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Effectiveness in adherence to auditory rehabilitation in children: Family adherence group and initial therapy

Efetividade na adesão a reabilitação auditiva em crianças: Grupo de Adesão Familiar e terapia inicial

Eficacia em la adherencia a la rehabilitación auditiva em niños: Grupo de la família adhesión y la terapia inicial

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Abstract

Introduction: Early diagnosis of hearing loss in children and intervention, are determinants for the development. Use of hearing aids; Family members' expectations and their implication with treatment are important factors for the prognosis. **Objective:** This study verified the effectiveness of adherence to rehabilitation, the consistency of the use of hearing aids, participation in the therapies and in the initial phase of the therapeutic process (ADAPTI), in a Municipal Health Service of São Paulo. **Method:** The research was carried out with hearing impaired children attending a Municipal Health Service, their parents and therapists. This study was quanti/qualitative. We characterize the patients from a demographic, audiological point of view, the consistency of the use of the hearing aids and the effectiveness of adherence. **Results:** The 25 children were organized into five groups. Of these, 13 were female and 12 male.

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Authors' contributions:
BCY: designed the study and was responsible for data collection, analysis, interpretation and developed the discussion.
BCAM, ECC, LBF: participated in the design of the study and in the analysis of study results.
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Twenty four had sensorineural hearing loss. One had conductive loss and the hearing aids were adapted with bone vibrator. Ten had suspicion/presence of other compromises. We classified them according to the ADAPTI outcome. Different prognoses interfered in the orientations, disinterested parents with different demands. **Discussion:** The group was a facilitator in the process. More homogenous groups lead to greater empathy among participants and greater likelihood of adherence. Distance and SII 65 dB are factors that appear to affect adherence. **Conclusion:** Homogeneous groups provided greater adhesion; the activities provided discussions that promote adherence to treatment; the group was considered a facilitator. The distance and SII 65 dB seem to affect adhesion.

Keywords: Hearing; Hearing Loss; Hearing Aids; Group Practice and Narrative Therapy.

Resumo

Introdução: O diagnóstico precoce da deficiência auditiva em crianças e a intervenção são determinantes para o desenvolvimento. Uso do AASI; expectativas dos familiares e sua implicação com o tratamento são fatores importantes para o prognóstico. **Objetivo:** O objetivo foi verificar a efetividade da adesão à reabilitação auditiva, a consistência de uso do AASI, a participação nas terapias e nos grupo na fase inicial do processo terapêutico (ADAPTI), num serviço da Rede Municipal de Saúde de São Paulo. **Método**: A pesquisa foi realizada em crianças com deficiência auditiva atendidas em um serviço da Rede Municipal, seus responsáveis e terapeutas. Este estudo teve caráter descritivo quanti/qualitativo. Caracterizamos os sujeitos do ponto de vista demográfico, audiológico, da consistência de uso do AASI e da efetividade na adesão. **Resultados:** As 25 crianças foram organizadas em cinco grupos. Dessas, 13 eram do gênero feminino e 12 do masculino. Vinte e quatro tinham perda auditiva sensorioneural. Uma tinha perda condutiva com AASI adaptado com vibrador ósseo. Dez tinham suspeita/presença de outros comprometimentos. Os classificamos conforme o desfecho do ADAPTI. Diferentes prognósticos interferiram nas orientações, desinteressando os pais com demandas diferentes. **Discussão:** O grupo de Apoio Familiar (GrAF) foi um facilitador no processo. Grupos mais homogêneos levam maior empatia entre os participantes e maior probabilidade de adesão. A distância e o SII 65 dB são fatores que parecem afetar a adesão. **Conclusão:** Grupos homogêneos propiciaram maior adesão; As atividades propiciaram discussões que promovem adesão ao tratamento; O GrAF foi considerado um facilitador. A distância e o SII 65 dB parecem afetar a adesão.

Palavras-chave: Audição; Perda de audição; Auxiliares da audição; Prática de grupo e Terapia narrativa.

Resumen

Introducción: El diagnóstico precoz de lahipoacusia y la intervención son cruciales para el desarrollo. El uso de audífonos; expectativas de la familia y su relación com tratamento son factores importantes para el pronóstico. **Objetivo:** Verificar la eficacia de la adherencia a la rehabilitación auditiva, el uso de la audición, la participación em la terapia y el grupo al inicio del processo terapéutico (ADAPTI), um servicio de la ciudad de San Pablo de la Salud. **Método:** El estudio se llevó a cabo em niños com audición asistió a unservicio de la red municipal, sus agentes y los terapeutas. Este estúdio fue cuantitativo/cualitativo. Los sujetos em el punto de vista audiológico demográfica, el uso de la audicióncoherencia y laeficacia de lasayudas de miembros. **Resultados:** 25 niños se organizaronen cinco grupos. 13 eranmujeres y 12 hombres. 24 tenían una pérdida auditiva neurosensorial. Una perdida conductora con vibrador óseo. Diez habían sospechado/presencia de otros compromisos. Los clasificamos como el resultado de ADAPTI. Diferentes prognósticos han interferido em las directrices, los padres con diferentes demandas. **Discusión:** El grupo fue un facilitador em el proceso. Grupos más homogéneos tienen una mayor empatía entre los participantes y los más propensos a unirse. La distancia y el SII 65 dB son factores que parecen afectar e lcumplimiento. **Conclusión:** grupos homogéneos, mostró una mayor adherencia; Las actividades se hanllevado a buenas discusiones; El grupo fue considerado un facilitador. La distancia y el SII 65 dB parecenafectar el cumplimiento.

Palabras clave: Audición; Pérdida auditiva; Audífonos; Práctica de grupo y Terapia narrativa.

Introduction

The detection and early diagnosis of pediatric hearing loss and intervention during the first months of life are important factors for hearing and language development. According to the publication of the National Policy on Hearing Health Care (PNASA; Concierge GM no. 2.073/04[1]) on September 28, 2004, a large number of children with hearing loss had access to the necessary technological resources, such as hearing aids (HAs) and cochlear implants (CIs), in addition to audiologic diagnosis and necessary auditory rehabilitation.

Unidentified hearing loss may have a significant effect on a child's development. Language is not restricted to the ability to communicate; it is a constituent of the child, and enables the building and organization of thoughts and experiences[2-7]. Additional factors, such as the effective use of electronic devices (HAs and/or CIs), the quality of the amplification, and family implications for treatment may be factors that determine a good prognosis for the child. Additional factors include economic conditions, culture, and academics[8-10].

The preoccupation with the quality of amplification may be associated with the consistent use of electronic devices, which alone is insufficient to promote the development of hearing and language abilities. It is a premise of the PNASA that speech-language intervention should occur immediately after diagnosis. This initial intervention includes the use of electronic devices, determination of the expectations of therapy, and the family's orientation to the process.

São Paulo is the most influential Brazilian city in the global economy. It has more than 11 million working citizens[1] who use private or public transportation and face barriers to access to health services. Distance, access, traffic, time spent at work and school, and available resources in the housing region may be barriers to treatment adherence. These factors can interfere with the family's availability to participate in the therapeutic processes of the child, not only in the initial stages, but also over time.

It is necessary to study how the impact of the diagnosis interferes with the everyday life of these families, how these factors can interfere with their lives, how they can interfere with the consistency of HA use, and how a familiar support group can assist the rehabilitation process. This study aimed to identify those barriers and how they can affect adherence to treatment. The participation of the family in the therapeutic processes of children with hearing loss in a municipal hearing heath service in São Paulo was a timely approach to determination of the barriers and the facilitating factors of adherence to rehabilitation.

The objective of this study was to verify the effectiveness of adherence to the auditory rehabilitation process and to describe and contextualize the barriers and facilitating factors in the initial steps of the rehabilitation process (ADAPTI), including the patient's consistency of HA use and the family's participation in therapy and in initial group activities, of children with hearing loss in the first years of life in a municipal health service in São Paulo.

Specific objectives included the analysis and characterization of the subjects using the service from audiological and demographic perspectives, and the qualitative analysis of discussions raised during family adhesion group (GrAF) meetings and their relationship to the barriers and facilitating factors in the effectiveness of adherence to auditory rehabilitation.

Methods

This study included children with hearing loss attending a municipal health service in São Paulo who were in the initial stage of HA adaptation and therapy, and their parents. Patient characteristics were quantitatively and qualitatively analyzed. This project was approved by the ethics committee of our institution (no. 1.308.880).

After the diagnosis of hearing loss, the selection and adaption of hearing aids was initiated. The objective of this stage, beyond the initial orientation of the parents to the condition, was to initiate speech and auditory therapy with family participation, to mobilize the parents to adhere to the therapeutic process, and to determine options for speech therapy closer to home.

This stage was called HA adaptation and initial speech therapy (ADAPTI), and was characterized as a transition period between the diagnosis, and HA adaptation and child intervention. The children received one 50-min therapy session per week with a speech therapist. This stage also included weekly meetings of the family adhesion group (GrAF). The

1. IBGE de 2014.

group's objective was to expand the initial therapy frame using activities to promote the strength and empowerment of the parents during ADAPTI[11].

The GrAF met with parents soon after diagnosis, while the parents were in the initial stages of HA adaptation at the institution. The group discussed the hearing potential of each child, the proper intervention, made referrals to appropriate intervention programs near the child's home, and educated the parents about the child's condition and addressed their concerns. This period, including GrAF meetings and speech therapy, lasted two months (8 weeks). The group mediator had a fundamental role, as the mediator was also the group facilitator. Each week, the group performed a different activity to approach and orient family members to the importance of hearing aids, hearing skills, speech therapy, and possible surgical referrals (such as for cochlear implants)[12].

Chart I. Description of the activities at GrAF

Week	Activity	Description of the activity used
Week 1	Presentation of the booklet illustrated with the first orientations	We show the groups and the therapists, as well as its mode of operation and the Illustrate material (Monteiro 2013).
Week 2	Photo activity	In this activity we distribute a white paper and ask the participants to think in a childhood photo or moment. That could be a significant family custom, event or important person from your childhood a significant family custom, event or important person. Later each one commented.
Week 3	Genealogical Tree Activity	We distribute a paper structure with the genealogical tree. We orientate that the parents full the spaces with their familiar names. In the end of the process each one commented on his family, bringing information about culture, regionalization, habits and memories.
Week 4	Collage activity	We utilize different materials like Scrap, sheets of aluminum foil, buttons, colored papers, glue, scissors and others materials, that were exposed on a desk. Like this the parents could do the activity and portray your feelings or memories of your childhood and current life
Week 5	Collage activity	-
Week 6	Activity of the experience of different roles	With the moderator we separate the papers to the activity, they had to familiarity with the role and articule what had been understood. The roles were: Mother, father, and therapist with more and less experiences. They were separate in two groups: one represents the parents and the other one the programs members.
Week 7	Activity of the experience of different roles	-
Week 8	Closing	In this day we finish the activities, and we removed all final doubts and make a discussion of the learning process and possible modifications

Each group was created in order of the demand generated by the prescription service and the indication for the need for hearing aids. After completing ADAPTI, each family was advised about periodic follow-ups with the service.

Subjects

This study included all children with hearing aids aged 0 to 3 years who started attendance at ADAPTI during the study period from January to July 2016, and their parents and/or guardians.

Materials

The following materials were necessary for this work: HIPRO, NOAH, and software from different HA manufacturers (to verify the average hours of HA use). The consistency of HA use was measured by the mean number of hours per day of the Hearing Aids (HA) use, which was transformed into the percentage of time in relation to the number of hours the child was awake[13]. Families were classified according to the effectiveness of their adherence to the auditory rehabilitation process (developed for the completion of this study[14]), and the frequency of attendance at the group meetings.

Data analysis

Data analysis was divided into two parts. Descriptive analysis included the audiological and demographic characterization of subjects. Qualitative analysis included the analysis of discussions during GrAF meetings and their relationship to the barriers and facilitating factors of the effectiveness of adherence to the auditory rehabilitation process.

Results

The results are presented in three parts. First, we provide the demographic and audiological characterizations of the 25 children included in the study. Second, we include the classifications of the parents according to the effectiveness of their adherence to the auditory rehabilitation process, and include some specific cases as examples. Third, we discuss cases from the contents of group meetings and their relationship to the findings.

Auditory and demographic characterization of children and their families

GrAF participants during the ADAPTI process, including 25 children and their parents/guardians, were organized into five groups. Of these, 13 (52%) children were female and 12 (48%) were male. Twenty-four subjects (96%) had sensorineural hearing loss and used digital hearing loss devices programmed according to their losses. One child had conductive loss and used HAs adapted with bone vibrators. Of the 25 children in the study, 10 (40%) had other suspected or confirmed impairments. Four of the 25 children started at LIBRAS (Brazilian Sign Language) school during the ADAPTI period.

Table 2 describes the population studied in terms of age at diagnosis, hearing age at the beginning of ADAPTI, distance from home to the service, time spent in transportation from home to the service, SII 65 dB, consistency of HA use at the beginning of ADAPTI, consistency of HA use at the end of ADAPTI, and group participation. All variables analyzed had large variations, which represented the heterogeneity of the patients in the service. For example, the age of entry into the service ranged from 2 to 43 months. The distance from the service ranged from 6.1 to 53.2 km, as this center is a referral center for babies in all regions of the country.

Chart II. Descriptive Statistics (n=25)

	N	Minimum	Maximum
Age of entry into service (months)	25	2	43
Age at the beginning of ADAPTI (months)	25	3	13
Distance (Home/service) (km)	25	6,1	53,2
Travel Time (minutes)	25	45	180
SII 65 dB	24	10	85
Consistency of use in% - initial	25	9	100
Consistency of use in% - Final	25	3	123
% Presence in groups	25	13	100

The study population varied in the number of contacts necessary for travel from the residence to the hearing health service at the beginning of ADAPTI. In all, 44% of families required two buses to get to the service, 20% required one bus, 12% required three buses, and 8% required four buses. The distribution of hearing loss also varied; 68% of the children had severe or profound loss, 24% had moderate loss, and 8% had mild loss. Subjects were classified according to socioeconomic classification at the beginning of ADAPTI; 92% of families were classified into the socioeconomic level below C1, and 8% were classified into level B2. Enrollment in daycare/school varied among subjects. Twelve children were enrolled in municipal schools or day care centers; 8 of those were in full-time schools. The remaining 13 children did not attend school.

Classification of the effectiveness of adherence to the auditory rehabilitation process

To guide the analysis of the facilitating factors and barriers to adherence to the auditory rehabilitation process, we classified the subjects according to the outcome of their ADAPTI process; we referred to the result as the effectiveness of adherence to the auditory rehabilitation process. We classified families into three groups, which are described below. The criteria considered that the outcome depended on multiple factors that were not always associated with audiological variables or the effort of the family to engage. Three judges who were part of the team of therapists remained in contact with the relatives from the adaptation of the electronic devices to the finalization of the GrAF, periodically returned to the institution, and classified the parents. Each case was thoroughly discussed and classified, and individual history was also considered.

Category 1: The parent/guardian adheres to and understands the process of hearing rehabilitation and the needs and demands of the child. The person participates in most parts of the GrAF by interacting with other members and participating in discussions. The consistency of HA use is effective, considering eventual difficulties with the molds. The expectations of the child's speech and hearing match the child's developmental prognosis. In cases of profound hearing loss, for example, attitudes that demonstrate understanding of the child's demands are represented by actions such as presence at the CI surgery despite the uncertainty of the operation, enrolling the child in LIBRAS school, and enrolling the child's family when indicated. We also considered the understanding of the limitations inherent in other impairments associated with hearing loss and the accomplishment of compatible actions.

Category 2: The actions of the parent/guardian are between adherence and non-adherence to the auditory rehabilitation process. The person can understand the requirements for the child, but does not execute them immediately or completely, such as enrolling the child in a special school, but not the family; using oral language; using electronic devices but with an average use that is lower than expected; and inconsistently participating in GrAF with minimal interaction and not discussing their concerns. The consistency of HA use is not effective. Although the parent has expectations of the child's speech and hearing similar to the child's prognosis, their actions are not always compatible. The parent may have personal problems and low availability due to factors independent of their actions. Partial adherence was considered to be the limit of adherence to the auditory rehabilitation process.

Category 3: The parent/guardian does not adhere to the auditory rehabilitation process and does not seem to understand the needs and demands of the child, such as the child having other commitments associated with hearing loss. The person does not arrange other necessary care, such as occupational therapy and physical therapy. Despite the low SII, the family does not accept placement on the waiting list for the HC (reference centers responsible for the CI process) to perform CI. The child is not enrolled at a LIBRAS school and does not use electronic devices, even if they receive the necessary care. GrAF participation is sporadic. Consistency of HA use is sporadic and is not effective. The parent's expectations of the child's speech and hearing do not match the child's developmental prognosis.

Dynamics and parental reports of family adherence groups

Identification of groups

Five groups were formed during the data collection period. We characterized each group using audiological and demographic variables.

Group 1

Group 1 included five families. Four children were female; one was male. One child had additional impairments. The corrected age and the SII 65 dB varied greatly among subjects. Three of the five children had an SII 65 < 37%; the other two children had optimal audibility. All participants attended at least 50% of the proposed sessions and participated in the activities at each session.

Chart III. Characterization of Group 1 subjects

Subject	SII 65 dB (%)	Age (in months)	Other commitments	Presence in ADAPTI (%)	Consistency of use in%- Final	Classification effectiveness in adhesion
S1	65	15	No	75	94	1
S2	32	36	Yes	62,5	85	2
S3	16	24	No	75	123	1
S4	85	6	No	75	100	1
S5	37	11	No	50	90	2

Of the four proposed activities, the trigger in this group was the genealogical tree. Several questions were raised during the participants' discussion of their childhoods, family traditions, memories of their current families, and what they would like to pass on to their children. The mother of S5 raised this question in her statement: "I do not have much contact with my mother and I do not want that to happen to my daughters."

The difficulties of adherence to ADAPTI and the consistency of HA use emerged through discussion of familiar questions about the distance from the residence to the service ("Today I came a little late, and I almost could not come here"), difficulties managing the diagnosis ("How can I be well if I have received this news?"), and placement and maintenance of the hearing aid in the ear ("S3 is taking off the hearing aid more frequently, so it is difficult to stay with it, you know?")

The observation of the benefit of the electronic device to the child was a facilitator of adherence to consistent HA use, as mentioned by A., the mother of S5, who stated "In the case of R., I think the device is the cure." Contact with other families of children with hearing loss was also a facilitator of adherence, as mentioned by B., the father of S1: "I feel as if we are all in the same boat." The experience of the group was also a facilitator for effective adherence to the auditory rehabilitation process. As one member stated: "Coming here and talking to this group has opened my mind. I can say that I am more sure of what I want. I am really upset that this is our last group. It's so good for us to talk to other people like us; I feel more at ease when I come here."

The children ranged in age from 6 to 36 months. All families attended at least 50% of the meetings. All children used HAs at least 85% of the time they were awake. The composition of Group 1 seems to have favored adherence to rehabilitation and empathy among the parents. The similarity of auditory hearing with HAs (SII 65 dB) may have facilitated the formation of partnerships. The classifications of the effectiveness of adherence were Category 1 (understanding/adherence, 3 cases) and Category 2 (partial understanding/adherence, 2 cases). There were no cases of non-adherence in this group.

Group 2

Group 2 included four families. Two children were female and two were male; one presented with other impairments associated with hearing loss. The corrected age and the SII 65 dB varied greatly among subjects. In this group, one of the children had an SII 65 of 10% and the other three had good audibility (> 48%). Three of the participants attended at least 50% of the sessions and participated in the activities performed at each session.

Of the four proposed activities, the trigger in Group 2 was the experience of roles. This activity initiated a discussion among the participants of the importance of HA use, the need to keep the equipment in the ear, and the development of language and hearing. As M., the grandmother of S7, stated: "The device is a benefit for our son. The sooner he uses it, the easier it will be to talk. He will grow up thinking that using the device is normal". The need for attendance ("You have to come, to learn what you have to do at home"), acceptance of the HAs ("We parents have to accept the deficiencies in our child's hearing. It's the only way for them to accept it"), and understanding the need for weekly therapy were also discussed. In this group, the moderator routinely intervened to ask the participants to perform the activities.

The discussion of the difficulties of adherence to the rehabilitation process included transportation

Chart IV. Characterization of Group 2 subjects

Subject	SII 65 dB (%)	Age (in months)	Other commitments	Presence in ADAPTI (%)	Consistency of use in%- Final	Classification effectiveness in adhesion
S6	80	33	No	50	35,8	2
S7	68	40	No	75	66,6	2
S8	48	4	No	100	58,7	1
S9	10	40	Yes	12,5	-	3

from the residence to the service ("Today it was very difficult to come"), maintaining the hearing aid in the ear ("S8 is becoming more, he's removing [the device] all the time.") and identification with the other participants in the group. As the mother of S8 stated: "If there were more people S8's age, I think the group would help me more."

The observation of the child's benefit from the electronic device was a facilitator of adherence to HA use, as mentioned by B., the father of S7: "Now we talk, and she understands." The experience of the group also facilitated effective adherence to auditory rehabilitation: "Here we learn how to deal with the condition, the importance of using the device, and how to have more patience".

Three of the children were > 33 months old. Three families attended at least 50% of the meetings. Two subjects used the HAs at least 50% of the time they were awake, one subject had a use rate of 35.8%, and one was not able to perform the measurements as he did not attend any subsequent follow-up meetings. The composition of Group 2 did not seem to facilitate adherence to the rehabilitation process in all families, as there were differences in chronological age and SII 65 dB. These differences may have been related to identification, empathy among the parents, and, consequently, to the effectiveness of adherence to auditory rehabilitation. The effectiveness of adherence was classified as Category 1 (one case) or Category 2 (two cases). S9 did not understand/adhere to the auditory rehabilitation process, which could be justified by the low SII 65 dB (10%), and by the presence of other impairments associated with hearing loss that seemed to interfere with the adherence process.

Group 3

Group 3 included four families. Two children were female and two were male. Three children had other impairments associated with hearing loss. The corrected age and the SII 65 dB varied greatly among subjects. In this group, two of the four subjects had an SII 65 dB of < 37%, and one had excellent audibility (> 83%) with unilateral hearing loss. The SSI 65 dB of S13 could not be measured, since the patient used a hearing aid adapted with a bone vibrator. Three of the participants attended at least 50% of the proposed sessions and participated in the activities at each one.

Chart V. Characterization of Group 3 subjects

Subject	SII 65 dB (%)	Age (in months)	Other commitments	Presence in ADAPTI (%)	Consistency of use in% - Final	Classification effectiveness in adhesion
S10	83	21	Yes	75	3,6	1
S11	36	10	Yes	37,5	15,0	3
S12	15	43	No	87,5	59,1	1
S13	-	17	Yes	50	45,4	1

Of the four proposed activities, the trigger in this group was photography. The parents took advantage of the session by contributing important information, memories of their childhoods ("I didn't like to take pictures"), and their similarities with their children. R., the father of S10, mentioned that "I have always been very quiet and S10 seems like me in this regard."

The group also related barriers to adherence to auditory rehabilitation and to the consistency of HA use. They related problems with transportation, as reported by the mother of S11 ("Our bus was full today; it was very difficult to get here with him"), and difficulties in maintaining HA placement in the ear ("When we call her attention and she's using the device, she wants to take it out.")

Observation of the child's benefit from the electronic device was a facilitator of consistent HA use, as mentioned by A., the mother of S13: "Now we talk, and he understands what we are talking about." The experience of the group was also thought to facilitate adherence to auditory rehabilitation. As the mother of S12 stated, "The group overcame my expectations. I think I'm leaving much more prepared". The interaction with the therapist was also a factor of adherence ("Without you I do not think I could do it.")

The chronological age ranged from 10 to 43 months. Three subjects attended at least 50% of the meetings. Two children used HAs < 15% of the time they were awake. S10 had problems with the mold, which made maintenance of the HA in the ear difficult. The composition of Group 3 seemed to favor adherence to the rehabilitation process and empathy among the parents. The similarity of the presence of other impairments associated with hearing loss may have facilitated the construction of partnerships. The effectiveness of adherence to rehabilitation was classified as Category 1 (three families) of Category 3 (one family). S11 did not understand/adhere to the auditory rehabilitation process; the lack of attendance may have been due to the difficulties in bringing the patient to the service, as he lived 20 km away.

Group 4

Group 4 included six families; two children were female and four were male. Four had other impairments associated with hearing loss. The corrected age and the SII 65 dB varied greatly among subjects. In this group, three of the six subjects had an SII 65 dB > 50%, the other three had an SII 65 dB < 40%. Five participants attended at least 50% of the sessions and participated in the activities at each session.

Chart VI. Characterization of Group 4 subjects

Subject	SII 65 dB (%)	Age (in months)	Other commitments	Presence in ADAPTI (%)	Consistency of use in% - Final	Classification effectiveness in adhesion
S14	39	4	No	50	100,0	2
S15	61	13	Yes	87,5	26,0	1
S16	54	20	No	37,5	-	2
S17	30	5	Yes	75	61,1	3
S18	52	27	Yes	50	40,9	2
S19	33	33	Yes	62,5	100,0	1

Of the four activities proposed, the trigger for this group was photography. The parents engaged in the activity, providing important information, memories of their childhoods ("My God that photo was horrible, but I had a very nice childhood"), and how good it was to be in a family and to have someone to share their difficulties. They also discussed and their similarities to their children, as mentioned by E: "I recognize myself in S17".

Common difficulties of adherence to auditory rehabilitation and the consistency of HA use included problems with transportation ("It's a good thing that she came to help me; it's very difficult to get here"), problems with time ("There

isn't enough time today, I'm very busy"), lack of orientation ("I received the news of the problem, but what should I do with it?"), problems with the family and with other children ("It's so complicated because I have my home too"), and difficulties accepting other commitments, as in the case of S17's mother ("It's no longer enough to tell me that she's deaf, all this too?).

The observation of the child's benefit from the electronic devices facilitated consistent HA use, as mentioned by A, the mother of S19: "It has been two weeks since he put in the HAs and we are seeing a big difference in him." The importance of the family as a source of support was reported to significantly help the process ("If I don't dedicate myself to it, who will do it?"), as well as guidance from professionals ("I really like the way you work, I don't want to leave here"). The group's experience was also a facilitator in adherence to treatment ("The group helped me a lot, especially to see that I wasn't the only one.")

The patients ranged in age from 4 to 33 months. Five families attended 50% of the meetings. Three subjects had a use rate of at least 50%. It was not possible to measure the use rate of S16, as the patient did not attend the meetings. The composition of Group 4 seems to have encouraged adherence to the rehabilitation process and empathy among the parents. The similarity of the SII 65 dB may have facilitated the formation of partnerships and identification among families. The classification of the effectiveness of adherence to rehabilitation varied between Category 1 (two subjects) and Category 2 (three subjects). S11 did not understand/adhere to the process of auditory rehabilitation, which we related to the mother's difficulties in understanding/adhering to the other commitments and demands that the patient presented.

Group 5

Group 5 included six families. Three patients were female and three were male. Three had other impairments associated with hearing loss. The corrected age and the SII 65 dB varied greatly among subjects. In this group, three of the six subjects had a good audibility for speech sounds; their SII 65 dB was > 65%. Four of the participants attended at least 75% of the sessions and participated in the activities.

Chart VII. Characterization of Group 5 subjects

Subject	SII 65 dB (%)	Age (in months)	Other commitments	Presence in ADAPTI (%)	Consistency of use in% - Final	Classification effectiveness in adhesion
S20	42	31	Yes	12,5	29,1	2
S21	23	25	No	75	63,6	1
S22	13	6	No	87,5	33,3	3
S23	67	13	Yes	87,5	52,0	1
S24	69	2	Yes	75	78,8	1
S25	27	27	No	37,5	45,4	3

Of the four activities proposed, the trigger in this group was culture. The parents became involved, bringing important information, memories of their childhoods ("In my mother's house, we had a full house all weekend"), who they were ("My mother always taught me what I cannot give you today. I am not going to give it to anyone; that is how I learned to divide"), and what they wanted to pass on to their children ("It is simple in my book. That is what my parents really taught me: study, never mock anyone, make friends, and learn to be independent. That is what I most want to pass on to S21).

Barriers to the effectiveness of adherence to auditory rehabilitation and the consistency of HA use included the distance from the residence to the service ("Oh, how far this center is!"), transportation difficulties ("Today the drive was very crowded; we barely got here"), difficulty maintaining the HAs in the ear ("This mold isn't in his ear at all"), family problems ("My family is not very accepting"), and other necessary care ("I have to

go to so many doctors; my schedule didn't allow me to come last week.")

Observation of the child's benefit from the electronic device facilitated consistent AASI use: ("Today he arrived talking"), in addition to professional guidance ("The speech therapists were very important for me to better understand the hearing loss.") The group's experiences were also considered a factor in adherence to treatment ("I found the experience of the group to be very good, because I learned a lot from the speech therapists and from the mothers") and as a supporter ("We feel safe and welcomed here; for me, the group was a safe haven").

The chronological age ranged from 2 to 31 months. Four subjects attended at least 75% of the meetings. Three subjects used their HAs at least 50% of the time they were awake. S20 had problems with otitis that required treatment and did not use HAs. The composition of Group 5 seems to have favored adherence to the rehabilitation process and empathy among the parents. The similarities in SII 65 dB, chronological age, and the presence of other impairments associated with hearing loss may have facilitated the formation of partnerships. The classification of the effectiveness of adherence to rehabilitation varied between Category 1 (three families) and Category 2 (one family). S22 and S25 did not understand/adhere to the auditory rehabilitation process. In the case of S22, after the completion of the ADAPTI process, we noticed strong resistance of the mother of S22 to the patient's use of HAs and to placing the patient in the CI process. We believe there is a need to reassess the case, since the patient was extremely premature and may have made it difficult for the mother to understand/adhere to the auditory rehabilitation process and accept the results of profound hearing loss.

Discussion

Work with the family is one of the most important factors for child development. It is more fundamental for infants and babies, as observed in the present study. This was accomplished in the initial stage, after the adaptation and verification of the electronic device[11].

Groups were formed through spontaneous demand for the service after HA adaptation. The number of participants, chronological age, SII 65 dB, type and degree of hearing loss, and laterality of loss were not criteria used to establish the group's composition.

In several dynamics, we observed that different prognoses interfered with orientation, and depended on the characteristics of each child. This interference often generated disinterest in parents with different demands, as observed in Group 3. Group heterogeneity often interfered with group dynamics, and it should be considered when creating other GrAFs. Silveira[15] considered patients with similar illnesses to be a homogeneous group. The demands for adaptation of the bone vibrator in the case of malformations are very particular and could not be shared by the mother of S13. The same was true for children with unilateral hearing loss. Normal hearing in one ear completely changes the need for the HA to remain in place, even though the difficulties for that ear are the same as those faced by mothers of children with bilateral loss. We believe that more homogenous groups could result in greater empathy through shared difficulties and achievements, facilitating group dynamics and, consequently, a greater probability of effective adherence to auditory rehabilitation.

The proposed[14] activities at each meeting served as triggers for discussions that provided opportunities to share expectations of hearing loss and associated commitments, family traditions, and child development. For example, during the collage activity in Group 5, the father of S21 said: "It's simple in my book. That is what my parents really taught me: study, never mock anyone, make friends, and learn to be independent. That' is what I most want to pass on to S21". This statement corroborates information in the literature suggested by Novaes[12] regarding the proposal of activities to instill cultural values that guide education and life perspectives. In this context, by educating family members to the importance of HA use, the subjects' hearing abilities and speech therapy gained a context that facilitated the assimilation of this information. As reported by Couto[16], the family's awareness of the importance of seeking the referenced service should be more strongly emphasized.

The GrAF was considered by participating parents and caregivers to facilitate education about hearing impairment and the stages of auditory rehabilitation, as the GrAF representatives were able to address their concerns; provide additional information about the electronic devices, special schools, and LIBRAS; and introduce them to other

families with the same problems and concerns[15]. In more homogenous groups, such as Group 1, one parent stated, "Coming here and talking to the group opened my mind. I can say that I'm more secure in what I want". In addition, the orientation provided by the professionals who treated the children was considered of paramount importance by the family members who participated in the GrAF, as reflected in the statement by the mother of S23: "Even the speech therapists that work here were very important for me to better understand my daughter's loss". This statement reflects what the literature shows. Oliveira[17] reports that establishing a link between the therapist and the patient provides a greater partnership in the work performed.

The chronological age varied among the study subjects. This may be related to the low adherence to auditory rehabilitation, as there was a high diversity in several factors among the participants of the groups. The cases considered to be extreme tended not to adhere to the rehabilitation process because they did not identify with the other subjects and had difficulties forming partnerships, as described by Silveira[15]. In addition, the guidelines for each age group were different, as was the development of each child. Consider S8, a participant in Group 2, who had a corrected age of 4 months and an SII 65 dB of 48%, despite having attended 100% of the proposed services. R., the mother of S8, seldom talked or participated in the proposed activities.

The number of group members varied among groups. When we related group number to attendance and participation, we observed that members of the largest groups attended more frequently. Consider Groups 2 and 4. Group 2 consisted of four participants, and three attended at least 50% of the meetings. Group 4 consisted of six families, and five attended at least 50% of the meetings. This fact corroborates information in the literature; Backes[18] reported that the number of participants should be between six and fifteen, and it was easier for each participant to achieve a depth of expression in a small group.

Orientation for the family in this first stage is of paramount importance, as reported by Rabelo[19]. The orientation of family members should address themes that are essential for the development of language, hearing, use and maintenance of electronic devices, educational approaches, issues related to schooling, and other issues that vary by family. This is particularly important when considering misunderstandings by the mother, as was the case of S5's mother, who stated "I think the device is the cure". It is important for family members to consider the HA as an essential part of the auditory rehabilitation process, but it is only a part. Some patients (such as S5) require a referral for the CI process because hearing aids do not enable audibility. The verification of the guidelines and what the family members understood was of paramount importance in this process.

The distance from the home to the service represented a barrier to adherence to auditory rehabilitation. This fact was reflected in statements by the parents, such as "Thank God she came to help me, because it is very difficult to get here." Turati[20] reported that the logistics of travel with a baby for treatment, the lack of financial resources, busy schedules, problems with layoffs, and other family members are factors that inhibit systematic participation.

The consistency of HA use varied greatly among the study subjects. This was not related to the SII 65 dB, as subjects with worse hearing used HAs well. This observation corroborates the existing literature. Novaes[21] reported that family satisfaction with child development and the consistency of HA use were not related to the results of the auditory or language skills scales. The consistency of HA use seems to be a multifactorial variable that does not necessarily represent non-adherence to auditory rehabilitation.

Family members reported some difficulties maintaining placement of the hearing aid in the child's ear, and problems with the mold were prevalent. For younger children, the molds required more frequent changing because children at that age grow more quickly. The microphone became too small, which made it impossible for the patient to keep the hearing aid in the ear. This information corroborates the existing literature; Martinez and Novaes[22] reported that these changes are frequent in the first months of the child's life due to growth of the auditory canal, and in children with greater losses due to the microphone.

School attendance did not seem to interfere with the consistency of HA use, as there was variation in daily use regardless of school attendance. For small children, the adherence of the teachers and caregivers of the school or day care center was a determinant in the consistency of use. In this study, there also seems to have been indi-

vidual variation. This information contradicts the existing literature. Costa[13] reported that children < 12 months of age did not use their devices in day care centers, but did with their caregivers/family members. Children > 12 months of age used the devices significantly more frequently in day care and much less with caregivers.

Other impairments associated with hearing loss also appeared to interfere with the consistent use of hearing aids. The low adherence to the use of electronic devices can be justified by the difficulty in maintaining the hearing aids in the subject's ears.

The results indicated that there were differences in SII 65 dB among the groups. Among the subjects classified as Category 3, four of the five had an SII 65 dB of ≤ 35%. This suggests that children with greater losses and, consequently, less audibility of speech sounds even with the use of hearing aids, had decreased adherence to auditory rehabilitation. This information corroborates the findings of Moeller et al.[23], who sought to identify factors that affected the consistent use of HAs in children. He concluded that there was great variability in the understanding of the systematic use of electronic devices, with implications for language development, especially in cases of decreased audibility.

Conclusions

The impact of audiological diagnosis, the guarantee of a patient's access to health care centers, the importance of consistency in the use of hearing aids, and the way the GrAF influenced the effectiveness of hearing rehabilitation adherence were the focus of the conclusions of this study.

Formation and dynamics of the family membership groups:

Groups that were more homogenous by age, type, and degree of hearing loss, SII 65 dB, and other impairments resulted in greater empathy among the participants when sharing difficulties and achievements. The increased empathy resulted in a greater probability of effective adherence to auditory rehabilitation.

The activities proposed in the GrAF led to discussions that favored the identification of family demands and guidance regarding the importance of hearing aids, hearing skills of the subjects, and speech therapy, suggesting that the activities promoted adherence to treatment.

The GrAF was considered to facilitate this process by the parents and guardians who participated, as they were able to state their concerns; learn more about electronic devices, special schools, and LIBRAS; and to interact with other families experiencing the same problems and concerns.

The distance between home and the service was a barrier to adherence, indicating that the distance from the service can be difficult even for families willing to participate in the process.

The consistency of HA use seems to be a multifactorial variable that does not necessarily represent non-adherence

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