The Transfer of Expertise in Conducting a Participatory Music Therapy During a Combined Rehabilitation-Recreational Program in an Elderly Care Facility

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Abstract. Not so long ago, in Japan, much emphasis were given to elderly`s basic life`s needs like eating, sleeping, excretion and bathing, however support for other problems of aging like mental and emotional health, muscle tone weakness, and life satisfaction are much left out. Just until recently, new concepts like QOL (Quality of Life) were seriously considered. This signaled the start of not just focusing on giving support on the material needs but also giving equal importance on issues pertaining to mental and emotional health, as well as life satisfaction of the residents in the elderly care facility. Recreation for improvement of mind and body functions of residents, as well as improvement of daily quality of life are now being carried out. Jurisprudence, administrative measures on recreational activities were also created. It has since been a standard for the elderly welfare care facilities of to provide recreational events appropriate to the number of residents. Different kinds of rehabilitation and recreational activities were introduced, one of them is Music Therapy. Activation of the brain, strengthening of the muscles for swallowing, and emotional and mental stability are just few of the most common beneficial effects of the said therapy. In this study, the setting for the music therapy is a paid elderly care facility.

Keywords: Caregiver · Paid elderly facility · Recreation · Participatory music therapy

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1 Research Background

1.1 Introduction

In Japan, music therapy has been introduced not so long ago as a new recreational and rehabilitation therapy. Activation of the brain, strengthening of the muscles for swallowing, and emotional and mental stability are just few of the most common beneficial effects improving the mind and body functions. It as well aim to improve of daily quality of life among the recipients. It has since been a standard for the elderly welfare care facilities of to provide recreational events, and recreation has also been the main in the life support provided by Day Service Institutions.

In a study, (Brotons, et al. 1997) stated that Music therapy is an effective intervention for decreasing behavioral problems of individuals with dementias and for maintaining and improving active involvement, social, emotional and cognitive skills.

The setting of our study is a paid nursing home facility in Japan. Providing music therapy in the said facility has yield positive results, and we have felt the need to expansion of the program to our other facility so that other residents could have access to music therapy. However, offering sustainable service has always been a challenge to currently the short-staffed and notoriously high turn-over rate caregiver work in Japan (Yamamoto 2015). So, in order to cope up and meet the increasing demand for the provision of higher quality nursing service to the residents in the elderly facilities, we believe that researches on transfer of certain nursing skills is indispensable. Many research works are being carried out to improve nursing services, however, studies related to sustainability of operation like research on skills transfer are not given much emphasis. In fact, our query on any research pertaining to transfer of expertise and skills in the nursing field in Japan yield us very limited result. In this particular experiment, we studied how to be able to transfer skills effectively by careful analysis of the technique used while performing.

We begin by analyzing the common techniques employed by expert performer, as characterized by her use of time, decisions and actions while performing a participatory music therapy in a paid nursing facility. We then present some background on music therapy and related work in the field of skills transfer, followed by the description and discussion of our research.

Our study shows that positive development can be achieved if the performance is well-arranged. This study also implies that the point of solving ingeniously while performing is the foundation that results to good performance. Finally, we believe that result of this study can be useful in producing the training video we wish to create. In the discussion section we present the analysis of the results and implications for future improvements.

1.2 Research Trends and Significance of the Study

Music therapy is an effective intervention for decreasing behavioral problems of individuals with dementias and for maintaining and improving active involvement, social, emotional and cognitive skills (Brotons, et al. 1997).

In Japan, in the paper, Effects of Music Therapy for Dementia: A systematic review (Watanabe 2005) suggested that after reviewing researches published within the past 20 years, they have found out that along with the findings of Koger, music therapy is an effective intervention for dementia.

In a separate study, Kuwahara (2001) stated that music has physiological and mental effects on human being. Their work that was conducted in a long term-care health facility, found significance on the activities, whether it is a music therapy or music recreational activity.

However, along with Japan's rapid aging society, experts on different fields are also growing old, remarkably low birth rate poses another challenge in transfer of these expertise to young generations later. Problems in skills transfer is not just being a business entity issue but becoming a Japan national issue as well (Gijutsu•Ginou Denshou no tame no Ginou Bunseki to Manyuaru Kousei no Houhou, Mori 2001).

This study will be a significant endeavor in the transfer of expertise in music therapy. Not only the expert and successor performers would benefit when they employ the learning from the training tool for transfer of expertise that will be created from this study, but if we are able to create more successor performers, it is the end-user of music therapy, who are residents in the paid nursing facility suffering from dementia would greatly benefit from this study. By understanding the important points to consider in order to be able to deliver an effective music therapy, smooth transfer of skills from expert and successor will be assured.

2 Design

2.1 Grounded Theory Methodology

Grounded theory method is a systematic generation of theory from data that contains both inductive and deductive thinking. One goal is to formulate hypotheses based on conceptual ideas. Generally speaking, grounded theory is an approach for looking systematically at (mostly) qualitative data (like transcripts of interviews or protocols of observations) aiming at the generation of theory. Sometimes, grounded theory is seen as a qualitative method, but grounded theory reaches farther: it combines a specific style of research (or a paradigm) with pragmatic theory of action and with some methodological guidelines.

Grounded theory method does not aim for the "truth" but to conceptualize what is going on by using empirical research. In a way, grounded theory method resembles what many researchers do when retrospectively formulating new hypotheses to fit data. However, when applying the grounded theory method, the researcher does not formulate the hypotheses in advance since preconceived hypotheses result in a theory that is ungrounded from the data (Glaser and Strauss 1967).

If the researcher's goal is accurate description, then another method should be chosen since grounded theory is not a descriptive method. Instead it has the goal of generating concepts that explain the way that people resolve their central concerns regardless of time and place. The use of description in a theory generated by the grounded theory method is mainly to illustrate concepts (Wikipedia 2015).

2.2 Subjects and Location of Study

In this study, there were two subjects: An expert music performer, (Female, 54 years old, with a total of 49 years of piano recital experience, 6 years of which is music therapy related, with averaging 2 performances a month) and a successor, (Female, 25 years old, with 19 years piano recital experience. Both subjects were working in the elderly nursing facility. The expert is a care manager with a total of 13 and half years of experience in the field of caregiving, and the successor is a caregiver with 1 year and 10 months experience in caregiving field. See Table 1.

Table 1. Data of the subjects

Subject	Age	No. of times performed music therapy	No. of years of years performing piano recital	No. of years of experience in caring for elderly suffering with dementia
Expert	54	72	49	13.5
Successor	24	2	20	1.8

The setting of our study is a paid nursing home facility in Japan. The facility houses 73 residents, with about 80 percent of them affected by dementia or having dementia symptoms. We have created the music therapy program to address dementia as well as to prevent it's onset on the residents.

2.3 Objective of Analysis

Our objective is to formulate hypotheses based on conceptual ideas presented by the expert performer. This study sought to analyze performance process and map core skill requirements, in order to create manuals for transfer of expertise in music therapy, employing the process analysis sheet format for SAT (Skills Analysis for Training) that was revised by Mori in 2000. Two types of manual will be created. (1) Text type manual in tutorial style for the general description of the performance process and (2) A video manual for the critical highlight parts of the performance process which needs to be carefully analyzed and explained by a fraction of a second. By using both text and video manual, the trainee is expected to have a better grasp of the learning material, and the transfer of expertise will be smoothly carried out.

2.4 Process Analysis Technique

In 2000, Mori, with the result of his studies, he revised the SAT (Skills Analysis for Training) and created manuals on technical skills namely, pencil sharpening, the use of knife, the use of hammer and cooking of the *Atsuyaki Tamago* (thick-sliced egg roll). We have employed identical process analysis technique with some revision on some parts in order to fit our goal and improvised through the addition a new element, the time usage analysis.

Video Recorded Participatory Music Therapy. Video footage of the actual performance served as an important medium that was used in analyzing the performance process, and profiling the core performance requirements. Camera Position. Figure 1 shows that, three video cameras were used, all were set on a tripod. One camera is positioned at the back of the Audience, capturing the entire general setting. This camera also is used for observing the performer in the direct view. The other two video cameras were position to the front left and to the right of the performer, aimed to capture the general movement of the performer, as well as some part of the audience. All of the video cameras were set to wide angle or zoomed-out to be able to capture wide area. The same camera set-up was used for both the expert and the successor performance analysis.

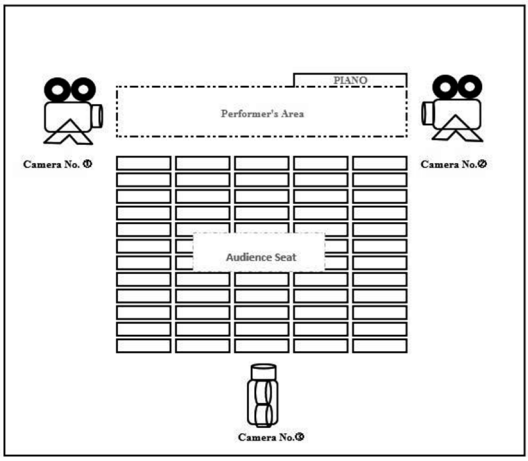

Fig. 1. Camera Position Diagram

Process Analysis I: Interview. To be able to map the core performance requirements and be able to arrange them in the Process Analysis Sheet, interview of the expert and successor were conducted. While watching the video footage of their own performances, the expert and successor were ask questions focusing on analyzing the performance protocol. Data gathered from these interviews were used in mapping the core performance requirements that were reflected in the process analysis sheet (Fig. 2).

Fig. 2. Interview

Process Analysis II: Analysis of usage of time. Attention is a high-priced commodity especially in performances. In this experiment, we tried to analyze the difference in usage of time between the expert and successor. Rendition time of song and exercise as well as time used in between songs (Interval time) were analyzed.

3 Results and Consideration

3.1 Video Recorded Participatory Music Therapy

Figure 3 shows the flowchart we followed starting from video shoot of the actual music therapy until the performance process analysis.

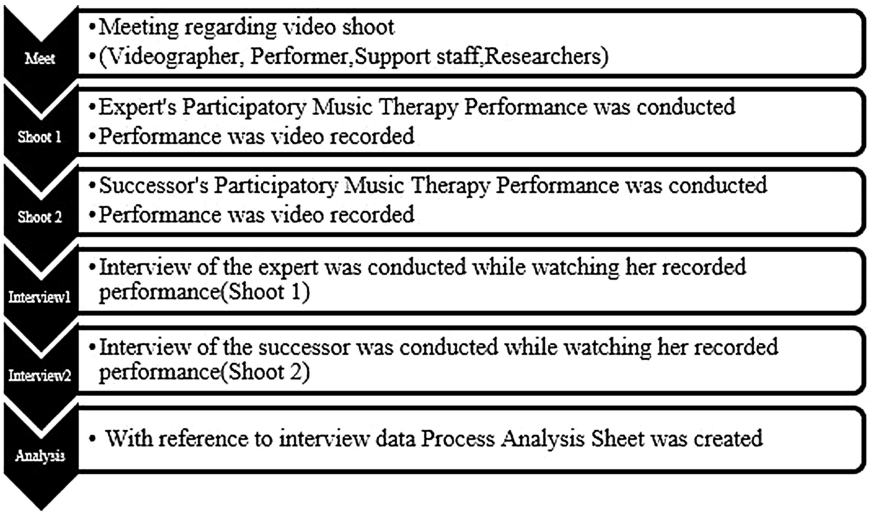

Fig. 3. Performance process analysis flowchart

3.2 Performance Process Analysis I (Interview)

As shown in Table 2, upon careful consideration of the collected data, it is suggested that as a requirement, every performance must have three stages, audience preparation stage, excite stage, and cool-down stages. (Stages were named after the main activity of each individual stage). Interview yield results that cooling down of the audience is proportionally important as preparation of the audience for the activity. It was known that the performer's knowledge of songs familiar to most of the audiences, ability to render songs related to hometown and season were essential components of the performance. Moreover, performer's ability to observe and make changes in tempo,

Table 2. Result of process analysis based on interview

Process	Main activity	Element /detailed action	Judgment standard	Core principle
Audience preparation stage	Rendition of familiar song This is essential on this stage but could be generally applied to other stages	Perform songs related to the audience time, hometown and current season	Find a song that is commonly liked by the audience. Reaction of the audience during performance like movement of their head, tapping hand and feet to the rhythm are essential cues to know if good song is selected	Familiarity helps to activate participation among audiences. Preparing also the audience for a performance is essential
		Watch the audience reaction carefully	Be prepared to change song as needed. Adjust tempo, pitch and tone as needed	Prepare a few song choices. Not all the time performances goes as anticipated, so having an alternative song to render is essential. Variation of tempo, pitch and tone could change the general effect of the song depending on situation
	Vocalization	Perform, simple, long and loud vocalization	This part will serve as their breathing exercise	Breathing exercise is essential prior to any strenuous activity
	Perform nature related song	Perform song related to moon and stars, etc.	Remind the audience the things they already know, but rarely seen or experienced, for being inside the facility. This will also facilitate their relaxation	A relaxed environment facilitates attention to performance

(*Continued*)

Table 2. (*Continued*)

Process	Main activity	Element /detailed action	Judgment standard	Core principle
Excite stage	Perform lively songs	Let the audience participate and experience music with their five senses •Grab the audience attention •Bring to climax •Compliment the audience	Create an emotionally pleasant atmosphere	Emotionally pleasant atmosphere lengthens the audience attention span
	Perform song combined with physical exercise	Use sticks, towels, newspapers as props	Use these things for maintenance and improvement of hand grip power, hand and eye coordination, etc.	Mobilization of muscles prevents muscle weakening especially for elderly residents
Cool down stage	Perform mellow songs	Let the audience cool down their emotions after a series of lively songs in order for them to have a complete totally satisfying experience	Not cooling down effectively could cause sleep cycle problems to audience.	Ending the music therapy abruptly without cooling down could leave the residents at aroused state.

rhythm, tone of the song is indispensable to be able to maintain the audience attention.

3.2.1 Performance Process Analysis II: Difference in Usage of Time

Figure 4 shows that the expert performance had used a total of 1637 s (27 min and 17 s) for rendition, 780 s (13 min) for Others (unspecified activity), and a total 1046 s (17 min and 26 s) for rendition interval. The performance timed a total of 3463 s (57 min and 43 s).

Figure 5 shows that the successor performance had used a total of 1252 s (20 min and 52 s) for rendition, 430 s (7 min and 10 s) for Others (unspecified activity), and a total 1669 s (27 min and 49 s) for rendition interval. The performance timed a total of 3351 s (55 min and 51 s).

On Figs. 6 and 7, the usage of time by the expert and successor were compared.

Performance Type	Song Name	Rendition Duration			Rendition Interval		
		s	m	s	s	m	s
Participatory Song	ドレミの歌	102	1	42	35	0	35
Participatory Song and Exercise	発声練習	107	1	47	14	0	14
Participatory Song and Exercise	パタカラ	150	2	30	57	0	57
Participatory Song	あのすばらしい愛をもう一度	168	2	48	47	0	47
Participatory Song	お座敷小唄(1回目)	71	1	11	63	1	3
Participatory Song	お座敷小唄(2回目)	64	1	4	48	0	48
Participatory Song	月がとっても青いから	92	1	32	65	1	5
Participatory Song	星影のワルツ	115	1	55	12	0	12
Participatory Song	指と手の運動	68	1	8	0	0	0
Participatory Song	2拍子・3拍子	112	1	52	86	1	26
Participatory Song	かかし(かなし)	37	0	37	12	0	12
Participatory Song	かかし(手を叩く)	34	0	34	82	1	22
Participatory Song	かかし(スタッフ伴奏)	35	0	35	90	1	30
Participatory Song	もしもしかめよかめさんよ(梓)	26	0	26	6	0	6
Participatory Song	もしもしかめよかめさんよ(梓)2回目	25	0	25	5	0	5
Participatory Song and Exercise	梓	292	4	52	55	0	55
Participatory Song	竹田の子守歌	121	2	1	63	1	3
Participatory Song	どんぐりころころ	75	1	15	37	0	37
Participatory Song	女ひとり	157	2	37	40	0	40
Participatory Song	もみじ	103	1	43	30	0	30
Participatory Song	旅愁	23	0	23			
		73	1	13	31	0	31
Participatory Song	里の秋	163	2	43	86	1	26
Participatory Song	夕焼け小焼け	95	1	35	82	1	22
Participatory Song	ふるさと	109	1	49			

Rendition Duration	1637	27	17
Others	780	13	0
Rendition Interval	1046	17	26
Total	3463	57	43

Fig. 4. Expert performance time data analysis (October 2014)

Attention was given to three variables, namely rendition duration, others and rendition interval. The expert's total rendition time was 6.41666667 min longer than the successor. On Others total (Unspecified activity, neither rendition nor rendition interval) the expert timed 5.83333333 min longer than the successor. While on the other hand, the rendition interval time for the successor is 10.3833333 min longer. This implies that the audiences waiting time for the next rendition was longer.

Performance Type	Song/Exercise Name	Rendition Duration			Rendition Interval		
		s	m	s	s	m	s
Participatory Song	まるたけえびす	35	0	35	13	0	13
Participatory Song and Exercise	発声練習(あいうべ)	115	1	55	62	1	2
Participatory Song	ふたりは若い	101	1	41	96	1	36
Participatory Song	富士の山	99	1	39	112	1	52
Participatory Song	津軽海峡冬景色	190	3	10	110	1	50
Participatory Song	おかあさん	93	1	33			
		19	0	19	83	1	23
Participatory Song	ジングルベル	107	1	47	40	0	40
Participatory Song	きよしこの夜	110	1	50	144	2	24
Participatory Song	もちつき	94	1	34	118	1	58
Participatory Song	じゃんけん	55	0	55	11	0	11
Participatory Song and Exercise	棒体操	240	4	0			
		20	0	20	61	1	1
Participatory Song	落ちた落ちた	44	0	44	95	1	35
Participatory Song	365歩のマーチ	64	1	4	286	4	46
Participatory Song	ふるさと	10	0	10	43	0	43
		12	0	12	37	0	37
		10	0	10	48	0	48
		9	0	9	14	0	14
Participatory Song	ふるさと全体	40	0	40	187	3	7
Participatory Song	雪	41	0	41			
		17	0	17	54	0	54
Participatory Song	たき火	69	1	9	55	0	55
Participatory Song	ふるさと	88	1	28			

Rendition Duration	1252	20	52
Others	430	7	10
Rendition Interval	1669	27	49
Total	3351	55	51

Fig. 5. Successor performance time data analysis (October 2014)

	Expert		Successor	
	m	s	m	s
Total Rendition Duration	27	17	20	52
Others	13	0	7	10
Rendition Interval	17	26	27	49
Total	57	43	55	51

Fig. 6. Performance total time comparison

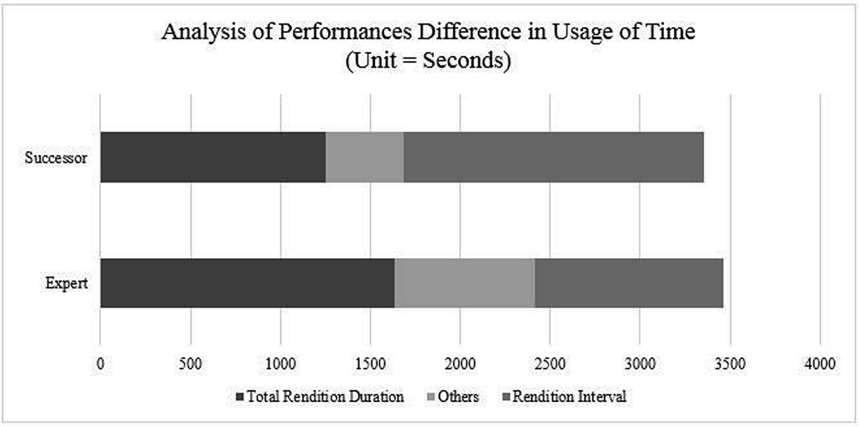

Fig. 7. Comparison in usage of time

4 Conclusion

Our study shows that positive development can be achieved if the performance is well-arranged. This study also implies that paying attention to the core performance requirements and the point of solving ingeniously and adjusting to the audience need while performing is the foundation that results to good performance. Finally, we believe that result of this study can be useful in producing the training video we wish to create.

5 Recommendation

Efficient use of time. Attention is a high priced commodity. Although we did not make a scientific comparison between the effect expert and successor's performance as it goes beyond our objective, we believe that skillful use of the time of the expert played a role in holding the attention span of the audience. We therefore recommend further studies on this matter.

Camera position. Although the front left and right camera captured the general movement of the performer during the actual performance, when we were interview for the process analysis, there were time that the area being pointed out by the performer as the location of the audience that had been the cue of her action and decision was beyond the captured area. In order to resolve this issue on future studies, we recommend of panning the front left and right camera a few degrees to the audiences would best results. An additional camera positioned center-front, set to wide angle could be also an alternative to the latter.

Performer's knowledge of dementia. After this study we feel that there is a necessity to further study if the performer's knowledge of dementia could have an impact on the way he will respond to the needs of the audiences who were suffering from dementia during his performances.

Transfer of expertise. As a result of the current revision of nursing care insurance law in Japan, and the current worsening situation of being short-staffed, more and more pressure are leaning towards the private paid elderly nursing facility on how to be able to deliver quality service to the residents. To be able to minimize the time loss and effectively transfer expertise of different caregiver skills, related studies are recommended.

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