

The Effects of Non-verbal Voice Components of Occupational Therapist on the Respondents's Attitude of Acceptance

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작업치료사의 비언어적인 목소리 구성요소가 대상자의 수용적 태도에 미치는 효과

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Abstract The purpose of this study is to investigate the effect of the nonverbal voice component of the occupational therapist on the respondent's attitude of acceptance. The study method was to randomly selected and provided 4 voice samples which were from the current female occupational therapist and adjusted its pause and tempo to participants who visited the local health center. After providing voices, the participants were asked to complete the survey including the questions about the acceptance attitude according to voice components. The study results showed that there were statistically significant differences in attitudes of "likeability", "credibility", "concentration", "expertise", "comprehension" ($p < .05$). Findings suggested that client's attitude of acceptance may change according to non-verbal voice components of the therapist.

Key Words : Occupational Therapist, Non-verbal, Voice types, Acceptance attitudes, Pause, Tempo

요약 본 연구의 목적은 작업치료사의 비언어적인 목소리 구성요소가 대상자의 수용적 태도에 미치는 효과를 알아보는 것이다. 연구방법은 지역보건지소를 방문하는 주민을 대상으로 현 여성 작업치료사의 목소리를 녹음하여 휴지(pause)와 속도(tempo)를 조절한 총 4개의 목소리 샘플을 무작위로 선정해 들려주었다. 그 후 목소리 구성요소에 따른 수용적 태도를 알아보기 위한 설문지를 작성하였다. 연구 결과 수용적 태도 중 "흥미가 느껴지는지" 항목에서는 어떠한 변수에서도 통계학적으로 유의미한 차이를 확인할 수 없었지만($p > .05$), "전문성이 느껴지는지", "집중이 되는지", "신뢰가 되는지", "이해가 되는지", "호감이 가는지"항목에서는 통계학적으로 유의미한 차이를 확인할 수 있었다($p < .05$). 연구 결과를 통해 치료사의 비언어적인 목소리의 구성요소에 따라 수용적 태도가 변화할 수 있음을 시사하고 있다.

주제어 : 작업치료사, 비언어적, 목소리의 종류, 수용적 태도, 휴지, 속도

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1. Introduction

The voice has the greatest influence in the order of voice 38%, facial expression 35%, attitude 20%, contents 7% in communication[1]. Voices are a fundamental means to communication and are an important factor in determining the impression or image[2]. And, people want to have a professional and friendly voice. When we talk other people, some people speak more understandable and interesting than others, while others make difficult to understand and cause unpleasant feelings. Human voice had some voice components which are the timbre, pitch, pause, volume, and tempo. These components have a strong influence upon attitudes of respondents while talking to person[3]. The voice is defined as the vibration of the vocal cords being amplified and the voice is made through the respiratory, vocal, resonance, and articulator organ [4]. Voices are the most crucial tool for expressing oneself and conveying information and feelings to others[5,6]. The previous voice-related research demonstrated that people's voices can be trained in good voices, and good voice definition is not a burden and favorable voice to hear[7]. The voice is also a highly effective communication tool to express emotion. Good communication skills are an important component of medical staffs. It is known to affect the quantity and quality of information obtained from patients, reduce patient anxiety, and positively affect treatment adherence and outcome[8,9]. Rehabilitation therapists play an important role in the rehabilitation of persons with impaired physical, mental and developmental processes[10]. The therapists works to improve the patient's health by choosing the properly occupation, maximize the residual ability[11]. Therapists use a variety of assessment methods to gather meaningful information from patients. Examples include the naturalistic observation, interview, and task

performance, and self-report[12]. Therapists should use conversations, gestures, facial expressions, eye contact to provide an optimized therapeutic relationship[13]. However, lack of prior researches on evidences relate to the voice of the therapists. Therefore, the purpose of this study is to investigate the effect of therapist's voice component on acceptance attitude of the respondents.

2. Methods

2.1 participants

This study was conducted to investigate the acceptance attitudes of respondents in the voice of the therapist. They are general adults who have been visiting the local health center in J city. The mean age was 57.9 ± 15.1 years old and consisted of 58 females and 41 males. All participants were recruited unspecified individuals in public health center. The purpose and procedures of this study were explained to all participants, and each signed a consent form, in accordance with the ethical principles of the Declaration of Helsinki. We use the headphone to minimize disturbance of the noise. The survey was conducted by one research director to raise the reliability of the questionnaire.

2.2 Instruments

2.2.1 Four therapist's voice sample

We were produced four voice sample at 'Why not Company' to investigate the effectiveness of voice component on acceptance attitude of the participants.

This was divided into four voice samples with controlled pause and tempo. Table 1. Because pause and tempo were the one of the components that primarily affected respondents' attitude[3,14]. The recorded sentences was select to the 175-syllable in elderly driver's license

consultation manual provided by the Road Traffic Corporation[15].

2.2.2 Acceptance attitude questionnaire

This questionnaire used to investigate the influence of the nonverbal voice component of the therapist on the acceptance attitude of the participants. Before proceeding study, we confirmed in the characteristics of therapists preferred by the patients. And then, we had select "interest", "likeability", "credibility," "concentration", "expertise", and "comprehension". All criteria scores are divided to "not at all" (1 point) to "very agree" (10 points).

Table. 1. Experimental Condition

	Voice Sample Condition
A	Low tempo(LT), Accurate pause(AP)
B	Low tempo(LT), Inaccurate pause(IP)
C	High tempo(HT), Accurate pause(AP)
D	High tempo(HT), Inaccurate pause(IP)

Note. Low = 400syllable/min; High = 300syllable/min; Accurate = 0.9sec; Inaccurate = 0.4sec

2.3 Research design

The research process was explained to the participants who agreed to participate in this study. The purpose and procedures of this study were explained to all participants, and each signed a consent form. At the time of the questionnaire, participants were asked to focus on the feeling of the voice itself, regardless of the content of the text. We also randomly selected four speech samples to reduce unnecessary impact in the study process. Realtek High Definition Audio was set to 30%, and after verifying the suitable volume for listening. After that, four randomly selected voice samples were presented. We had a one minute break before telling the first sample and the second sample.

2.4 Data analysis

The questionnaire data were analyzed by statistics to identify effectiveness the of the non – verbal voice components about acceptance attitude. Repeated measures analysis of variance(Repeated measure ANOVA) was used to compare the acceptance attitudes of four voice samples (A, B, C, and D), which modulated the components of the voices. For significant main effect, Bonferroni's correction was performed to identify the specific mean differences. Statistical analysis was performed with SPSS 24.0 and statistical significance was defined as $p < .05$.

3. Results

This study was to confirm the influences of non – verbal voice components of therapist on the attitude of the respondents. As a result of the study, there was no statistically significant difference in the "interest" ($p=.112$), "Concentration" was a statistically significant difference between the voice sample B and the sample D ($p=.031$), "likeability", "credibility", and "expertise" was a statistically significant difference between the voice sample B and the sample C ($p=.025$, $p=.020$, $p=.020$). Further, "comprehension" was statistically significant difference between the voice sample A and the sample B ($p=.031$), between the sample B and the sample C ($p\leq .001$), and between the speech B and the sample D ($p=.018$). Table 2. The average score of each voice sample shows that the score of the acceptable attitude toward voice sample B is the highest. In other words, it can be seen that the voice with the slow speed and the inaccurate stoppage showed the highest score in all of the 6 acceptance attitude items ("interest", "likeability", "credibility," "concentration", "expertise", and "comprehension").

Table. 2. Acceptance attitude in difference of non-verbal voice components.

	Interest (<i>N</i> = 98)				Likeability (<i>N</i> = 99)			
voice	<i>M</i>	<i>SD</i>	<i>F</i>	<i>p</i>	<i>M</i>	<i>SD</i>	<i>F</i>	<i>p</i>
A	6.50	2.31	2.05	0.112	6.61	2.27	3.01	0.034*
B	6.63	2.23			6.90	2.23		
C	6.11	2.64			6.20	2.65		
D	6.37	2.48			6.60	2.58		
Credibility (<i>N</i> = 99)				Concentration (<i>N</i> = 99)				
voice	<i>M</i>	<i>SD</i>	<i>F</i>	<i>p</i>	<i>M</i>	<i>SD</i>	<i>F</i>	<i>p</i>
A	7.02	2.18	3.22	0.026*	6.96	2.38	3.23	0.026*
B	7.12	2.13			7.17	2.05		
C	6.41	2.49			6.61	2.33		
D	6.67	2.41			6.57	2.45		
Expertise (<i>N</i> = 99)				Comprehension (<i>N</i> = 99)				
voice	<i>M</i>	<i>SD</i>	<i>F</i>	<i>p</i>	<i>M</i>	<i>SD</i>	<i>F</i>	<i>p</i>
A	6.43	2.49	3.78	0.013*	7.38	2.00	6.81	0.000*
B	6.88	2.16			7.78	1.81		
C	6.12	2.56			6.93	2.35		
D	6.30	2.38			7.15	2.33		

Note. LT = Low(300syllable/min) Tempo, HT = High(400syllable/min) Tempo, AP = Accurate(0.9sec) Pause, IP = Inaccurate(0.4sec) Pause
M = Mean, SD= Standard Deviation, *p < .05

4. Discussion

As a result of the study, it was found that the voice sample B (Low tempo, Inaccurate pause) had the highest mean score in the six acceptance attitude items, and all five attitude except "interest" showed a significant difference, the most influential attitude of the participant is the acceptance attitude.

The therapist's communication method is one of the important methods for treating patients. They used the self and the teaching methods for therapeutic purposes, and language is an important mediator in helping these therapeutic processes. Communication processes and spoken language use are particularly important in psychosocial aspect. The therapist's communication process is a general concept for establishing verbal interventions, interview-based assessments, and therapeutic relationships[16].

Although these voices are known to have a significant impact on communication, many

people are not interested in the importance of the elements of voices, nor trained in professional communication. Our study conducted to investigate the effect of therapist's voice component on acceptance attitude of the client, and we have could show to a significant found of therapist's communication skill.

In our result, first, the concentrate is that the voice of low temp / inaccurate pause type was more effective than the voice of high tempo / inaccurate pause type. Second, the expertise, credibility, and likeability are that the voice of low temp / inaccurate pause type was more effective than the voice of high tempo / accurate pause type. Third, the comprehension is that the voice of low temp / inaccurate pause type was more effective than others. In the previous study analyzed study about non-verbal voices component of home shoppers, vocal pause difference had affected the client's interest, but this study did not affect the "interest" [17].

Especially, we could confirm various results depending on the tempo of the voice and the type of pause. Some study demonstrated that the sermon communication ability affect to the difference of the pause to the understanding of the participants[14]. A study by Park (2009)[3] to examine the influence of the characteristics of the voices of telemarketers and show hosts showed that the scores were higher in the speech samples manipulated in the 0.9 seconds pause type. On the other hand, in this study, the score of the speech sample manipulated to 0.4 seconds pause type was higher. This suggests that differences in pause type have affected the outcome, and that regardless of the outcome of each study, the 0.4 seconds pause type of the voice component had been an impact on five items(concentration, expertise, credibility, likeability, and comprehension). In addition, the tempo of the voice was found to have a positive effect on the participants having the voice characteristic of the slow tempo rather than the

voice of the fast tempo[18].

Previous studies showed that the characteristics of the preferred teachers' voices showed that the teachers' voices could directly or indirectly influence learning activities in the class concentration and that the psychiatric nurses could gain the trust of the subjects if they used non-verbal voice components properly. The results are consistent with our findings that therapists in healthcare professions influence to the participants according to their voices[19,20]. Since the medical field is recognized as one of the service areas, it can be regarded as a service industry which mainly contacts with people. Therefore, the communication style of what the service provider talks to the buyer and how to say it is more important than anything else[21]. In addition, linguistic interactions between therapists and patients are used to achieve specific goals and are an indispensable element in therapy[22]. Therapists frequently use communication to deliver professional medical care to patients or to succeed in rehabilitation. Therefore, it represents the clinical significance that it is important to use the horse's speed and resting properly. The limitations of this study are as follows: First, the sample collected for the research study is only for the visitors to the health branch in the specific area. Second, we suggest that additional research is needed on the questionnaire. Future research will lead to better results if we combine qualitative research and evaluation tools with objective data.

5. Conclusion

There is a lack of research on the importance of the nonverbal voice component of the therapist on the participant's receptive attitude. The purpose of this study is to investigate the voices of therapist who are residing in J city and visit community health center in J city. Based on

the non - vocal component of therapist, the results of this study are as follows. As a result, items indicating acceptance attitude were most related to voice with slow speed and inaccurate pausing factor, and there was a significant difference in acceptance attitude excluding 'interest'. This suggests that the participant's acceptance attitude may change according to the components of the non-verbal voice of the therapist. There is a need for further research by introducing objective evaluation tools as well as surveys.

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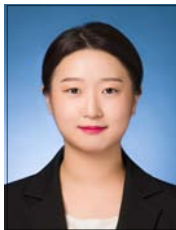
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