, this intervention should encourage them to engage civically and participate in society<sup>(2-3)</sup>, favoring the practice of citizenship and self-efficacy<sup>(3)</sup>.

The sample size is a limitation of this study because, although 20 adolescents were invited, only four agreed to participate in the research. The time in which the meetings were held coincided with some school periods, justifying the low adherence.

In a study<sup>(10)</sup>, in which only 34% of the invited students agreed to participate in the research, the authors justified the small sample by the difficulty in locating students with HI who were not participating in self-advocacy intervention programs.

In contrast, in the Brazilian context, we investigate the motivation of these adolescents to participate in a new rehabilitation group, the self-assessment of their limitations concerning self-advocacy and the expectations of the adolescents

and their families concerning the program and the outcome of the hearing rehabilitation. In the family context, a difference in the hearing and language development of children with HI is observed, influenced by environmental and socioeconomic factors. In the study, three participants were classified as a lower-lower class in the socioeconomic levels test, and one as an upper-lower class.

Thus, although the present study proposes an intervention program for the practice of self-advocacy in a group of adolescents, the development of knowledge, motivational characteristics and related skills should be encouraged from early childhood. Some tools can help in this process. One of them is the “Ida Transitions Management,” which is an interactive platform available at <https://idainstitute.com> designed to help children and adolescents with hearing loss and their families to manage transitions during childhood, adolescence, and adulthood.

The concept of empowerment and self-advocacy in this research is directly related to the participants' knowledge about their physical condition, individual qualities, use and handling of electronic hearing devices and their rights, such as knowing the Brazilian laws ensuring the rights of people with disabilities and how to use them. Also, the use of games with problem-solving situations led to the practice of concepts and skills developed during the intervention program.

In another study, researchers<sup>(13)</sup> evaluated a strategy based on a computer program to develop self-advocacy skills in 15 high school students with disabilities (intellectual, Tourette's syndrome and other associated disorders). The program consisted of six lessons that included concepts about self-advocacy, self-knowledge and communication. The results showed that the program effectively increased students' participation in the classroom, who also managed to participate and answer questions about the Individualized Education Program, with more specific information.

During the intervention program, strategies to deal with learning and communication difficulties were addressed, such as identifying accommodations that help to deal with communication and learning needs, talking about the Individualized Education Program, describing the educational background, identifying academic support and, when necessary, avoiding situations of ableism. Ableism is materialized through prejudiced attitudes that rank subjects according to their bodies' suitability to an ideal of beauty and functional capacity. Based on ableism, people with disabilities suffer from discrimination<sup>(30)</sup>.

Once again, we highlight the importance of empowering people with HI through strategies that promote knowledge and awareness about themselves and their rights, undoing the paradigm of stigma and disability. It is important to note that, since there are no other similar studies in the national literature for this specific population, the results discussed contribute to future intervention studies. In addition, the actions described in this study sought to improve the accessibility of students with HI to education through the effective use of assistive technologies, essential for their rightful and active participation in the classroom.

## CONCLUSION

Through this study, considering the intervention program developed, the dynamics and games used to share feelings and experiences and the results obtained in the evaluations,

we concluded that the intervention program with the proposed structure was efficient in developing the skills of self-advocacy and citizenship for empowering adolescents with hearing impairment.

## ACKNOWLEDGMENTS

To everyone involved in this project's execution, especially Cheryl DeConde Johnson, Ed.D., and Carrie Spangler, Au.D., who authorized and made available the Self-Advocacy Checklist “I can” for translation. To Monica Faherty, M.S., CCC-SLP, who authorized and made available the “Rule the school” games for translation. To the Coordination of the Unified Scholarship Program for Undergraduate Students (PUB-USP), Faculdade de Odontologia de Bauru (FOB/USP) and the support of the 2nd Edict Santander/USP/FUSP from the USP's Dean of Culture and Extension Initiatives (without financing process number).

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