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An evaluation study of the application of the "Silence Corner" in the management of patients with emotional problems in Hong Kong

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Abstract

Background: When discussing therapeutic interventions provided to people with emotional distress or with the outbreak of violence, the application of chemical and physical restraints are mostly used. With the increase proactive approach applied in mental health practice, the sensory-based interventions in mental health care have been emphasized in the recent years. This study aimed to evaluate the outcome of Silence Corner in the management of violence in Hong Kong.

Methods: 19 patients with emotional problems or violence tendency were recruited. Pre-/Post assessments were conducted by the trained research assistant. The pre/post assessments employed the Perceived Stress Scale (PSS) for checking patients' stress level. Each patient recruited was assigned with a number. They received a total of 6 sessions of using the Silence Corner lasting 20 minutes which was based on their needs. Descriptive and influential statistics was conducted to examine the outcome of the intervention of Silence Corner, and to compare the outcome variables with patients' demographic characteristics. The significance level was set at $p<0.05$ for this study.

Results: Based on the results of pre/post assessment evaluation, the stress level was reduced by 13.8%. Participants were able to refresh themselves by the Silence Corner sessions. Their inappropriate and chaotic thoughts could be minimized and eventually enhanced in their sleep quality. In addition, participants had freedom to make their decision like choosing the descriptions of the Silence Corner. The descriptions of executive chair (94.4%) music CD (66.7%) were well accepted and utilized by the participants. Such empowerment and autonomy given to participants reduced not only emotional problem effectively, but also facilitated in participants' recovery.

Conclusion: The objectives of current study had successfully achieved. In general, the intervention of Silence Corner is a proactive and effective approach in violence management in Hong Kong.

Key words: Silence Corner, emotional problems, violent tendency

Background

When discussing therapeutic interventions provided to people with emotional distress or with the outbreak of violence, the application of chemical and physical restraints is the main strategy used to cope with the problem. However, the negative effect from applying restraints and seclusion cannot be overlooked. These effects include the increase in staff and patient injury, trauma of the experience to the restrained patients, and added utilization of manpower and resources to prepare for managing violence. Several studies indicated that sensory-based activities are effective in caring for mental patients. These activities prevent seclusion and restraint [1-3] as well as promote stress reduction [4].

With the increasing application of the proactive approach in mental health practice, sensory-based interventions in mental health care have been emphasized in recent years. Mental health nurses are discovering the benefit of sensory rooms, such as the "Silence Corner." The Silence Corner serves as a silent, safe, and respectful place of retreat that is more supportive than rooms for seclusion, which deprive the senses and invite disorientation. In the Silence Corner, sensory supplies and activities are available to help patients calm down and avert a crisis, and the locus of control shifts from staff intervention to personal responsibility for self-regulation. Therefore, the Silence Corner is incorporated into restraint reduction initiatives and can be used for crisis de-escalation and prevention, as patients learn safer and healthier ways to regain self-control [5].

The Silence Corner is rooted in the knowledge of "sensory modulation." This concept refers to "the tendency to generate responses that are appropriately graded in relation to incoming sensory stimuli rather than under reacting or overreacting to them" (p.309). Modulation is an important part of sensory processing, and people need to modulate their senses appropriately to have good sensory processing. Moreover, the brain uses modulation to regulate sensory input. Specifically, modulation balances the level of attention and concentration by filtering out background distractions, focusing on important sensory information, and regulating the exposure to sensory input. Whenever adaptation could be achieved, the optimal range of performance should be presented instead of misbehavior in daily life [6]. The Silence Corner as a therapeutic space was designed to promote sensory modulation and facilitate learning and practice stress reduction. Others have commented that the use of the Silence Corner is similar to the practice of diversional therapy. Diversional therapy is a practice-centered activity that promotes involvement in leisure, recreation, and play by providing opportunities for patients opting to participate. However, diversional therapy requires guidance and planning of

a therapist, whereas the intervention of the Silence Corner offers patients opportunities for self-discovery and self-soothing techniques for meaningful activities in their journeys [7,8]. The intervention of using the Silence Corner for individual and group treatment is linked to treatment plans for patients with safety and self-regulation issues. The effective utilization the corner can link skills learned in the hospital environment to the use of helpful sensory strategies in the recovery process. Nurses play an important role in promoting autonomy and client-centered care throughout the intervention.

A limited but promising research indicates that sensory modulation can be a component of training and practice that can reduce seclusion and restraint. For change to occur, sensory modulation needs to be part of a range of strategies. The following study addresses the knowledge gap and aims to evaluate the outcome of the Silence Corner in the management of violence in Hong Kong. In the long run, the productive insights of the study are expected to improve further the management of violence in Hong Kong.

Aim and objectives:

This study aims to evaluate the outcome of applying the Silence Corner in the management of patients with emotional problems in Hong Kong.

The objectives are as follows:

- To assess patients' stress levels with the Silence Corner treatment
- To explore patients' perception on the application of the Silence Corner treatment

Methodology

Design: A mixed method, a quasi-experimental study, and interviews with stakeholders were used in this study. Phase 1 involved a quasi-experimental study with assessment tools to check the outcome variables from the intervention of the Silence Corner, and phase 2 included interviews with all participants to explore their perception of the Silence Corner.

Sample: The study was conducted in Castle Peak Hospital, the largest psychiatric hospital in Hong Kong. Two psychiatric units were involved. Several patients had emotional problems at times. The intervention of the Silence Corner was one of the caring measures for violence management.

Data collection and analysis: This study was conducted in two phases. In phase 1, a quasi-experimental study involved the outcome evaluation of the intervention of the Silence Corner. Pre-/Post assessments were conducted by a trained research assistant. The pre/post assessments employed the Perceived Stress Scale (PSS) for checking the stress levels of patients. A total of 19 patients with emotional problems were recruited as participants. Each recruited patient was assigned with a number. The frequency of using the Silence Corner was based on the participants' request to the staff when they were experiencing distress or when the ward staff suggested the participants to use the Silence Corner upon observing distressed participants. Each session of using the Silence Corner lasted for 20 minutes. Data were collected from the first six times of using the Silence Corner after joining the study. Descriptive and influential statistics were analyzed with SPSS 22.0 for Windows to examine the outcome of the intervention of the Silence Corner and to compare the outcome variables with demographic characteristics of the patients. The significance level was set to $p<0.05$ for this study.

In phase 2, a qualitative interview study approach was used to facilitate the effect of triangulation on phase 1. All the participants who completed phase 1 were invited for the unstructured interview. The interview lasted for 30 minutes. Thematic analysis was applied on the data for this phase. Before obtaining the informed consent of the participants to join the study, the researcher explained the study to them.

Key findings

Findings from the self-administrated questionnaires: Demographic characteristics of the participants

The study period was from January to July 2016. A total of 19 patients participated in this study with the staff's support. One patient withdrew from the entire study because of personal reasons and one patient completed phase 1 but was discharged in phase 2. Thus, the completion rate was 89.5%. PSS was applied to check the stress levels of the participants, before and after the intervention of the Silence Corner. The PSS consists of 14 self-reported items measuring non-specific perceived stress. Scores range from 0 to 56, with higher scores suggesting greater levels of stress. The demographic characteristics and the pre-assessment of the participants (n=18) are summarized in Table 1.

Concerning the demographic characteristics, all the participants were male, and their mean age was 47 years with a range of 28–66 years. About 38.9% of the participants were 40 years or above, and 61.1% were less than 40 years. In terms of the education level, 78.8% of the participants reached the secondary level of education. In terms of marital status, 55.6% of the participants were single. About 83.3% of the participants were unemployed. Majority of the participants had family support (61.1%) and previously used the Silence Corner (66.7%). Based on the mean scores of the stress level (27.1/56), the participants were considered to have moderate levels of stress before the intervention was given.

Given the above-mentioned demographic characteristics, the comparison of the outcome variables of these characteristics was conducted to ensure homogeneity (Tables 2, 3, 4, 5, 6 and 7). The comparison revealed a non-significant difference in the characteristics of age, education level, marital status, employment status, family support, and previous use of the Silence Corner. According to the analysis, the homogeneity of characteristics of the participants was confirmed and appeared relevant to the intervention effect discussed in the subsequent section.

Comparison of the outcome variables before and after intervention of the Silence Corner

The change in outcome variables of the participants before and after the intervention of the Silence Corner was analyzed. The outcome variables of the stress levels were statistically evaluated using mean and standard deviation, with changes before and after the intervention of the Silence Corner (Table 8). Stress levels showed an overall reduction of 13.8%. A significant difference in the change in the outcome variables of the stress levels of the participants was noted. The results indicated that the intervention of the Silence Corner reduced the stress levels of the participants.

Comparison of descriptions utilized in the Silence Corner

The descriptions of the Silence Corner were assessed to understand the preferences of patients while being treated in the Silence Corner. The frequency of the descriptions utilized in the Silence Corner is summarized in Table 9. The results indicated that the descriptions of executive chair (94.4%) and music CD (66.7%) were well accepted and utilized by the participants.

Findings from the interviews: The findings of the interviews were presented after the quantitative data. Unstructured interviews were

Table 1: Demographic Characteristics and Pre-assessment of the Participants of the Study.

Characteristics	Participants (n=18)	Frequency *f* (%)
Gender		
Male	18	100%
Female	0	0
Age		
≤40 (Young)	7	38.9%
>40 (Old)	11	61.1%
Education level		
Primary	4	22.2%
Secondary	14	78.8%
Marital status		
Single	10	55.6%
Married	7	38.9%
Divorced/Separated	1	5.6%
Employment status		
Employed	3	16.7%
Unemployed	15	83.3%
Family support		
Yes	11	61.1%
No	7	38.9%
Previous use of Silence Corner		
Yes	12	66.7%
No	6	33.3%
Mean ± SD		
Age	47.94 ±12.01	
Stress level (Pre-test)	27.08±4.47	

Table 2: Comparison of Age of the Participants

	Young (n=7)	Old (n=11)		
Characteristics	Mean ± SD		*t*	*P*
Stress level (Pre-test)	26.9±5.42	27.2±4.04	0.537	0.599

t: independent *t*-test;**p<0.05; *p<0.5

Table 3: Comparison of the Education Level of the Participants.

	Primary (n=4)	Secondary (n=14)		
Characteristics	Mean ± SD		*t*	*P*
Stress level (Pre-test)	29.5±2.67	26.39±4.71	0.876	0.231

t: independent *t*-test;**p<0.05; *p<0.5

Table 4: Comparison of the Baseline Marital Status of the Participants.

	Not Married (n=11)	Married (n=7)		
Characteristics	Mean ± SD		*t*	*P*
Stress level (Pre-test)	27.14±4.43	27±4.89	0.061	0.952

t: independent *t*-test;**p<0.05; *p<0.5

Table 5: Comparison of the Employment Status of the Participants.

	Unemployment (n=15)	Employment (n=3)		
Characteristics	Mean ± SD		*t*	*P*
Stress level (Pre-test)	26.49±4.55	30.06±2.99	-1.29	0.217

t: independent *t*-test;**p<0.05; *p<0.5

Table 6: Comparison of Family Support of the Participants.

	Yes (n=11)	No (n=7)		
Characteristics	Mean ± SD		*t*	*P*
Stress level (Pre-test)	26.32±5.24	28.29±2.84	-0.905	0.379

t: independent *t*-test;**p<0.05; *p<0.5

Table 7: Comparison of the Previous Use of the Silence Corner of the Participants.

	Yes (n=12)	No (n=6)		
Characteristics	Mean ± SD		*t*	*P*
Stress level (Pre-test)	25±5.31	27.17±4.26	0.866	0.399

t: independent *t*-test;**p<0.05; *p<0.5

Table 8: Outcome Variable of the Stress Level Before and After the Intervention of the Silence Corner.

	Patients (n=18)		
Outcome variable	Mean ± SD	*t*	*P*
Stress level (Pre-test)	27.08±4.47		
Stress level (Post-test)	23.33±5.08		
Change in stress level	3.75±2.37	6.72	**.00

t: Paired Sample t-test; **p<0.05; *p<0.5

Table 9: Comparison of the Descriptions Utilized in the Silence Corner.

Descriptions	Frequency (%)
Executive chair	17 (94.4)
Bean bag sofa	4 (22.2)
Fit ball	1 (5.6)
Yoga cushion mat	0 (0)
Aroma	6 (33.3)
Music CD	12 (66.7)
Books	1(5.6)
Happy box	6 (33.3)

Table 10: Themes and Sub-themes of Phase 2.

Themes	Sub-themes
Improving health condition	» Promoting physical health » Promoting psychosocial health
Increasing autonomy	» Facilitating decision making » Fostering motive
Areas for improvement	» Organizational support » Respect individuals' needs

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used to explore the perceptions of participants when applying the Silence Corner. Supported by from verbatim interviews, three themes were identified, namely, improving health condition, enhancing autonomy, and areas for improvement. The quotes reported in this section were translated from the Chinese transcriptions. The themes and sub-themes are presented in Table 10.

Improving health condition: Participants expressed that the intervention of the Silence Corner effectively improved their health condition. Two sub-themes were identified: promoting physical health and promoting psychosocial health.

a) **Promoting physical health**

Most of participants mentioned that after the intervention of the Silence Corner, their physical health, especially their sleep quality, improved. Listed below are comments from several participants:

> *"…it (Silence Corner) can calm me down and make me sleep well…"* (A001-6)

> *"The Silence Corner is used for resting…"* (A001-7)

> *"I feel that the Silence Corner can help me calm down and relax… It makes me sleep at night easily."* (A103-10)

b) **Promoting psychosocial health**

Majority of participants found that the Silence Corner could improve their psychosocial health. Listed below are comments from several participants:

> *"The Silence Corner provides a peaceful environment that makes me calmer…It helps me recover by reducing any inappropriate ideas."* (A001-1)

> *"When staying in the Silence Corner, I feel relaxed …and safe by owning my personal space…Sometimes…I am happy after talking with the ward nurses."* (A001-2)

> *"…become less bored and irritable after the intervention of the Silence Corner…I am able to communicate with others and…meet more friends."* (A001-8)

> *"…able to alleviate my distressed emotion…More happy…and my interaction with other patients improves…for example, we talk about what we heard on the radio."* (A103-2)

> *"By listening to music I like, I feel happy… By sitting on the bean bag sofa, I become excited… relaxed and comfortable… When the door of the Silence Corner closes, the room offers me a quiet environment and helps me improve my thinking…"* (A103-6)

Increasing autonomy: The concept of autonomy can be applied in the utilization of the Silence Corner. Autonomy is considered the core component of a meaningful life. Two sub-themes, namely, facilitating decision making and fostering motive, were identified to support the theme of increasing autonomy.

a) **Facilitating decision making**

Several participants agreed that the intervention of the Silence Corner offered an opportunity for them to exercise their decision making. The ward staff supported participants on the use of the Silence Corner. Listed below are comments from several of the participants:

> *"The ward staff let me decide on how to use the Silence Corner…quite good for me…"* (A001-7)

> *"…When I request for the use of the Silence Corner, the ward staff allow and support me to use it immediately."* (A103-4)

b) **Fostering motive**

Several participants were able to master the usefulness of the Silence Corner. They emphasized how the Silence Corner empowered their capability. Listed below are comments from several of the participants.

> *"Sometimes…helps me much. For example, I calm down after being agitated after listening to music CDs... To me, listening to the radio inside the Silence Corner is enjoyable… Enables me to think about the discharge plan more positively and productively…."* (A103-10)

> "*Listening to music seems to be a type of music therapy that can stimulate nerves. It makes me more focused…on something and enables me to calm down to think clearly…As each person has his/her own perception on the effect of music, I suggest using "pure music" rather than "music song"… Pure music can provide an effective stimulation…No need for the sound of gongs and drums.*" (A103-7)

Areas for improvement: Although the participants mostly mentioned the benefits gained from the intervention of the Silence Corner, a number of them described the difficulties they experienced from the intervention. Organizational support and respect for individual needs were found as two sub-themes.

a) **Organizational support**

Several participants observed that more support should be given by the hospital. Some suggested having *more available spaces for the Silence Corner…it should be easily accessed by ward nurses for support* (A001-1; A001-6; A103-9). Listed below are comments from the other participants:

> *"For a more relaxing experience, if possible, I suggest that the floor be covered with a carpet to increase the "home-like" feeling."* (A103-10)

> *"If possible, I suggest more entertainment, such as lucky draw, snack arrangement, etc., to increase the participants' interest."* (A001-8)

b) **Respect for individual needs**

Several participants put forward ideas involving individual concerns for further improvement. Listed below are comments from the participants:

> *"…Each person has a one-hour quota each day. It will be better if that one hour can be separately used. Then, I can freely choose the time slot…maybe at daytime or at nighttime, whenever I prefer."* (A103-10)

> *"I use the Silence Corner once a week. If possible, I suggest that patients can be allowed to use the Silence Corner twice a week."* (A103-6)

The above keys findings support the usefulness of the intervention of the Silence Corner. In the result of phase 1, a significant difference was observed in the change in anxiety and stress levels. Supported by interview data, three themes (i.e., improving health condition, increasing autonomy, and areas for improvement) and six sub-themes were identified through thematic analysis. The results help in mapping out the results from phase 1 and in discussing the usefulness of the Silence Corner in the next section.

Discussion

Benefits from the intervention of the Silence Corner: The usefulness of the Silence Corner was confirmed by the quantitative and qualitative results. After its implementation, the stress levels was reduced by 13.8%, based on the results of the pre/post assessment

evaluation. Nowadays, along with the decreased focus on chemical/restraint treatments to violence management and the practice of the recovery model in Hong Kong, patient-centered and proactive strategies are being promoted. In this study, the Silence Corner is a type of multi-sensory intervention that can produce a therapeutic effect on the behavior of individuals, particularly for the purpose of de-escalation and/or violence prevention. This intervention involves the tendency to generate responses that are appropriately graded in relation to the incoming sensory stimuli rather than under reacting or overreacting to them. More importantly, modulation is a crucial part of sensory processing. To obtain good sensory processing, people need to modulate their senses appropriately. Possibly due to the adaptation of patients to a distressful stimulus, the optimal range of performance can be presented instead of violent behavior in daily living [6]. Similar to previous studies (Champagne & Sayer, 2004; Champagne, 2006), most of the patients using the sensory room reported having a positive response and decreased distress.

Apart from improving their stress levels, the participants asserted that their health improved, especially in the areas of sleep quality and interaction with others. They treated the Silence Corner as a "personal area for mindfulness" or "safe haven" from the unstable ward environment. The participants were able to refresh themselves through the Silence Corner sessions. Their inappropriate and chaotic thoughts were minimized, and their sleep quality was enhanced. In addition, the participants had more chatting topics with others after using the Silence Corner, which could widen their social network.

Another core factor contributing to the significant difference in the change in the outcome variables of the stress levels of the participants could be related to the application of autonomy. Based on the results of the interviews, autonomy of the participants along with rationality could be facilitated. In this study, the Silence Corner facilitated the "recovery model" as applied to mental health practices that consider beliefs, namely, hope, respect, individualized and client-centered care, and empowerment. All these beliefs were possible for the participants, so that they could regain a meaningful life [9,10]. Promising interviews results indicated that the Silence Corner provided an opportunity for the participants to develop and practice their autonomy. Without interference, the participants had the freedom to decide, such as choosing the descriptions of the Silence Corner. The descriptions of the executive chair (94.4%) and music CD (66.7%) were accepted and utilized by the participants. The participants could gain their sense of self-possession/esteem while sitting on the executive chair, which could promote a safer feeling. Moreover, the participants appreciated listening to music CDs as it improved their emotional self-management [11]. The ward staff were supportive in facilitating the self-management of the participants, especially in letting the participants make their own choices. Such empowerment and autonomy given to the participants reduced their emotional problems effectively and facilitated their recovery.

Suggestions for improvement

The above discussion showed the benefits of the Silence Corner. Nevertheless, several participants put forward certain areas for improvement. First, as the participants requested for *the floor to be covered with a carpet for a more relaxing experience,* the home-like environment of the Silence Corner should be enhanced. A home-like environment in mental health practice can offer a therapeutic effect on reducing stress and anxiety, thus promoting healing and recovery and increasing patient satisfaction [12,13]. Therefore, if possible, the therapeutic and home-like physical layout of the room should be encouraged. Second, the importance of providing choices to patients was emphasized by the fact that one participant wanted the inclusion of *the element of entertainment, such as lucky draw, and a snack arrangement*. According to the core principle of self-discovery and self-management applied to the Silence Corner, the nature and content of the descriptions arranged in the Silence Corner should be revised and updated regularly to maintain the interest of patients. Third, respect for individuals needs should be enhanced, as a number of participants preferred to have flexibility in the utilization of the Silence Corner. Therefore, respecting the individual needs of patients could allow more opportunities for the participants to use the Silence Corner. More time slots should be added for the patients to choose. The clinical staff should consider various modes and suggestions from patients for delivering the Silence Corner service. In some occasions, activities could be done in groups or inside the Silence Corner if necessary. Finally, updated and relevant Silence Corner training should be continued for the clinical staff to prepare them continuously in running this intervention. In sum, the proactive approach to dealing with emotional problems and promoting the autonomy of patients was evidently successful after the intervention of the Silence Corner in this study.

Limitation

First, in recognition of the uncontrollable factors involved in the clinical settings across the study, the reasons for the decrease in stress level might not be exclusively attributable to the use of the Silence Corner. Second, although the raters had been trained beforehand, bias from the different raters might have appeared. A blinded trail of study would be particularly helpful in controlling this form of measurement bias. Third, the sample size should be increased to cover heterogeneous backgrounds and thereby enable the evaluation to be more relevant to real situations.

Recommendations for the practice of the Silence Corner

For the success of the practice of the Silence Corner, the following guidelines are proposed:

- Therapeutic and home-like physical layout

Obtaining a safe and healing effect from the environment can facilitate the independence and recovery of patients. Patients enjoy relaxing and a comfortable environment for treating their ill health.

- Importance of providing descriptions for patients

Providing stimulating and updated descriptions for patients' choices is important because these items maintain their interest and motivation.

- Element of autonomy and self-management

Freedom of choice and opportunities for the practice of self-management are important principles for running the Silence Corner. Whenever patients choose self-soothing methods, they adapt well to their emotional problems and stimuli, thus consequently improving their health.

- Flexibility in utilization

Along with the proactive approach toward violence management, enhanced flexibility can immediately facilitate health needs of patients.

- Staff education and training

Ongoing education and training sessions should be offered to the staff to promote the practice of the Silence Corner in the ward environment.

Conclusion

The objectives of the current study were successfully achieved. The quantitative and qualitative results indicated improvement in the

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health conditions of patients. In particular, a significant improvement in the outcome variables of the stress levels was observed. Three themes, namely, improving health condition, increasing autonomy, and areas for improvement, and six sub-themes were identified through thematic analysis. Promising findings can effectively draw the core characteristics of running the Silence Corner, such as a therapeutic and home-like physical layout, importance of providing descriptions for patients, elements of autonomy and self-management, flexibility in utilization, and staff education and training. In general, the intervention of the Silence Corner is a proactive and effective approach in violence management in Hong Kong.

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Conflict of interest

The authors declare that there is no conflict of interests with respect to this publication.

Ethical Approval

Ethical approval to conduct the study was obtained from the University Ethics Committee of The Open University of Hong Kong and Hospital Authority Hong Kong. Meanwhile, informed consent was obtained from all individual participants included in the study.

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