



# Effectiveness of Kagayashiki Music Intervention on Depression, Cognition and Basic Activity Daily Living in the Institutionalized Elderly

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## Background

Kagayashiki music intervention has been gradually applied in long term care in Taiwan. Compared to other music therapy, evidence-based researches of Kagayashiki music intervention are fewer.

## Purpose

The research objective of this study was to examine the effects of Kagayashiki music intervention measures on depression, cognition, and basic activity daily living in the institutionalized elderly.

## Methods

With one-group pretest-posttest quasi-experimental design, this study adopted the purposive sampling of selecting the subjects from two elder care institutions in Southern Taiwan, and then random assignment was carried out in the Kagayashiki music intervention group. A total of 36 subjects enrolled in this experimental group. The music intervention group was required to perform 40 minutes once a week for twelve weeks. Demographic sheet, Geriatric Depression Scale (GDS), Mini-Mental Status Examination Scale (MMSE), Basic Activities of Daily Living Scale (BADL) were evaluated before and after the intervention. The analysis was conducted using SPSS version 18.0, and the significance level  $\alpha$  was set at 0.05.

## Results

As presented in Table 1, 31(86.1%) participants came to complete the study, most of whom were female ( $n=25$ ; 80.6%). Average age was 82.3 years. 27 (87.1%) had religion; 23 (74.2%) marital status were widowed; 15 (48.4%) had no formal education; 17 (54.8%) usually attended activities. Most of the participants suffered from chronic disease ( $n=24$ ; 77.4%) and took medicine ( $n=20$ ; 64.5%). The majority of them had no depression ( $n=28$ ; 90.3%). There was significant difference between pre-test GDS and post-test GDS in terms of gender ( $p<.01$ ). Table 2 showed that the mean score of depression decreased from 6.29 in the pretest to 3.10 in the posttest and cognitive function improved from 17.52 to 19.55. The mean score of BADL in the pretest and posttest was 55.48 and 65.48, separately. The pair  $t$  test results indicated that GDS ( $t=-4.20$ ,  $p<.000$ ), MMSE ( $t=2.13$ ,  $p<.05$ ), and BADL ( $t=2.41$ ,  $p<.05$ ) exhibited significant changes.

## Conclusion

The results indicate that Kagayashiki music intervention can improve the depression, cognitive function, and basic activities of daily living in the institutionalized elderly. Therefore, Kagayashiki music intervention can be widely implemented among the institutionalized elders. This intervention can be incorporated into day activity program in order to lower the rate of depression, and thus enhance cognitive function and activities of daily living. It is suggested that randomized researches with larger sample sizes be used for appropriate calculation, measurement after multiple sessions, and physiological and psychological measurement.

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Table 1:

Demographics and Pre-Post GDS of the Study Population (N=31)

Variable	N(%) / M $\pm$ SD	Pre-GDS		Post-GDS	
		M $\pm$ SD	t/F	M $\pm$ SD	t/F
Age	82.32 $\pm$ 7.02				
Gender			t=.57**		t=1.88**
Male	6(19.4)	7.17 $\pm$ 1.94		5.00 $\pm$ 4.90	
Female	25(80.6)	6.08 $\pm$ 4.52		2.64 $\pm$ 2.06	
Religion			t=.53		t=0.62
Yes	27(87.1)	6.44 $\pm$ 4.21		3.22 $\pm$ 2.94	
No	4(12.9)	5.25 $\pm$ 4.03		2.25 $\pm$ 2.63	
Marital Status			F=.10		F=.12
Married	7(22.6)	6.86 $\pm$ 4.88		3.43 $\pm$ 4.08	
Widowed	23(74.2)	6.48 $\pm$ 4.09		3.04 $\pm$ 2.58	
Divorced	1(3.2)	5.00 $\pm$ 0.00		2.00 $\pm$ 0.00	
Education Level			F=.16		F=.17
No Formal Edu.	15(48.4)	6.53 $\pm$ 4.76		3.13 $\pm$ 2.56	
Elementary	10(32.2)	6.40 $\pm$ 3.06		3.40 $\pm$ 4.01	
Junior High	3(9.7)	6.33 $\pm$ 3.21		3.00 $\pm$ 1.73	
Senior High	3(9.7)	4.67 $\pm$ 6.43		2.00 $\pm$ 1.00	
Attend Activities			F=1.16		F=.37
Never	2(6.5)	11.50 $\pm$ 2.12		3.50 $\pm$ 0.71	
Sometimes	4(12.9)	6.25 $\pm$ 5.74		4.25 $\pm$ 5.44	
Usually	17(54.8)	5.88 $\pm$ 3.97		2.65 $\pm$ 2.18	
Always	8(25.8)	5.88 $\pm$ 3.80		3.38 $\pm$ 3.25	
Disease			t=-1.84		t=.05
No	7(22.6)	3.86 $\pm$ 3.13		3.14 $\pm$ 3.08	
Yes	24(77.4)	7.00 $\pm$ 4.18		3.08 $\pm$ 2.89	
Depression			t=-2.20*		t=-.15
No	28(90.3)	5.79 $\pm$ 4.03		3.07 $\pm$ 3.03	
Yes	3(9.7)	11.00 $\pm$ 1.00		3.33 $\pm$ 0.58	
Drug			t=-1.30		t=.51
No	11(35.5)	5.00 $\pm$ 3.38		3.45 $\pm$ 3.17	
Yes	20(64.5)	7.00 $\pm$ 4.42		2.90 $\pm$ 2.77	

PS: \* $p<.05$ ; \*\* $p<.01$ ; \*\*\* $p<.001$

Table 2:

Comparisons Between Pretest and Posttest in Depression, Cognition, BADL on Kagayashiki Music Intervention

Variable	Min	Max	M $\pm$ SD	Pair-t	
				M $\pm$ SD	t
GDS2-GDS1				-3.19 $\pm$ 4.23	-4.20***
GDS2	0	12	3.10 $\pm$ 2.88		
GDS1	0	14	6.29 $\pm$ 4.14		
MMSE2-MMSE1				2.03 $\pm$ 5.32	2.13*
MMSE2	5	28	19.55 $\pm$ 5.68		
MMSE1	6	29	17.52 $\pm$ 6.42		
BADL2-BADL1				10.00 $\pm$ 23.09	2.41**
BADL2	10	95	65.48 $\pm$ 25.05		
BADL1	15	95	55.48 $\pm$ 27.64		

PS: 1. GDS2: Post-GDS; GDS1: PreGDS; MMSE2: Post-MMSE; MMSE1: PreMMSE; BADL2: PostBADL; BADL1: PreBADL;

2. \* $p<.05$ ; \*\* $p<.01$ ; \*\*\* $p<.001$