



# THE IMPACT OF SONGWRITING ON THE QUALITY OF LIFE OF ADULTS WITH INTELLECTUAL DISABILITIES

# Impacto del songwriting en la calidad de vida de personas adultas con discapacidad intelectual

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# ABSTRACT

**Background.** The applications of music therapy have been studied in people with special educational needs. However, there is a lack of studies that use songwriting techniques to improve interpersonal relationships and routine tasks in people with intellectual disabilities in sheltered housing. **Participants.** Five adults with intellectual disabilities, aged 28 to 47 years (M 34.6; SD = 8.76), 40% women, participated with informed consent signed by their legal guardians. **Methodology.** Sixteen music therapy sessions were held twice a week, 60 minutes each, using songwriting techniques with a humanistic approach. The Wilcoxon test was used to measure pre- and post-test differences, and a one-factor ANOVA with repeated measures was used to analyze significant differences between different variables. **Results.** Wilcoxon's test showed post values (Mdn = 4) higher than the pre values (Mdn = 3) but without statistical significance (p = .32). The one-factor ANOVA revealed significant differences between variables, benefiting young people more (F= 73.6, p< .001;  $\eta$ 2p= 0.95). There were no significant differences by sex or interaction between sex and age (p= .50 and p= .38, respectively). **Conclusions.** Songwriting techniques did not show substantial differences in pre-and post-test measures, but they did improve certain variables, especially in the youngest. No significant differences were found by sex, indicating that the benefits of music therapy depend more on age than gender.

Keywords: music therapy, intellectual disability, songwriting, routine tasks, interpersonal relationships.

# RESUMEN

**Antecedentes.** Las aplicaciones de la musicoterapia han sido estudiadas en personas con necesidades educativas especiales. Sin embargo, faltan estudios que usen técnicas de *songwriting* para mejorar relaciones interpersonales y tareas rutinarias en personas con discapacidad intelectual en viviendas tuteladas. **Participantes.** Cinco adultos con discapacidad intelectual, edades entre 28 y 47 años (M= 34.6; DT= 8.76), 40% mujeres, participaron con consentimiento informado y firmado por sus tutores legales. **Metodología.** Se realizaron 16 sesiones de musicoterapia, dos veces por semana, de 60 minutos cada una, usando técnicas de songwriting con un enfoque humanista. Se empleó la prueba de Wilcoxon para medir diferencias pre y post test, y un ANOVA de un factor con medidas repetidas para analizar diferencias significativas entre distintas variables. **Resultados.** La prueba de Wilcoxon mostró valores post (Mdn= 4) mayores que los pre (Mdn= 3), pero sin significancia estadística (p= .32). El ANOVA de un factor reveló diferencias significativas entre variables, beneficiando más a los jóvenes (F= 73.6, p< .001;  $\eta$ 2p= 0.95). No hubo diferencias significativas por sexo ni interacción entre sexo y edad (p= .50 y p= .38, respectivamente). **Conclusiones.** Las técnicas de songwriting no mostraron diferencias significativas en medidas pre y post test, pero sí mejoraron ciertas variables, especialmente en los más jóvenes. No se encontraron diferencias significativas por sexo, indicando que los beneficios de la musicoterapia dependen más de la edad que del género.

Palabras clave: musicoterapia, discapacidad intelectual, songwriting, tareas rutinarias, relaciones interpersonales.



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# INTRODUCTION

Although the applications of music therapy have been widely studied (Fernández-Company *et al.*, 2024; Freitas *et al.*, 2022; Nevado-Minaya & Fernández-Company, 2022; Sihvonen et al., 2017), specifically with people with special educational needs (Curatola *et al.*, 2020; Jacob *et al.*, 2021; Majul-Villarreal & Fernández-Company, 2020), as far as we know, no studies have been carried out through music therapy interventions based on songwriting techniques aimed at improving interpersonal relationships and routine tasks of people with intellectual disabilities living in a sheltered home.

People with intellectual disabilities may have difficulties in autonomy, problem-solving, and social interaction with others (Hagilassis & Di Marco, 2015). Therefore, it is necessary to generate and manage the necessary support for people with disabilities to develop their quality of life in all its dimensions: emotional well-being, interpersonal relationships, material well-being, physical well-being, personal development, self-determination, social Inclusion and rights (Schalock & Verdugo, 2007).

From this point of view, quality of life increases when people are empowered to participate in decisions that affect their lives and when there is full acceptance and integration into the community.

Full Inclusion (2022) proposes deinstitutionalization as a process to change from the model of institutions to support the community through the provision of support and services that respect their rights and preferences. The aim is to guarantee the right of people with disabilities to choose how they want to live their lives.

In this sense, home music therapy interventions have been explored with the aim of improving this quality. A recent study investigated how a music therapy intervention positively influences relationship quality in couples with dementia. Despite not finding a statistically significant effect in the quantitative analysis, it was observed that the quality of the relationship remained stable during the intervention period.

In addition, this research revealed that music therapy generated positive emotions, closeness, intimacy, and better communication between participants, although it could also elicit negative emotional responses (Stedje *et al.*, 2023). From this perspective, music is widely considered a highly effective stimulus for evoking emotions (García-Rodríguez *et al.*, 2021; 2023).

On the other hand, music therapy has been shown to be beneficial for people with intellectual disabilities. A recent systematic review found that this therapy is effective for diagnostic and therapeutic purposes and for improving parent-child interaction (Applewhite *et al.*, 2022).

In addition, another study concluded that musical interventions in young people with intellectual disabilities facilitate the development of functional skills and promote social participation (Després *et al.*, 2024). However, the need to focus more on aspects such as self-determination and creativity, which can encourage greater involvement of young people in these activities, is highlighted.

Music therapy has also proven to be a valuable tool in the field of developmental disorders. Research in special education classrooms showed improvements in the verbal responsiveness of children with autism and intellectual disability (Mendelson et *al.*, 2016). Likewise, another study examined the effectiveness of group music therapy in improving social skills in children with autism, finding improvements in joint attention and eye contact (LaGasse, 2014).

In the educational field, music therapy interventions in inclusive environments have been shown to be effective in improving social skills. A review of studies highlighted the need to expand research in this field and to develop teaching strategies that promote the Inclusion of students with and without disabilities (Jellison & Draper, 2015). In addition, a study based on action research methods managed to improve the interaction between students with severe disabilities and their peers through musical activities (Draper *et al.*, 2019).

Social connectivity and music therapy have also been explored in young people with disabilities. Some studies have pointed to a lack of collaboration and the use of outdated models in the existing literature. However, community music therapy programs have shown significant benefits in understanding and mutual support among young people in adverse situations (Murphy & McFerran, 2017; McFerran & Hunt, 2022).

In this sense, the importance of designing activities that promote the Inclusion of these young people in the university community and other social environments has been highlighted (Rickson & Warren, 2018).

Music therapy in school counselling is emerging as a significant practice. A recently developed protocol emphasizes the importance of collaborative relationships and ecological assessment, showing that musical activities can improve the relationships and development of students with disabilities (Rickson, 2010).

This approach not only highlights students' strengths but also motivates and energizes members of the educational team, allowing them to continue using musical strategies after the music therapist's intervention.



Finally, other studies have explored the application of music therapy in various contexts, such as medical and educational settings. Recent research in a residence for people with disabilities showed that music therapy significantly improves participants' quality of life by improving their emotional expression and social interaction (Tezza, 2023). This study highlights the importance of creating environments that promote the self-determination and active participation of persons with disabilities, moving away from traditional institutional practices.

In summary, music therapy emerges as a powerful and versatile tool that can improve the quality of life for diverse populations, from couples with dementia to young people with intellectual disabilities and children with developmental disorders.

Research continues to demonstrate its benefits in multiple areas, although it also underlines the need to continue exploring and expanding its application to maximize its positive impact.

# MATERIALS AND METHOD

# **Participants**

Five adults with intellectual disabilities aged between 28 and 47 participated in the study, with prior informed consent signed by the participants' legal guardians (M 34.6; SD = 8.76), of which 40% (2) were women.

The group has been made up of people with intellectual disabilities: three with Down syndrome (one of them with autistic symptoms), one person with Angelman syndrome and another with Cornelia de Lange syndrome.

Participation in this study has been disinterested, anonymous and voluntary on the part of the intervening persons. The sample used in our research is intentional since the subjects were not chosen following the laws of chance but in some way intentionally (Orús & Conte, 2010).

# Incentives and measures

Stimuli. The project was developed using carefully selected sound-musical stimuli to enhance the motivation and active participation of the beneficiaries. In line with the recommendations of Mateos-Hernández (2004), musical stimuli were designed to be attractive and safe, avoiding any material that could pose a physical risk.

The instruments used included both natural resources, including the human body, which was used as a sound tool through body percussion and voice, and conventional

instruments, including the piano, guitar, and flute.

Percussion instruments with determined and indeterminate pitches were also used, including boomwhackers, bass drums, bells, maracas, tambourines and xylophones.

The musical environment played a crucial role, supported by technological tools such as a laptop with the programs "ProTools" and "Kontakt", which facilitated the recording, editing and choice of musical styles.

These tools allowed participants to experiment with different genres, such as classical, pop, rock, jazz, country, electronica, and reggae, before collectively deciding on the styles of the songs created. In addition, 5 cm size pictograms were used to represent keywords related to the beneficiaries' daily routines, thus facilitating understanding and inclusive participation in the creative process.

Measurement. The study used a combination of quantitative and qualitative measures to assess the impact of musical interventions on beneficiaries. Questionnaires designed specifically for each of the songs created during the project, "Un nuevo amanecer" and "Cepilla, cepilla", were used. Both questionnaires were applied before and after the intervention, allowing an initial and a final evaluation to be carried out to observe the changes produced.

The quantitative measures included closed-ended questions with Likert-type scales that assessed aspects such as mood, perception of energy level, and characteristics of behaviour related to the specific routines associated with each song.

These scales facilitated statistical analysis of the data and provided insight into overall trends and patterns among participants. For example, in the case of the song "Un Nuevo Amanecer," responses were analyzed in terms of changes in mood and perceived difficulty in waking up. In contrast, for "Brush, brush," variables related to time spent brushing, quality of brushing, and perceived comfort level during this activity were included.

To enrich the analysis and gain a deeper understanding, open-ended questions were included in the questionnaires, where beneficiaries and caregivers could express their perceptions, experiences, and suggestions related to the interventions. These qualitative responses provided a broader context to the quantitative results and allowed the identification of subjective and emotional aspects of the songs' impact.

# Procedure

During the project's development, 16 group music therapy sessions were carried out. These sessions took place twice a



week between April 8 and May 30, 2024 and were developed following the seven-phase intervention model designed by Mateos-Hernández (2004). The participatory methodology applied favoured the beneficiaries' active participation in all the activities. The sessions began with a dynamic introduction and progressed to improvisation exercises, music-making, and group relationship activities through music.

A key aspect was the collective composition of two songs, "Un Nuevo Amanecer" and "Cepilla, cepilla," specifically designed to support the participants' daily routines. Before the composition, the objective of the project was explained to the beneficiaries and through pictograms, they were facilitated to select words related to their experiences.

The words chosen by the group reflected significant aspects of their daily activities, such as "sun," "tooth," "wash," and "smile." From these words, the lyrics and melodies were created in a collaborative process, with participants also selecting the musical styles that best represented each song: reggae for "Un nuevo amanecer" and rock for "Cepilla, cepilla."

Subsequently, the songs were integrated into the daily routines of the residents of the sheltered housing, focusing on two activities that required special attention as agreed with the centre coordinator: the reduction of the time needed to get up and out of bed, especially in the case of a particular resident, and the improvement in the times spent brushing teeth by all beneficiaries. These songs were used as sound support to guide and structure the activities, promoting a positive and motivating environment that would facilitate the learning of new habits and reinforce existing routines.

The impact of these interventions was evaluated by monitoring the times required to complete the selected activities and comparing the results obtained with the initial records. This analysis not only identified significant improvements in the performance of the tasks but also highlighted the importance of the emotional and creative involvement of the beneficiaries in the process, underlining the therapeutic value of music therapy applied in everyday contexts.

# Data analysis

Regarding the statistical analysis of the data, repeated measures of analysis of variance tests (ANOVA) were applied to assess significant differences before and after the intervention. In the case of "Brush, plan," the one-factor ANOVA focused on differences between dependent variables such as brushing time or level of autonomy.

At the same time, the two-factor ANOVA explored interactions between the aforementioned variables and the sex of the participants. Additionally, the effect size was calculated

using partial square Eta, following Cohen's (1988) criteria, to determine the magnitude of the observed changes.

# RESULTS

To determine if there were significant differences between the pre-and post-test measures, Wilcoxon's nonparametric test was performed for related measures (Table 1). In this case, the Pre group had lower values (Mdn = 3) than the Post group (Mdn = 4). The null hypothesis that the post-variable had a value less than or equal to the pre-variable has been tested using a unilateral t-test for paired samples. The result has not been statistically significant (p= .327), so the null hypothesis is maintained.

# Table I

Wilcoxon Results

	W	z	Р	r
POST - PRE	0	-3.27	I	0.87

# Table 2

Results of variance with a repeating factor of ANOVA tests

	Sum of Type III Squares	df	Medium squares	F	Р	<b>η</b> <sup>2</sup> <sub>P</sub>
Treatment	4862.18	8	607.77	73.6	<.001	0.95
Error	264.27	32	8.26			

As can be seen in Table 2, an analysis of the variance of a factor with repeated ANOVA measures has shown that there was a significant difference between the variables (F = 73.6, p = <.001). Therefore, the null hypothesis that there are no differences between the dependent variables Age, Time spent brushing PRE, Brushing alone or with help PRE, Brushing alone or with help PRE, Brushing alone or with help POST, Brushing tongue and gums PRE, Time spent brushing PRE, Brushing alone or with help POST, Brushing tongue and gums POST and Assuming an uncomfortable moment POST, is rejected, with younger people mainly benefiting from the music therapy programme. The effect size was calculated using the Eta partial square:  $\eta 2p$ = 0.95. For Cohen (1988), the limits for effect size are 0.01 (small effect), 0.06 (medium effect), and 0.14 (large effect).

However, Table 3 shows the results of the two-factor analysis of variance with repeated ANOVA measures, showing that there was no significant difference between the groups of the



second-factor Sex in relation to the dependent variable, p= .502 and that there was no interaction between the two variables Sex and Age, Time spent brushing PRE, Brushing alone or with PRE help, Brushing tongue and gums PRE, Time spent brushing POST, Brushing alone or with help POST, Brushing tongue and gums POST and Assuming an uncomfortable moment POST in relation to the dependent variable, p= .387. As can be seen in Table 2, an analysis of the variance of a factor with repeated ANOVA measures has shown that there was a significant difference between the variables (F = 73.6, p = <.001). Therefore, the null hypothesis that there are no differences between the dependent variables Age, Time spent brushing PRE, Brushing alone or with help PRE, Brushing tongue and gums PRE, Time spent brushing PRE, Brushing alone or with help POST, Brushing tongue and gums POST and Assuming an uncomfortable moment POST, is rejected, with younger people mainly benefiting from the music therapy programme. The effect size was calculated using the Eta partial square:  $\eta_{2p} = 0.95$ . For Cohen (1988), the limits for effect size are 0.01 (small effect), 0.06 (medium effect), and 0.14 (large effect).

# Tabla 3

Two-Factor Variance Results with ANOVA Repeated Measures

	Sum of Type III Squares	df	Medium squares	F	Р	η²	<b>ղ</b> ² <sub>թ</sub>
Gender	9.26	Ι	9.26	0.58	.502	0	0.16
RM factor x gender	71.67	8	8.96	1.12	.387	0.01	0.27
Residuals (between subjets)	48.07	3	16.02				
Residuals (within subjets)	192.59	24	8.02				

# Discussion

The quality of interpersonal relationships is critical to the well-being and quality of life of people with special needs. In this context, music therapy has emerged as an effective intervention in various areas. This study investigated the effects of songwriting on the development of routine tasks of users of sheltered housing, and the findings obtained align with the arguments presented in the article's introduction.

First, a noticeable positive emotional impact was observed among the participants. The creation and application of songs

through songwriting promoted positive emotional reactions throughout the process. The participants experienced pleasant emotions not only when composing the songs but also when performing and listening to them. This finding reinforces the idea that music therapy can improve emotional well-being, as mentioned in previous studies that pointed to the generation of positive emotions, closeness and intimacy in people living together (Stedje *et al.*, 2023).

In addition, the atmosphere created during the songwriting sessions allowed participants to express themselves and relate to each other with greater sincerity and integrity. Improvement in communication, even among those with communication difficulties, is a result that coincides with the findings of Applewhite *et al.* (2022), who found that music therapy improves the interaction between parents and children, in our case with professionals, and Després *et al.* (2024), who concluded that musical interventions facilitate the social participation of young people with intellectual disabilities.

Our study also highlighted personal development and creativity. Specifically, Després *et al.* (2024) underlined the importance of fostering self-determination and creativity to increase young people's involvement in music therapy activities. In our case, the participants actively explored the instruments, which contributed significantly to the development of their creative and functional capacities. This result reinforces the idea that music therapy not only improves pre-existing skills but can also boost the personal development and creativity of people with disabilities.

In addition, research in the field of developmental disorders, such as autism, has indicated that music therapy can influence both the improvement of social skills and the ability to respond verbally (Mendelson *et al.*, 2016; LaGasse, 2014). Although our study did not find a statistically significant impact in all areas assessed, qualitative analysis revealed improvements in participants' willingness to cope with their daily routines, such as brushing their teeth. The analysis of variance (ANOVA) indicated significant differences in brushing practices before and after the intervention, suggesting that music therapy can positively influence routine and functional tasks in people with disabilities living together.

Similarly, personalizing music therapy interventions to the specific needs of the beneficiaries was crucial to their success. The users' selection of music, rhythms and instruments promoted a greater acceptance of the activity.

We also consider it of utmost importance to include individual preferences in the design of music therapy programs. This personalized approach is in line with the observations of Rickson and Warren (2018), who highlighted the importance of designing activities that promote the inclusion of young people with disabilities in various social settings.



Despite the positive results observed, it is important to recognize the study's limitations. Although valuable qualitative evidence was obtained on the benefits of songwriting in music therapy, the statistical results were not always significant. This could be due to individual variability and the complexity of measuring changes in emotional and relational aspects. Future studies should focus on more robust methodologies to capture these nuances and consider the inclusion of a larger number of participants to increase statistical validity.

However, despite these limitations, the results of this study reinforce the premise that music therapy, and in particular songwriting, can have a positive impact on the quality of life of people with special educational needs. Likewise, the ability to generate positive emotions, improve communication and promote personal development are key aspects that align our findings with the existing literature. However, it is critical to continue exploring and adapting these interventions to optimize their effectiveness and applicability in diverse, inclusive contexts.

In short, the analysis of variance of one factor with repeated measures (ANOVA) revealed significant differences between the various dependent variables related to tooth brushing. This indicates that the different measures taken before and after the music therapy program, as well as the brushing conditions (e.g., brushing alone or with assistance, tongue and gum brushing, etc.), present significant variations.

This conclusion suggests that toothbrushing practices and experiences vary considerably among the different conditions studied. Since significant differences were found between the dependent variables, the null hypothesis, which proposed that there were no differences between these variables, was rejected. This result confirms that the music therapy program significantly influences toothbrushing practices and experiences. Likewise, the effect size, calculated using partial square Eta, was very large, significantly higher than the limits for large effects. This indicates that the differences observed between the dependent variables are not significant enough but also of great magnitude. This reinforces the relevance of the differences found and their practical importance.

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