

## Research Paper

# Effects of Cognitive-Behavioral Therapy on Pain Intensity and Stress Coping Styles in Patients With Gastric Wound



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## ABSTRACT

**Background and Aim** Patients with the symptoms of gastrointestinal diseases and ulcers constitute a large number of patients referring to general and internal clinics. Furthermore, preliminary studies on gastric ulcers highlighted the role of psychological factors in the development of a susceptible gastric ulcer. The current study aimed to determine the effects of Cognitive-Behavioral Therapy (CBT) on pain intensity and stress coping styles in patients with gastric ulcers.

**Methods & Materials** This was an experimental study with a pretest-posttest-follow-up and a control group design. The statistical population included all patients with a gastric ulcer who were referred to public health centers in Tehran City, Iran, in the winter of 2018. Among the volunteers participating in the study, 30 patients with gastric ulcers were selected by the convenience sampling method. Next, they were randomly assigned to the experimental and control groups (n=15/group). Measurement tools included the McGill Pain Questionnaire (MPQ) and the Coping Inventory for Stressful Situations (CISS; Endler & Parker, 1990). The experimental group subjects participated in eight 90-minute sessions of CBT. However, the controls received no psychological treatment in this period. For data analysis, repeated-measures Analysis of Variance (ANOVA) and post-hoc tests were applied.

**Ethical Considerations** This study was approved by the Research Ethics Committee of the Islamic Azad University, Karaj Branch (Code: IR.IAU.K.REC.1397.85).

**Results** The present research results signified that CBT improved problem-oriented coping styles ( $P < 0.01$ ) and decreased emotion-focused coping styles ( $P < 0.01$ ) and avoidance ( $P < 0.01$ ) in the test group. Besides, the mean scores of pain intensity decreased in the experimental group, compared to the controls ( $P < 0.01$ ).

**Conclusion** The provided CBT was effective on pain intensity and stress coping styles in patients with gastric ulcers.

## Extended Abstract

### 1. Introduction

**P**honological awareness skills, as an essential component of phonological processes [1], are a strong predictor of success in

children's acquisition of reading and writing skills [2, 3]. There exists a high prevalence of hearing loss in children. Besides, phonological awareness skills play predictive roles in children's writing and reading success. The awareness of various aspects of language and speech development, including the development of phonological awareness skills, is crucial. Thus, understanding the phonological character-

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**Table 1.** Comparing the Mean±SD scores of phonological awareness test in the study healthy and CI groups aged 4 years to 4 years and 11 months

Subtests	Mean±SD		P*
	CI Group (n=12)	Healthy Group (n=12)	
Syntactic fragmentation	1.2±3.2	9.1±0.7	0.000
Recognize homogeneity	2.2± 1.4	8.1± 6.7	0.000
Rhyme detection	1.2± 1.9	8.2±7.05	0.000
Phonological composition	2.2±5.06	6.1±5.7	0.000

\*Mann–Whitney U test,  $P<0.05$ .


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istics of Cochlear-Implanted (CI) children seems to be an essential prerequisite for designing an early and appropriate intervention for them. Besides, considering the effects of language or culture on phonological awareness is important [22, 23]. However, relevant research in Iran is restricted to children aged >5 years [5, 17, 21]; while the development of these skills initiates at the age of 3 years. Accordingly, the present study examined phonological awareness skills in CI and healthy 4- to 6-year-olds.

## 2. Materials and Methods

The study participants included 25 children with cochlear implants and 25 healthy monolingual children (Persian) in the age range of 4-6 years. CI children were selected by convenience sampling method from Naghmeh Rehabilitation Center in Mashhad City, Iran. Moreover, healthy children were selected from kindergartens in Mashhad City, Iran. The parents of children who met the inclusion criteria of the study were explained about the research procedures; if they consented, their child would have entered the research after providing the informed consent form.

To evaluate phonological awareness skills, the Persian Phonological Awareness Test (PPAT; Soleimani et al., 2010) was used [18]. This test consists of 10 subtests that measure 3 essential basic skills of phonological awareness, including knowledge of rhyme, phonological awareness, and knowledge of syllable units.

The PPAT individually was performed on each research subject in a quiet room by a speech and language pathologist. Then, the mean scores of each subtest in the two groups of healthy and CI children were calculated. The relevant data were compared in SPSS by Mann–Whitney U test at the significance level of 0.05.

## 3. Results

In this study, the phonological awareness skills of 50 Persian-speaking children were assessed. The study participants included 25 CI children (13 boys & 12 girls) with a Mean±SD age of 59.28±6.51 months and 25 normal-hearing children (13 boys & 12 girls) with a Mean±SD age of 56.7±42.65 months. Considering that special subtests were applicable per child in the age group of 4 to 4.11 and 5 to 5.11 years, the results of the studies performed in these two groups are expressed separately.

Comparing the scores obtained by the study groups in the age range of 4 years to 4 years and 11 months indicated that the mean scores of healthy subjects were significantly higher, compared to their CI counterparts in all subtests of syllable segmentation, homogeneity detection, rhyme recognition, and phonological composition ( $P\leq 0.000$ ) (Table 1).

Table 2 presents that in the subjects with the age range of 5 years to 5 years and 11 months, the mean scores of all subtests in the healthy group were significantly higher than that in the CI group ( $P\leq 0.000$ ). Comparison between the performance of 4- and 5-year-old children revealed that the scores of the subtests of homogeneity and phonological recognition in both research groups were higher in the age range of 5 years, compared to the 4-year-olds; however, there was no difference in the rhyme detection subtest.

## 4. Discussion and Conclusion

The present study evaluated phonological awareness skills in CI and healthy children. Persian-speaking 4- to 6-year-old children with implant prostheses surveyed in this study performed significantly poorer in phonological awareness skills, compared to their healthy counterparts.

**Table 2.** Mean and Standard Deviation

Subtests	Mean±SD		p*
	CI Group (n=13)	Healthy Group (n=13)	
Recognize homogeneity	4.2±4.2	9.1±7.03	0.000
Rhyme detection	8.8±2.1	8.1±7.2	0.000
Phonological composition	9.5±4.1	9.1±9.03	0.000
Recognize words with the same initial phoneme	9.6±3.1	9.1±3.03	0.000
Recognize words with the same ending phoneme	7.3±2.1	8.1±8.2	0.000

\*Mann–Whitney U test, P<0.05.

The obtained data were in line with those of previous research concerning phonological awareness skills in CI children; thus, CI children performed poorly in this respect, compared to their healthy peers [3, 4, 16, 17].

The electrical stimuli provided by the cochlear implant prosthesis fails to represent all aspects of speech signals; speech signals are presented to the child as broken spectral signals. Implementing incorrect frequency positions in the auditory system and incomplete neural survival further reduces the quality of the signal provided to CI users [21]. This limitation in CI children can adversely affect the strength and accuracy of phonological representation; thus, impairs the development of phonological skills [18]. Therefore, despite the increasing development of cochlear implant tools and technology and the introduction of surgical intervention and early rehabilitation, CI children encounter difficulties in learning spoken language.

Furthermore, lacking phonological awareness skills, as a link between spoken and written language, is even more damaging than lacking syntactic-morphological and other language skills [24, 25]. Any hearing-loss-associated factors and experiences, speech comprehension, speech production skills, and lexical treasury development might contribute to phonological awareness deficits in even early CI children recipients. Due to the role of phonological awareness in achieving writing and reading skills, special sessions should be allocated in the intervention program for CI children to improve these skills. The provided CBT was effective on pain intensity and stress coping styles in patients with gastric ulcers.

## Ethical Considerations

### Compliance with ethical guidelines

This study was approved by the Research Ethics Committee of the Islamic Azad University, Karaj Branch (Code: IR.IAU.K.REC.1397.85). All ethical principles are considered in this article. The participants were informed about the purpose of the research and its implementation stages. They were also assured about the confidentiality of their information and were free to leave the study whenever they wished, and if desired, the research results would be available to them.

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### Authors' contributions

All authors met the standard writing criteria based on the recommendations of the [International Committee of Medical Journal Publishers \(ICMJP\)](#).

### Conflicts of interest

The authors declared no conflicts of interest.

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