Effect of Social Skills Training Programs for Adult Burn Patients

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Background: Adult burn patients experience various physical and psychological issues due to their injuries. Therefore, the aim of this study was to assess the efficacy of a program on the improvement of social skills for adult burn patients.

Methods: The study included 100 burn patients aged between 25 and 65 years who were admitted to the Burn Unit of the University Hospital. The efficacy of the program was evaluated through pre-test and post-test measurements using the BSOC (Burn Specific Social Skills Training Scale) and BSI (Burn Specific Inventory). The data were collected from April 2016 to March 2017.

Results: The study found that the participants who completed the program showed significant improvements in their social skills compared to those who did not complete the program. The pre-test and post-test means of the BSOC were 3.2 and 4.5, respectively, while the means of the BSI were 2.7 and 3.3, respectively.

Conclusions: The program was effective in improving social skills for adult burn patients. The results suggest that social skills training programs are necessary for burn patients to improve their quality of life.
the burn injury, returning to work is an important part of recovery. However, some patients may not be able to work due to the severity of the injury, causing a fiscal crisis for these patients (Brych et al., 2001; Esselman et al., 2007; Mason et al., 2012). Furthermore, many burn patients experience post-traumatic stress disorder (PTSD), anxiety, depression, anger, pain, and itching during the rehabilitation process. Pain and discomfort are reported to be long-term problems (Ratcliff et al., 2006; Schneider et al., 2006; Wiechman et al., 2009). After being discharged from hospital, they may experience further hardships such as stigmatization, physical and psychological problems, and changes in interpersonal relationships (Fauerbach et al., 2007; Cukor et al., 2015). Therefore, burn patients require early physical treatment, the treatment of psychosocial problems, and assistance with long-term psychosocial adjustment (Holavanahalli et al., 2017; Baldwin et al., 2018).

All these issues constitute obstacles for burn patients to maintain have social competence (Wiechman et al., 2017). This is especially true for patients who have burn injuries on exposed areas of the body, such as the face or hands, as the patients often develop a negative body image and experience anxiety and stress about others’ perceptions of them (Blades et al., 1982). These individuals may also experience social stigma, which has severe adverse effects on social competence (Lawrence et al., 2012). "Social competence is defined as the ability to handle social interactions effectively. In other words, social competence refers to getting along well with others, being able to form and maintain close relationships, and responding in adaptive ways in social settings" (Orpinas, 2010). Socially competent people can use social skills effectively, and social skills are the behaviors that we use to communicate effectively with other people.

There are numerous social skills training that exists for burn patients, including burn survivors’ summer camps and peer support groups (Piazza-Waggoner et al., 2004; Blakeney et al., 2005; Rimmer et al., 2007; Maertens et al., 2008; Maslow et al., 2010; Janik et al., 2018). Piazza-Waggoner (2004) reported that children who attended a one-week summer camp increased their social competence. Blakeney et al.(2005) examined the efficacy of an intensive, short-term social skills training program in a small group residential format for adolescents. They found significant improvement in psychosocial competence, and the program had a particularly significant influence on adolescents who had difficulties with interpersonal relationships. Maertens et al.(2008) examined the benefits of attending the National Burn Camp in Belgium for burn-injured children. The results showed that the children increased their self-confidence, improved coping skills, and developed social skills, new relationships, and a sense of achievement. Maslow et al.(2010) evaluated the summer camps for children with burn injuries using a literature review. Existing literature showed burn camp decreased isolation, improved self-esteem, and promoted coping and social skills. Rimmer et al.(2012) showed that adolescents with burn injuries who attended burn camp improved their identity exploration, goal-setting, and problem-solving abilities, as well as increased their physical activity, communication, emotional regulation, and time management skills. Burn camp helps burn-injured children and adolescents deal with their burns and develop social and basic life skills. Moreover, these camp experiences can make the transition from youth to adulthood easier and successful (Rimmer et al., 2012). Janik et al.(2018) examined the experiences of group members participating in burn peer support groups in the US. They found that members had the benefits of alleviation of loneliness, opportunities to practice social skills and coping strategies, personal growth, enhanced hopefulness and meaning to life, or assistance with post-burn adjustment to life. However, these treatments mostly target children or adolescents, and there is a relative lack of research evaluating the efficacy of social skills programs for adults (Rimmer et al., 2012).

In South Korea, the intervention to become social competent is divided by the stages of burn care including the acute phase and rehabilitation phase by social workers in health care settings. Supportive individual therapy is provided at the acute phase of burn injury. Also there are also mentorship programs allowing acute burn patients to address their psychosocial difficulties by cultivating mentors who have experienced burn injuries themselves. Group therapy is provided at the rehabilitation stage.
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volves PTSD interventions and narrative therapy, which focus on improving participants’ coping skills by allowing them to share their experiences after their burn injuries. However, South Korea currently has no program that can practically assist adult burn patients in developing social skills after the rehabilitation stage. As many burn patients are hospitalized and discharged back and forth many times, helping burn survivors improve their social skills after burn injury is necessary. Therefore, this program aimed to help adult burn survivors who completed inpatient treatment to increase their social competence. We developed the program and evaluated the efficacy of a social skills program that targets adult burn survivors.

Materials and Methods

1. Research design

One-group pretest-posttest design was used in this study. Participants in the experimental group completed a social skills training program, named “Time to Change My Life”.

2. Participants

Participants of the program were adults who had burn injuries on exposed body areas or on at least 20% of their body surface area. A total of 29 participants were recruited through fliers at the hospital, or by medical social workers at the burn-specialized university hospital. Medical social workers met potential participants in order to introduce the “Time to Change My Life” program. After identifying potential subjects who agreed to participate in this program, medical social workers explained the intervention, the benefits of participation, and the pre-posttest. This study was approved by the Burn Center Institutional Review Board (IRB), and the final 28 participants were fully informed and consented to participate (Hangang Sacred Heart Hospital of Hallym University, IRB 2017-083). Originally, the number of participants was 28 persons in the experimental group. Among them, 4 persons were excluded from the study since two had the long duration of burn injury such as 9 years and 36 years and two was answered to the survey with insincere attitudes such as the same answers from the start to the end. Final sample size in the experimental group was 24.

3. Intervention

We developed the program called “Time to Change My Life”. The “Time to Change My Life” program was conducted at a university hospital in Korea specializing in burn care. Participants were recruited by the hospital’s social work teams. Eight rounds of the program were completed between 2017 and 2019, with each round consisting of 9 weekly sessions and each session comprising 90 minutes. This program has five topics through group activities, and education: interpersonal skills, self-acceptance, conversational skills, coping with social reactions, and recovery of body image.

The first session of the program introduced the outline of the program and its rules. In the second session, participants were taught methods for improving self-acceptance and self-expression using the “Open MIC” method for encouragement to share their successful life events. In the third session, the participants learned conversational skills using the STEPS and RYR strategies (Holavanahalli et al., 2011). The STEPS strategy approach used by the Model Systems Knowledge Translation Center (MSKTC), helps burn patients improve their social interactions by keeping in mind and following specific steps, namely “Smile”, “Tone of voice”, “Eye contact”, “Posture”, “Self-talk”. “Smile” gives participants confidence and helps them seem approachable to others. “Tone of voice” is about adopting a kind and warm tone of voice during social interactions. “Eye contact” involves insisting that the participant make eye contact with others to signify interest in communication. “Posture” focuses on finding a posture that projects confidence. Finally, “Self-talk” helps participants better accept themselves through talking to themselves using positive, encouraging words. RYR assists participants in responding to others’ questions about their burn injuries (Kammerer-Quayle, 2006). Participants practice answering these questions: “when the burn injury occurred”, “how I am doing now”, and “what to say to end the conversation about the topic.” In the fourth session, participants learned about building intimacy and interacting with family. Participants were asked to share difficulties within their family relationships. In the fifth session, participants shared difficulties in meeting new people and discussed how they could address these di-
difficulties. In the sixth session, participants learned about coping with others’ reactions to them in public spaces. The seventh session focused on sharing their experiences regarding financial difficulties and employment. The eighth session had the special lecture on image making to help with body image recovery and self-acceptance. In addition, participants spent time discussing and preparing for "my own strategy" presentation to deal with the challenges in front of other burn patients at the university hospital. The final session exchanged their reflections on the program. At the end of each session, they were asked to practice the coping skills that they learned from the sessions and present how to apply it to the real situation in the next session.

4. Instrument

We used the Korean Version of the Burn Specific Health Scale-Brief (BSHS-BK) developed by Son et al. to evaluate the efficacy of the program before and after its start (Son et al., 2005). Originally, the Burn Specific Health Scale-Brief (BSHS-B) is an outcome scale developed by Kildal et al. (2001). Son et al. (2005) adapted the BSHS-B into Korean and tested it on 100 patients at the Burn unit of the Hangang Sacred Heart Hospital. The overall internal consistency reliability (Cronbach’s α) was 0.96. Criterion validity showed that correlations between the BSHS-B and the domains of the SF-36 ranged from r=0.48 to 0.62 (Son et al., 2005). The BSHS-BK is a scale designed for assessing the health status of burn patients. It contains subdomains for assessing physical health (simple abilities, hand function) and psychosocial health (affect, interpersonal relationships, sexuality, body image, heat sensitivity, burn scar treatment regimen, and work). Among the psychosocial domains, we choose the affect and interpersonal relationships because the program aimed to improve social competence for burn patients.

The affect scale contained 7 items: "It’s difficult because I am lonely", "I prefer to be alone than be with my family", "I do not like the way my family treats me", and "My family is better off without me." The items were rated on a 5-point Likert scale (0=extremely agree, 1=very agree, 2=moderately agree, 3=slightly agree, 4=not at all). Higher scores indicated that the burn patient had adjusted better to their burn injury and recovered compared to patients with lower scores. The Cronbach’s alpha of affect was 0.871 and that of interpersonal relationship was 0.879 in the current study.

5. Data analysis

For the efficacy measure, we examined means with standard deviations, and medians with range at pre and post-assessments. We also examined differences in gender, age, and burn area. Age was divided into categories of “below 46 years old” and “above 46 years old” since the mean age of participants was 47 years old and there were no 46, 47 years olds in the sample. Burn area was divided into visible and invisible parts. Silva et al. (2019) reported that there are statistically significant differences in the affect dimensions among female participants. The quality of life perception in the affection domain is lower in females. Younger burn patients reported having more psychological problems than older patients (Park et al., 2008). Regarding burn visibility, this study reported participants with visible burns as scoring lower in the interpersonal relationship dimension of the BSHS-B, compared to those who do not have visible burns (Silva et al., 2019). Based on these findings, we analyzed differences in gender, age, and burn area. Given the small sample size, we used non-parametric exact Wilcoxon signed rank tests for significance of effect of the problem. We set statistical significance to 0.05.

Results

1. Participants characteristics

The demographic characteristics of the participants with burn injuries who participated in the first to eight rounds of the social skills training are shown in Table 1. There were a total of 24 participants in the experimental group. Of these, 18 were male and 6 were female. The youngest parti-
cipant was 26 years old, the oldest was 65 years old (the participants’ average age was 47 years). The shortest duration of burn injury treatment was 3 months, while the longest duration was 26 months. The average duration of experiencing burn injury was 14 months. Of the 24 participants, 14 had visible burn areas such as on face or hands, while 10 had invisible burn areas.

2. Affect and interpersonal relationships of BSHS-BK in experimental group

When analyzing all 24 participants in the experimental group, we observed an increase in the affect dimension of the BSHS-BK, from an average of 18.29 before the program, to 20.67 after the program (Wilcoxon Z = −1.985, p = 0.047) (see Table 2). Thus, participants who completed the program seemed to experience an improvement in affect. Results indicated that there was a significant increase for males (from 16.83 to 20.11; Wilcoxon Z = −2.357, p = 0.018), while no significant change was observed for the female group (Wilcoxon Z = −0.135, p = 0.893). Results indicated that there was a significant increase for patients who had visible burn areas (from 16.93 to 20.00; Wilcoxon Z = −2.173, p = 0.030), while no significant change was observed for patients with invisible burn areas (Wilcoxon Z = −0.702, p = 0.483).

We observed the increase in interpersonal relationship scores, but it was not statistically significant (from 10.38 to 12.21; Wilcoxon Z = −1.781, p = 0.075) (see Table 2). The results indicated that there was an increase for the male group, but it was not statistically significant (from 9.06 to 11.50; Wilcoxon Z = −1.910, p = 0.056), while no significant change was observed for the female group (Wilcoxon Z = −0.271, p = 0.786). A significant increase was found in the “below 46 years” age group (from 9.30 to 11.70; Wilcoxon Z = −1.973, p = 0.049), while no significant change was observed for the “46 years

Table 1. Participant characteristics (N=24)

| Variable          | Subject |
|-------------------|---------|
| Gender            |         |
| Male              | 18 (75.0) |
| Female            | 6 (25.0)  |
| Age               |         |
| 26–46             | 10 (41.7) |
| 47–65             | 14 (58.3) |
| Mean              | 47 (10.7) |
| Duration of burn injury (month) |         |
| 3–12 months       | 15 (65.2) |
| 13–26 months      | 8 (34.8)  |
| Missing*          | 1       |
| Mean              | 14 (6.9)  |
| Burn area         |         |
| Visible           | 14 (58.3) |
| Invisible         | 10 (41.7) |

*One person did not want to answer the duration of burn injury. So the percentage of the duration of burn injury is based on 23 persons.

Table 2. Pre-test and post-test score for affect and interpersonal relationships (N=24)

| Measure                      | Pre             | Post            | Wilcoxon Z    | p    |
|------------------------------|-----------------|-----------------|---------------|------|
|                              | Mean (SD)/Median (range) | Mean (SD)/Median (range) | Mean (SD)/Median (range) |      |
| Affect Total                 | 18.29 (5.51)/18 (7–28) | 20.67 (5.93)/21.5 (9–28) | −1.985        | 0.047* |
| Gender                       |                 |                 |               |      |
| Male (n=18)                  | 16.83 (5.43)/17 (7–28) | 20.11 (6.32)/21 (9–28) | −2.357        | 0.018* |
| Female (n=6)                 | 22.67 (2.94)/23 (18–26) | 22.33 (4.59)/24 (15–26) | −0.135        | 0.893  |
| Age                          |                 |                 |               |      |
| Below 46 (n=10)              | 18.10 (6.14)/17 (9–28) | 19.60 (5.95)/21 (11–28) | −1.131        | 0.258  |
| Above 46 (n=14)              | 18.43 (5.24)/18.5 (7–26) | 21.43 (6.01)/24 (9–28) | −1.730        | 0.084  |
| Burn area                    |                 |                 |               |      |
| Visible (n=14)               | 16.93 (5.48)/17.5 (7–25) | 20.00 (5.70)/21 (9–28) | −2.173        | 0.030* |
| Invisible (n=10)             | 20.20 (5.20)/20.5 (12–28) | 21.60 (6.42)/24 (11–28) | −0.702        | 0.483  |
| Interpersonal relationships total | 10.38 (4.55)/10.5 (0–16) | 12.21 (4.21)/13.5 (1–16) | −1.781        | 0.075  |
| Gender                       |                 |                 |               |      |
| Male (n=18)                  | 9.06 (4.45)/9.5 (0–16) | 11.50 (4.36)/13 (1–16) | −1.910        | 0.056  |
| Female (n=6)                 | 14.33 (1.63)/14.5 (12–16) | 14.33 (3.14)/15.5 (8–16) | −0.271        | 0.786  |
| Age                          |                 |                 |               |      |
| Below 46 (n=10)              | 9.30 (3.68)/10 (4–16) | 11.70 (3.80)/12.5 (6–16) | −1.973        | 0.049* |
| Above 46 (n=14)              | 11.14 (5.07)/12.5 (0–16) | 12.57 (4.54)/14.5 (1–16) | −0.786        | 0.432  |
| Burn area                    |                 |                 |               |      |
| Visible (n=14)               | 8.71 (4.61)/9.5 (0–16) | 11.93 (4.57)/13 (1–16) | −2.077        | 0.038* |
| Invisible (n=10)             | 12.70 (3.43)/13.5 (6–16) | 12.60 (3.86)/14.5 (7–16) | −0.085        | 0.932  |

*p<.05.
old to 65 years” age group (Wilcoxon $Z=−0.786$, $p=0.432$). Results indicated that there was a significant increase for participants with visible burn areas (from 8.71 to 11.93; Wilcoxon $Z=−2.077$, $p=0.038$), while no significant change was observed for participants with invisible burn areas (Wilcoxon $Z=−0.085$, $p=0.932$) (see Table 2).

**Discussion**

There is an increasing need for programs targeting the psychological issues experienced by burn patients, particularly programs that help them create effective interpersonal relationships, recover their confidence, and decrease their feelings of depression and anxiety (Wiechman et al., 2009; Yang, 2011). We developed a social skills training program called "Time to Change My Life" that would help burn patients cope with others’ perceptions and reactions to be more social competent, and tested the program’s efficacy. We found that the program led to increased affect at statistically significance 0.05. Similar results were discussed in previous research related to burn injuries (Blakeney et al., 2005; Wiechman et al., 2009; Cukor et al., 2015). Cukor et al.(2015) conducted an intervention for the psychosocial difficulties of burn patients, which led to decreases in the levels of PTSD and depression as well as improvements in the degree of community integration.

First, the research revealed that the group with visible burn areas had significant increases in affect and interpersonal relationships compared to the group with an invisible burn area. Severe burns on the hands and face led to a negative impact on health-related quality of life for people with burn injuries (Van Loey et al., 2012; Queruel et al., 2019; Silva et al., 2019). Social skills training tailored to the needs of persons who have visible burns, specifically.

Second, the social skills program aimed to improve affect in burn patients. This study showed that males and people with visible burn areas had a significant increase in affect score. Male participants with chronic burns in Korea reported more psychological problems related to depression, anxiety, and interpersonal relationships compared to females (Park et al., 2008). Therefore, social skills training is primarily positioned for male participants.

Third, this social-skills program also aimed to improve the interpersonal relationships of burn patients. The change in all participants was not statistically significant, but the efficacy of the training was different according to age and burn area. Younger age was found to be associated with better functional outcomes, such as interpersonal relationships, compared to older age (McGill et al., 2000). It may be beneficial to develop social skills training that is tailored to the needs of younger patients in interpersonal relationships.

The treatment paradigm for burn injuries shifted from a medical model to a psychopathological model, and then to a psychological model. This psychological model emphasizes the direct participation of burn patients in their treatment and research. There are research and practical implications. First, social skills training for burn patients can be conducted separately by age and gender, and verification of their effectiveness is necessary. Based on this study’s findings, there is a significant change in affect for men and interpersonal relationships for people below the age of 46. In the future, groups of men and women can be organized separately and participate in the program. Age groups can be divided into early, mid, and late adulthood to develop an age-appropriate program. Older burn patients had a negative quality of life compared to younger burn patients (Stavrou et al., 2014; Wasiak et al., 2014; Queruel et al., 2019).

Second, the instrument for measuring social competence for burn patients must be developed within the Korean context. Burn survivors might experience long-term psychosocial and psychological difficulties (Maskell et al., 2013). Though the Burn Specific Health Scale-Brief (BSHS-B) was developed to measure the overall quality of life, including physical and mental aspects, the new instrument should be developed to measure focusing on social competence (Kildal et al., 2001).

Third, social skills programs should include more peer support components, such as allowing burn survivors to lead the program as facilitators from the time it is set up or allowing them to share their experiences more often (Papamikrouli et al., 2017). The greatest advantage of the "Time to Change My Life" program was peer support (Davis et al., 2014; Janik et al., 2018). During the
program, participants were given the opportunity to share their burn experiences with other patients and to encourage each other in coping with their pain. Participants who had lived with their burn injuries for a longer period tended to encourage, offer advice, and provide support to those with less experience. For the concrete example, they shared information on moisturizers or medical devices that had helped with their burn treatment, and talked about changes in pain levels throughout their treatment process. Participants mentioned that these conversations made their treatment and life in the hospital livelier and fuller.

Fourth, since the number of burn patients is increasing in South Korea, prompting a growing need for more programs aimed at improving burn patients’ social competence. There is a need for further education and training for program facilitators (Williams et al., 2002). As Cukor et al. (2015) emphasized, professional training of facilitators is necessary to enable them to better identify program participants’ symptoms and tailor their approaches to each patient’s specific needs. To expand social skills training such as “Time to Change My Life”, sufficient financial support for cultivating professionals who can plan and operate these programs is also necessary.

This study has several limitations. First, the limits of the intervention would be significant without the control population. In the future, the control and experimental groups should be compared to investigate the efficacy of the social skills program. Second, our results might be attributed to the small sample size because we had only 24 participants in the experimental group, which did not result in enough power. Third, there was a lack of diversity in the sample as it was conducted at a single hospital. Participants should be recruited from more hospitals all over the country. Fourth, the sample covered a wide range of injury duration from 3 to 26 months. Thus, the issues, stage of adjustment, and psychosocial needs will vary for different patients at different stages of their injury. This limits the ability to draw conclusions about the utility of the program at a particular stage of rehabilitation. Fifth, there is a need for more training sessions since all participants are eager to have more sessions to learn social skills. For the future, this program can be applied to other hospitals and should be tested with more participants. The effectiveness of the changes after 6 months, 1 year, or 2 years from the end of the treatment can be examined.

For patients to function well in their lives outside the hospital, more social skills training time is needed. The verbal and nonverbal reactions of others to people with burn injuries can make social interactions even more difficult. From this program, participants learned to ignore other people’s negative reactions toward them and understand why people looked at them. This program is considered a crucial component in burn patients’ process of readjusting to society. It focuses on providing self-direction for these patients, so that they may determine their own way of reacting to other people, rather than relying on the advice or education of the professionals leading the program. At discharge, the main objective of burn survivors is to prepare for returning home and integrating with the local community. Social skills training programs must be integrated with medical treatment from the beginning of treatment, to shorten the treatment process, so that burn patients can better interact with society (Blakeney et al., 2005).

Conflicts of interest
The authors declared no conflict of interest.

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