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Research Article

Effects of a Sociodrama-based Communication Enhancement Program on Mothers of Children with Neurodevelopmental Disorders: A Pilot Study

Sun Joo Jang, Jong-Sook Han, Myoung Hee Bang, Jung-Won Ahn*

Red Cross College of Nursing, Chung-Ang University, South Korea

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SUMMARY

Purpose: The incidence and prevalence of neurodevelopmental disorders have rapidly increased, indicating an urgent need for assistance through parenting interventions. This study aimed to evaluate the effects of a sociodrama-based communication enhancement program on mothers of children with neurodevelopmental disorders.

Method: A non-randomized controlled experimental study design was employed. The experimental and control groups had 16 and 18 participants, respectively. The once-a-week six-session intervention was conducted from September to November 2017, in South Korea. The effects of group, time, and group-by-time interactions among the groups were verified using generalized estimating equations with an autoregressive correlation structure.

Results: There was a significant decrease in the parenting burden, alongside a significant improvement in parent-child communication and parenting competence in the experimental group compared to the control group.

Conclusion: The sociodrama-based communication enhancement program was found to positively influence the parenting burden, communication, and parenting competence of mothers of children with neurodevelopmental disorders. These findings suggest that sociodrama-based programs may be an effective intervention strategy for parents of children with neurodevelopmental disorders. The sociodrama-based communication enhancement program can be applied to decrease parenting burden and improve parent-child communication and parenting competence. Through continuous parenting interventions, an improvement in expressive language and an increase in the attachment behaviors of children with neurodevelopmental disabilities could be expected.

Introduction

Neurodevelopmental disorder is a broad term for diseases related to physical, learning, verbal, or behavioral impairment and includes autism spectrum disorder (ASD), intellectual disability (ID), and attention deficit hyperactivity disorder (ADHD) [1]. A recent study, based on a nationwide sample, revealed that the incidence and prevalence of developmental disorders have increased two- and four-fold, respectively, in the last 15 years [2], indicating an urgent need for assistance through parenting interventions.

Parents of children with neurodevelopmental disorders experience psychosocial distress and economic burden, difficulties in performing their parental role [3], and severe parenting stress [4]. Children with disabilities require additional sustained and diverse care compared to healthy children, which can result in multidimensional experiences regarding both parenting stress and parenting reward (i.e., feeling indispensable in the family) [5]. According to a recent survey, 90.3% of the primary caregivers for young children with disabilities in Korea were mothers; consequently, the latter are at a greater risk of parenting burden [6]. A previous study defined the parenting burden of children with neurodevelopmental disorders involving psychological distress,

Sun Joo Jang: https://orcid.org/0000-0002-7655-1744; Jong-Sook Han: https://orcid.org/0000-0003-2720-8779; Myoung Hee Bang: https://orcid.org/0000-0001-6824-6814; Jung-Won Ahn: https://orcid.org/0000-0001-5389-3189

* Corresponding author.
E-mail addresses: icedcoffee@hanmail.net, jshan@cau.ac.kr, mhbang72@cau.ac.kr, jwahn@cau.ac.kr

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anxiety, depression, and a loss of freedom [7]. This is because parents of children with neurodevelopmental disorders experience more significant stress than those of children with other disabilities, due to the lack of services available to meet the needs of their children when they become adults, making them feel that they have a lifelong responsibility as parents [8].

Maladaptive and atypical behaviors frequently seen in children with neurodevelopmental disorders cause parenting stress and depression, both of which are negatively associated with parenting competency [9,10]. Studies on interventions for parents of these children indicated that techniques such as skills training, parenting education, and parenting coaching could provide parents with knowledge, with parent-led interventions enhancing parenting competence and self-efficacy; these interventions were found to help parents' psychological well-being and mitigate their caregiving burden [11,12]. Specifically, parenting interventions for parents of children with neurodevelopmental disorders were effective in lowering caregiving stress and improving parenting competence [13,14]. Since parents of children with neurodevelopmental disorders were found to experience more parenting burden than those of children with other disabilities [15,16], it is crucial to rigorously diagnose childcare problems and provide tailored assistance to meet the specific needs of these families.

Communication is a bidirectional process of building and maintaining relationships among family members through symbolic interactions that create and share meaning [17]. The quality and intimacy of parent-child relationships are developed through communication [18]. Specifically, effective communication can alleviate the parenting burden for parents of children with disabilities, acting as an important factor affecting parent-child relationships [19]. Indeed, a previous study showed that parents of children with neurodevelopmental disorder face difficulties when interacting with their children [20]. Parent–child interaction and communication skills are important factors influencing the outcomes of parent-training programs [21]. Thus, interventions emphasizing parent–child communication may have positive implications for the development of children [20].

Jacob Moreno first developed sociodrama, a deep action method using group relationships, in 1953. Alongside research on sociodrama interventions for families in vulnerable situations [22], this method is used as an intervention in other scenarios, for example, as a teaching method to enhance the communication skills of healthcare personnel, including oncologists [23], those caring for terminal patients and intensive care unit doctors [24]. Sociodrama can facilitate the learning of roles, ideas, concepts, and behaviors through socioeducational experiences [25]. In the field of nursing, sociodrama has been applied in two ways. Sociodrama has been used as a psycho-pedagogical method in nursing education [26,27] by facilitating learning engagement [27]. In addition, it has been implemented as a therapeutic method [28,29]. These methods are in line with two types of sociodrama: one for educational purposes in a learning group and one for therapeutic purposes in a client group [25]. The sociodramatist should understand the psychological and pedagogical context when working with individuals [25]; in this regard, a nurse can be the right person to conduct sociodrama as a psycho-pedagogical method in nursing education or as a therapeutic method in clinical settings.

Sociodrama helps participants experience emotional liberation and catharsis by developing a better understanding of themselves, their circumstances, and the roles of others in those circumstances, further encouraging them to express their feelings [30]. When prioritizing the mental health of teen mothers, SmithBattle et al. (2017) emphasized the importance of interventions to alleviate their psychological distress and tested the effects of behavioral group therapy to train them in life skills [31]. Similarly, in one study using sociodrama with mothers of students with special needs [28], sociodrama was effective in lowering parenting stress and improving parenting self-efficacy. In the last 20 years, most intervention studies that have aimed to enhance the interactions of parents, teachers, and caregivers of children with developmental disorders [32], have used didactic instruction, video monitoring/modeling, group debate, feedback, and coaching. Interventions can be more effective when they include realistic scenarios [22,30]; however, in previous studies, reflecting the actual situation was not sufficient, and interventions targeting parents of children with neurodevelopmental disorders were extremely rare.

Comprehensively examining the results of previous studies, parent–child communication can affect the parenting burden and parent-training program's effectiveness [19,21]. In addition, sociodrama is known to alleviate the parenting burden and improve parent–child communication as well as parenting competence by facilitating the learning of roles and behaviors [25,28]. Thus, to mitigate the parenting burden and enhance communication skills and parenting competence among parents of children with neurodevelopmental disorders, there is a need to develop and implement sociodrama-based intervention programs that are tailored to the difficulties experienced by this group, including elements of their personal situations. Therefore, the objective of this study was to develop a sociodrama-based program to enhance communication (SCEP) for parents of children with neurodevelopmental disorders, and investigate the effects of this program on caregiving burden, parent-child communication, and parenting competence. The hypotheses of this study were as follows:

H1. The parenting burden within the experimental group will be significantly decreased after the SCEP when compared to that in the control group.

H2. The parent–child communication in the experimental group will be significantly improved after the SCEP when compared to that in the control group.

H3. The parenting competence in the experimental group will be significantly improved after the SCEP when compared to that in the control group.

Methods

Design

This study used a non-randomized controlled experimental pretest-posttest design. The Transparent Reporting of Evaluations with Non-randomized Designs guidelines were followed throughout the manuscript [33].

Participants and data collection

The participants were the mothers of students with neurodevelopmental disorders (ID, ASD, and ADHD) living in A— City (a major city located to the north of the Korean capital city, with a population of 460,000), South Korea. With the cooperation of the A— City Office of the Education's Institute for Special Education, the parents of students with special needs were notified of the program's contents, aims, and procedures, and individuals who consented to participate were included in the study. Data collection was performed between September 28 and November 10, 2017. According to the research assistant's instructions, the participants completed self-reported questionnaires both on the first day of the study and after six weeks. The participants were non-randomly allocated to the experimental and control groups. To minimize potential bias induced due to non-randomization, we first matched

individuals according to their key general characteristics: (1) for parents: age, level of education, household income; (2) for children: sex, disability type, presence of multiple disabilities, severity of disability. After the process of matching, the two decided groups were randomly assigned to the experimental and control groups, respectively.

Participants were selected according to the following inclusion criteria: (1) being primary caregivers of children with neurodevelopmental disorders and (2) being well literate. According to a longitudinal study following up participants from the age of six to adulthood [34], the deep-seated nature of neurodevelopmental disorders persists from childhood into adulthood. Therefore, we did not restrict the age range of the children during recruitment. The exclusion criteria were (1) individuals with restricted movement and (2) primary caregivers of children with impairments other than neurodevelopmental disorders.

Using G*Power 3.1.9.7 with conditions of F-test, analysis of variance, repeated measures, and within-between interaction (effect size f = 0.30, power = 0.90, $\alpha = .05$) [35], both groups required 32 participants. Considering a potential dropout rate of 20.0%, a total of 40 participants were enrolled, with 20 participants each in the experimental and control groups. Four participants from the experimental group and two from the control group dropped out immediately after registration due to personal scheduling issues, resulting in 16 and 18 participants in the experimental and control groups, respectively, for the final analysis (Figure 1).

The sociodrama-based communication enhancement program

The control group received nursing intervention as usual, consisting of counseling and psycho-education. The experimental group received usual care except for the SCEP, which happened once a week for six weeks. The SCEP was initially based on the nonviolent communication model (NVC) [36] and previous literature that used sociodrama with mothers of students with special educational needs [28]. However, in a previous study, parents of children with physical disability and emotional disturbance were also included as participants [28]. The SCEP was developed specifically to reflect the parent–child communication needs based on interviews with three parents of children with neurodevelopmental disorders. Thus, this pilot study served to develop the most significant tailored nursing intervention for parents raising children with neurodevelopmental disorders and finalize it, confirming the applicability of this program as an effective nursing intervention. To verify the validity of the program, a panel of two experts from the Korean Association for Psychodrama and Sociodrama, two mental health nursing professors, one counseling expert, and one school counselor from an Institute for Special Education reviewed and modified it, after which the content validity of the final program was analyzed.

The study authors have been teaching mental health nursing and communication at a college of nursing for the past few years. Author 2 is particularly an expert in sociodrama as she has received

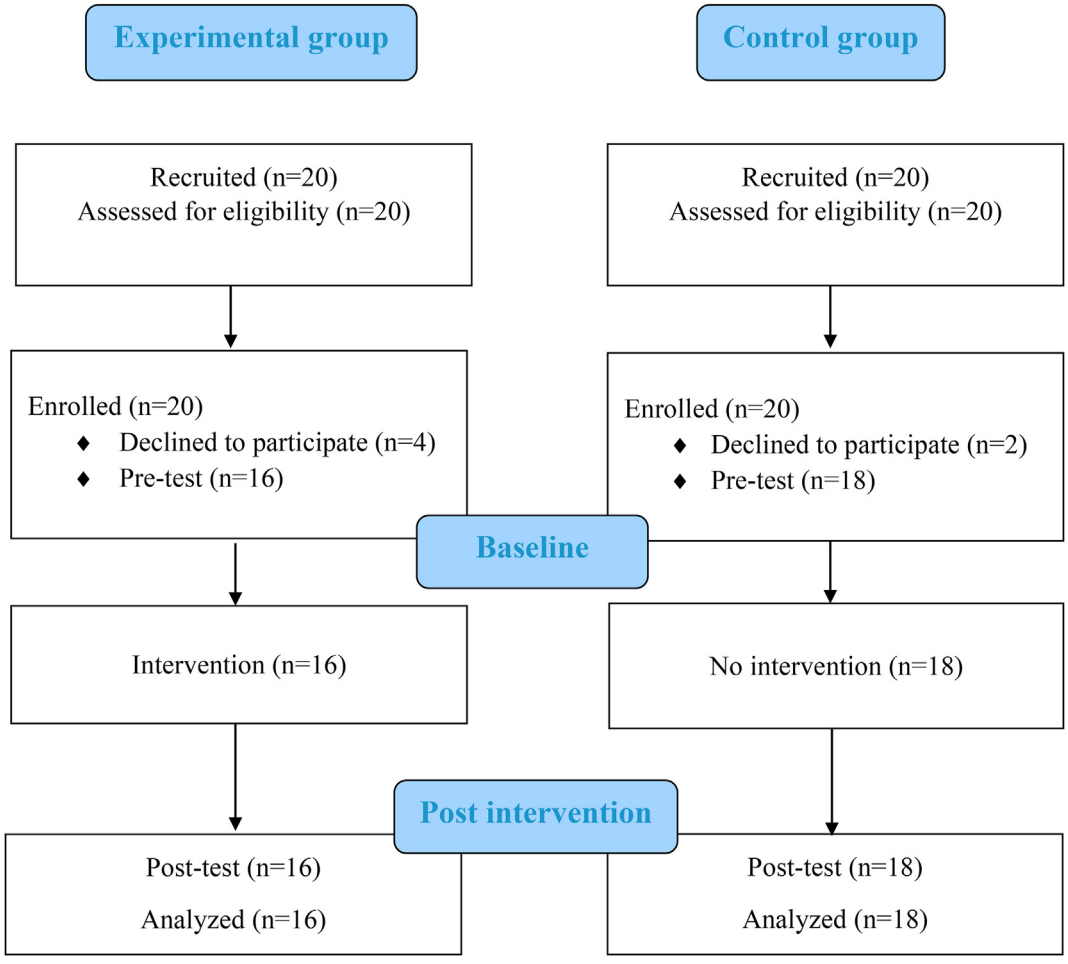

Figure 1. Flow chart of the participants' recruitment and participation.

over 500 hours of professional education as a member of the Korean Association for Psychodrama and Sociodrama, having conducted sociodrama programs for over seven years. For intervention adherence and fidelity, one of the researchers (author 2) administered the program for 150 minutes per session, with one session per week, for six sessions in a seminar room. The interventions were delivered through group sessions and the group size comprised 16 participants altogether.

The program composition enabled participants to understand and learn observations, feelings, needs, and requests—the four components of the NVC model [36]. In addition, sociodrama was used to encourage participants to express their emotions, recognize parent-child needs, and practice the communication skills they had learned. The sociodrama process consisted of warming up, enactment, and sharing phases. After determining common topics related to communication difficulties with the participants' children with disabilities, a scenario was chosen. During the enactment phase, participants voluntarily adopted a role and were instructed to express their emotions and solve the problem through their behaviors. In the sharing phase, participants could share their emotions with each other. The drama process was improvised based on spontaneous interactions among the participants.

The first session focused on building motivation for the program, as well as trust and intimacy among the participants. The second session focused on identifying the needs of the participants and their children in conflicting situations. The third and fourth sessions encouraged participants to differentiate between their thoughts and feelings and understand and empathize with their own needs and those of their children and families. The fifth session encouraged participants to communicate compassionately by reaffirming the meaning of family and value of existence. The sixth session encouraged participants to find true happiness and meaning in life by using the technique of "family sculpting." Participants were asked to complete a questionnaire before and after the program. Those who attended all six sessions were awarded a

Table 1 *Sociodrama-based Communication Enhancement Program.*

Session	Themes	Goals	Contents
1	Opening mind	To motivate participation and build intimacy and trust among group members	1. Program orientation and lecture (60 min) 2. Sociodrama 1) Warming up (20 min) 2) Sociodrama enactment (50 min) - Practice in generic scenarios (role reversal) 3) Sharing (20 min)
2	Resolving Conflict	To explore each other's needs	1. Life sharing (20 min) 2. Lecture on anger and needs (30 min) 3. Sociodrama 1) Warming up (15 min) 2) Sociodrama enactment (60 min) - Conflict situations with family members (child) (doubling, voices, role reversal, soliloquy) - Finding own and child's needs in a conflict scenario (15 min) 3) Sharing feelings and evaluation (15 min)
3	Expressing myself	To distinguish thoughts and feelings	1. Life sharing (20 min) 2. Lecture on thoughts and feelings (30 min) 3. Sociodrama 1) Warming up (15 min) 2) Sociodrama enactment (60 min) - Problematic situations with family members (spouse) - Using communication skills to resolve problems (doubling, voices, role reversal, soliloquy) 3) Sharing feelings and evaluation (15 min)
4	Enhancing communication I	To practice empathetic listening and speaking	1. Life sharing (20 min) 2. Lecture on listening and speaking (30 min) 3. Sociodrama 1) Warming up (15 min) 2) Sociodrama enactment (60 min) - Child's problematic behavior - Understanding and empathizing with the needs of child/spouse/oneself (doubling, voices, role reversal, monologue) 3) Sharing feelings and evaluation (15 min)
5	Enhancing communication II	To practice sympathetic communication	1. Life sharing (20 min) 2. Lecture on sympathetic communication (30 min) 3. Sociodrama 1) Warming up (15 min) 2) Sociodrama enactment (60 min) - Connecting one's own needs and feelings with those of child - Applying empathic listening - Sculpting and reconstituting of the family 3) Sharing feelings and evaluation (15 min)
6	Building a happy family	To find the meaning of life and happiness	1. Life sharing (20 min) 2. Lecture on the meanings of life and happiness (30 min) 3. Sociodrama 1) Warming up (15 min) 2) Sociodrama enactment (60 min) - Family photo 3) Sharing feelings and evaluation (15 min)

certificate and took part in a graduation ceremony. Table 1 illustrates a summary of the themes, goals, and contents of each session in the program.

Measures

Parenting burden

The parenting burden scale comprises 28 questions regarding physical burden (five questions), emotional burden (seven questions), social burden (10 questions), and economic burden (six questions) [37]. Participants responded to each question on a scale of 1 ("Never") to 5 points ("Always"), with higher scores indicating higher parenting burden. In a study that measured the parenting burden of parents of children with neurodevelopmental disorders using the same instrument, the Cronbach's α was .95 [38], and it was .92 in the present study. Six professionals (two psychiatric-mental health advanced practice nurses, two professors in child health nursing, and two professors in mental health nursing) verified the content validity. The scale-level content validity index (S-CVI)/average for each item was .97, and the S-CVI/universal for each item was .82.

Parent–child communication

Communication ability was measured using the Parent–Adolescent Communication Scale [39]. It has two subscales: open communication (10 items) and problematic communication (10 items). Each item was rated on a self-report Likert scale from "Never" (1 point) to "Always" (5 points). While this scale was developed to measure parent-adolescent children communication, it has also been used in measuring parent-child communication [28,29]. Open communication refers to communication that enables family cohesion and adaptability to a functional level (i.e., clear and unambiguous messages, empathy, reflective listening, and supportive speech) [39]. In contrast, problematic communication refers to closed and dysfunctional communication, which does not occur smoothly due to reluctance in parent–child interaction, with an experience of more critical expressions [40]. Higher open communication scores indicate more positive parent-child communication in which the parent and child can interact freely and express their opinions. Higher problematic communication scores indicate more negative parent–child communication. The Cronbach's α was .88 at the time of development of the Korean version of the scale and .78 in the present study. Six professionals verified the content validity. The S-CVI/average for each item was .96, and the S-CVI/universal for each item was .85.

Parenting competence

Parenting competence was measured using the Parenting Sense of Competence scale [41]. It consists of 16 questions on parenting efficiency (nine questions) and parenting satisfaction (seven questions). Each question is scored on a Likert scale from 1 ("Strongly disagree") to 5 points ("Strongly agree"), with higher scores indicating better parenting competence. In terms of the instrument's reliability, Cronbach's α was .74–.76 in a recent study on the mothers of children with neurodevelopmental disorders [42] and .76 in the present study. Six professionals verified the content validity. The S-CVI/average for each item was .96, and the S-CVI/universal for each item was .81.

Ethical considerations

This study was approved by the institutional review board at the authors' affiliated institution (No. 1041078-201709-HRSB-175-01). The study protocol was registered at the Clinical Research Information Services (registration number: KCT0006412) and is available online. Before participation in the SCEP, participants who had received the program application and provided prior written consent, voluntarily consenting to participate, were selected. They were informed that they could withdraw from the study at any time, and that they would not experience any disadvantage as a result. In addition, the participants pledged to protect the privacy of all other participants to ensure that any knowledge gained during the program would remain private.

Data analysis

Data were analyzed using the IBM SPSS/WIN 26.0 Program. Pre-homogeneity between the experimental and control groups was analyzed using the chi-squared test, Fisher's exact test, and t-test. Based on the results of normality testing, parametric tests indicating normal distributions were used for communication ability and parenting self-efficacy, and non-parametric tests indicating non-normal distributions were used for parenting burden. The effects of group, time, and group-by-time interactions among the groups were verified using generalized estimating equations with an autoregressive correlation structure. Generalized estimating equations were used because our data were repeatedly measured, clustered, and correlated, but the generalized estimating equations approach did not assume the independence and homogeneity of variance [43]. To clarify effect size, Cohen's criteria [44,45] was adapted: Cohen's d = 0.2 (small), d = 0.5 (medium), and d = 0.8 (large).

Results

Homogeneity test of participants' general characteristics and dependent variables

In this study, all the participants were mothers, and the mean ages of mothers and children were 42.62 (SD 6.29) and 12.38 (4.26) years, respectively. As for the diagnosis of children, 61.8% had ID and the rest had ASD. Table 2 illustrates the results of the homogeneity tests for the general characteristics and dependent variables at pre-intervention between the experimental and control groups. There were no significant differences with respect to age, education level, income, gender of child, age of child, diagnosis of child, or severity of child's disease, and the two groups were comparable in terms of all dependent variables.

Verification of the effects of the SCEP

The effects of the SCEP were tested using generalized estimating equations. Table 3 and Figure 2 compare the parenting burden, parent–child communication, and parenting competence between the experimental and control groups pre-intervention, as well as the changes post-intervention.

Parenting burden

The experimental group that participated in the program exhibited a significant reduction in parenting burden compared to that in the control group, supporting hypothesis 1. As revealed in the generalized estimating equations analysis results in Table 3, the main effects of group and time were not significant, but the group × time interaction effect was significant (Wald's test = 4.90, p = .027). The analysis showed that the parenting burden of the experimental group decreased significantly more (−.25 − .04 = −.29, i.e., a decrease by .29 points) than that of the

Table 2 *Homogeneity Test of General Characteristics (N = 34).*

Characteristics	Categories	Exp. (n = 16)	Cont. (n = 18)	χ^2 or t	*p*
		n (%) or M ± SD	n (%) or M ± SD		
Age (years)		42.56 ± 5.10	42.67 ± 7.34	0.05	.962
Level of education	≤ High school	10 (62.5)	13 (72.2)	3.66	.545
	≥ College	6 (37.5)	5 (27.8)		
Income of household[a]	Low	8 (50.0)	9 (50.0)	0.17	>.999
	Average	5 (31.3)	6 (33.3)		
	High	3 (18.7)	3 (16.7)		
Gender of child	Men	11 (68.8)	9 (50.0)	1.23	.268
	Women	5 (31.2)	9 (50.0)		
Age of child (years)		12.31 ± 4.25	13.00 ± 3.38	0.53	.603
Type of disability	Autism spectrum disorder	7 (43.8)	6 (33.3)	0.39	.725
	Intellectual disability	9 (56.2)	12 (66.7)		
Multiple disabilities[a]	Yes	12 (75.0)	14 (77.8)	0.04	.849
	No	4 (25.0)	4 (22.2)		
Severity of disabilities[a]	Mild	4 (25.0)	4 (22.2)	0.62	.799
	Moderate	10 (62.5)	10 (55.6)		
	Severe	2 (12.5)	4 (22.2)		
Number of children without disabilities[a]	0	5 (31.2)	2 (11.1)	2.10	.349
	1	9 (56.2)	13 (72.2)		
	2	2 (12.6)	3 (16.7)		
Parenting burden		2.69 ± 0.57	2.71 ± 0.66	0.07	.945
Communication	Open communication	3.38 ± 0.64	3.18 ± 0.53	1.19	.233
	Problematic communication	2.66 ± 0.70	2.45 ± 0.63	1.07	.284
Parenting competence[b]		3.24 ± 0.35	3.03 ± 0.49	1.21	.226

Exp = Experimental group; Cont = Control group; SD = standard deviation
[a] Fisher's exact test,
[b] Mann-Whitney U test.

Table 3 *Effects of the Program on Family Burden, Communication, and Parenting Competence (N = 34).*

95% Wald CI							
	B	SE	Lower	Upper	Wald χ^2	*p*	ES (d)
Parenting burden							0.32
Group[a]							
Exp	−0.02	0.20	−0.42	0.38	0.01	.930	
Time[a]							
Baseline	0	0					
Post intervention	0.04	0.08	−0.13	0.20	0.22	.637	
Interaction of group and time[a]							
Baseline	0	0					
Post intervention	−0.25	0.11	−0.48	−0.03	4.90	.027	
Open communication							0.98
Group[a]							
Exp	0.20	0.20	−0.18	0.59	1.06	.302	
Time[a]							
Baseline	0	0					
Post intervention	−0.08	0.06	−0.21	0.04	1.81	.179	
Interaction of group and time[a]							
Baseline	0	0					
Post intervention	0.35	0.13	0.10	0.61	7.32	.007	
Problematic communication							0.01
Group[a]							
Exp	0.21	0.22	−0.22	0.65	-.92	.337	
Time[†]							
Baseline	0	0					
Post intervention	0.11	0.08	−0.05	0.27	1.80	.179	
Interaction of group and time[a]							
Baseline	0	0					
Post intervention	−0.21	0.13	−0.46	0.05	2.58	.108	
Parenting competence							0.95
Group[a]							
Exp	0.21	0.14	−0.07	0.48	2.18	.140	
Time[a]							
Baseline	0	0					
Post intervention	−0.06	0.05	−0.15	0.03	1.80	.180	
Interaction of group and time[a]							
Baseline	0	0					
Post intervention	0.21	0.09	0.02	0.39	4.91	.027	

Exp: Experimental group, ES: effect size (Cohen's d), p value: generalized estimating equations model adjusted for covariates.
[a] Reference: control group for group effect; baseline values for time effect; and baseline values of control group for interactions.

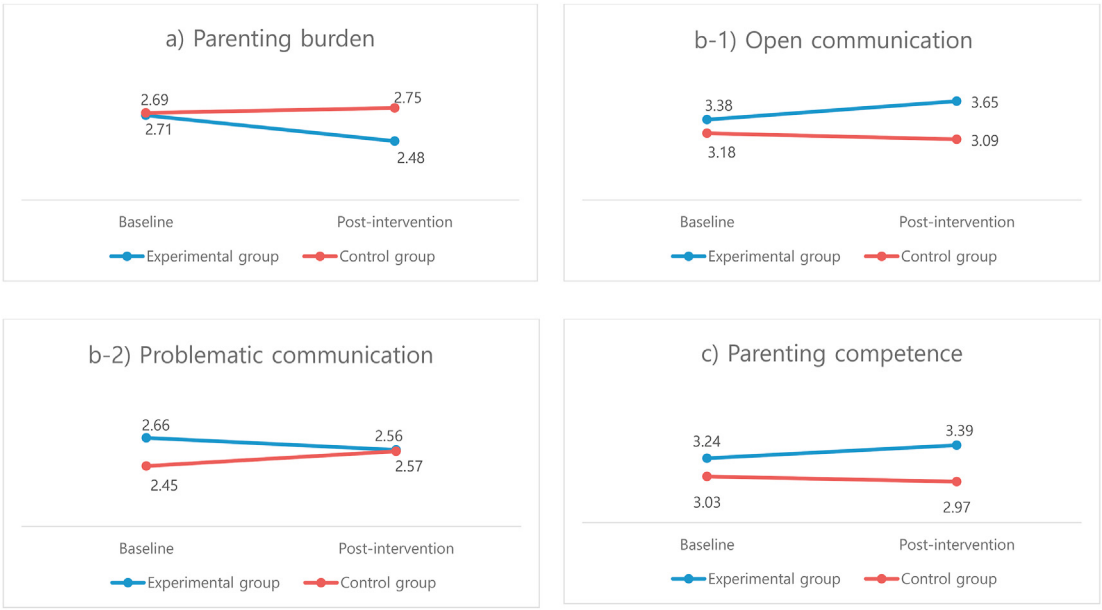

Figure 2. Outcome changes in group comparison; effect of the program on (**a**) parenting burden, (**b**-1) open communication, (**b**-2) problematic communication, and (**c**) parenting competence. The estimated mean is shown.

control group (i.e., an increase by .04 points). This difference in change reflected a small effect size (Cohen's d = .32).

Parent–child communication

The experimental group exhibited a significant increase in open communication scores between the parent and child compared to the scores for the control group. As revealed in the generalized estimating equations analysis results in Table 3, the main effects of group and time were not significant, but the group × time interaction effect was significant (Wald's test = 7.32, $p = .007$). The analysis showed that open communication of the experimental group improved significantly more [.35 − (−.08) = .43; i.e., an increase of .43 points] than did that of the control group (i.e., a decrease of .08 points). The effect size was .98, indicating a large effect. Although the experimental group exhibited a decrease (−.21 − 0.11 = −.32; i.e., a decrease of .32 points) in problematic communication compared to that in the control group, the difference was not significant (Wald's test = 2.58, $p = .108$); therefore, hypothesis 2 was partially supported in that the SCEP could improve the parent–child communication solely in terms of open communication.

Parenting competence

The experimental group exhibited a significant increase in parenting competence scores compared to the scores for the control group, supporting hypothesis 3. As revealed in the generalized estimating equations analysis results in Table 3, the main effects of group and time were not significant, but the group × time interaction effect was significant (Wald's test = 4.91, $p = .027$). The analysis showed that the parenting competence of the experimental group improved significantly more [.21 − (− .06) = .26; i.e., an increase of .26 points) than did that of the control group (i.e., a decrease of .06 points). The effect size was .95, indicating a large effect.

Discussion

In the present study, an SCEP was implemented for the primary caregivers of children with neurodevelopmental disorders, and the effects of the program were analyzed. This sociodrama-based communication enhancement program was tailored to reduce parenting burden and enhance communication and parenting competence, which comprise the biggest problems for parents of children with neurodevelopmental disorders. In the group sociodrama sessions, based on the NVC model of Rosenberg and Eisler (2003) [36], the participants observed each other; expressed their needs, feelings, and requests in the corresponding phases; and learned to understand and express their conflicts as a caregiver.

After the SCEP, participants exhibited a significant decrease in parenting burden (effect size, Cohen's d = .32). Although no previous study has indicated the direct effects of a sociodrama intervention on overall parenting burden, sociodrama was effective in reducing depression in a study on the mothers of students receiving special needs education [28], encouraging participants to perceive, control, and express their own anxiety [46]. Similarly, sociodrama was efficient in alleviating parents' negative emotions, such as anger, anxiety, and sadness, in a study on the parents of patients with schizophrenia [47]. In a study on the mothers of children with neurodevelopmental disorders, an action methods-based program reduced the mothers' anxiety and depression [31], and informal support from people in their surroundings reduced parenting burden for the parents of children with neurodevelopmental disorders [7]. Given that Robinson et al. (2016) claim that psychological distress, such as anxiety and depression, is included in the properties of parenting burden [7], the results of the present study can be considered consistent with those of previous studies. The SCEP was administered as part of a parent-focused planning approach. In line with previous research [48], this program was able to help participants unload their parenting burden by encouraging them to express their emotions and difficulties verbally, thereby sharing their experiences with other parents. The fact that the participants were all caregivers of children with developmental disorders stimulated interactions within the group, providing an outlet for them to share real-life experiences [49], thereby alleviating their parenting burden. These findings were also partially supported by a study in which informal support, rather than formal support from the government, was effective in reducing parenting burden for parents of children with neurodevelopmental disorders [7].

The SCEP was also found to be effective for developing communication ability (in particular, the open communication) in parents of children with neurodevelopmental disorders. Parents of children with developmental disorders have extremely diverse and complex communication needs because they experience many interaction-related difficulties while performing various roles throughout their lives, such as supporting their child's communication development, effectively fulfilling their role as parents, and helping their child form social relationships [18,21]. Since communication education consists more of observation and feedback than lecture-based instruction, it is essential to encourage and assist learners to find their own solutions through interactions within a group [50]. Family-mediated communication programs enhance open communication, and unimpeded communication within the family enhances children's communication development, self-esteem, problem-solving ability, and stress management, reducing behavioral and emotional problems in parents of children with ASD [51,52]. In one prospective longitudinal study [53], an intervention conducted with primary caregivers of children with neurodevelopmental disorders resulted in an improvement in the children's long-term language outcomes through the caregivers being more responsive during their communication with them. Furthermore, parenting interventions have been found to increase maternal synchronization with the child's speech or behavior, improve the child's expressive language [52], and increase attachment behaviors [35].

The upbeat ambience created by interventions using action methods, including sociodrama, assists individuals in achieving self-reflection during group programs, helping them become more aware of problems [49]. Similarly, the SCEP may have been effective since sociodrama was used to develop communication skills by helping parents specifically express needs and recognize their children's needs in situations of conflict, differentiate between thoughts and feelings, and listen effectively. Therefore, the authors believe that programs using sociodrama can enhance patient–child communication, ultimately helping children with neurodevelopmental disorders adapt to life situations. In terms of future long-term care plans for individuals with neurodevelopmental disorders, one might consider expanding the scope of participants beyond mothers being the only primary caregivers, by including fathers and siblings, to promote cooperation with the primary caregiver's perspective rather than the overseer's perspective [54].

The parenting competence scores of the participants in this study were slightly lower than those reported in previous studies for mothers or both parents of children with developmental disorders [42,55,56] and slightly higher than those reported for parents of typically developing children [54,57]. The SCEP was found to be effective in improving the parenting competence of parents of children with neurodevelopmental disorders. This was because the SCEP was based on sociodrama, which is known to alleviate parenting burden by facilitating the learning of roles and behaviors [25]. This is consistent with the results of a previous study that reported a significant increase in parenting self-efficacy after a sociodrama intervention for the mothers of adolescents receiving special needs education [28].

In a previous study [15], parenting competence was analyzed in parents of children with various disabilities and parents of children with ID showed far lower parenting competence than those of children with other disabilities. Among the participants in the present study, there was a high proportion of parents of children with ID. Thus, if SCEPs are tailored for parents of children with ID and actively utilized in intervention strategies for mental health nursing practice, they could help improve the particularly low parenting competence observed in this population.

Nevertheless, this study had several limitations. Although Nawalana et al. (2020) reported differences in parenting efficiency depending on the extent of the child's disability [15], this could not be incorporated in the current study. In future studies, we propose that participants should be divided into groups based on the severity of their disability to enable enhanced individualized care. In this study, all the participants included mothers as primary caregivers. This reflected the tendency of mothers to be the primary caregivers for children in Korea. In addition, the present study was conducted in a single large city in South Korea and, as it was a non-randomized controlled trial, there was a possibility of selection bias. Besides, there were no participants who were the parents of children with ADHD in this study. Therefore, the generalizability of our results is limited. Finally, owing to the small sample size in our study, it was not feasible to compare effects depending on the children's level of development. In future studies on parents of children with neurodevelopmental disorders, randomized controlled trials and longitudinal studies should be performed to overcome these limitations. We also propose intervention studies that differentiate between participants based on their child's level of development. Through continuous parenting interventions such as SCEPs, an improvement in expressive language and increase in attachment behaviors of children with neurodevelopmental disabilities could be expected. Studies to confirm long-term outcomes are encouraged.

Conclusion

As the number of children diagnosed with neurodevelopmental disorders increases so does the demand for mental health nurses to conduct interventions for these children and their parents. Our findings indicate that SCEPs that alleviate the parenting burden, and enhance parent–child communication and parenting competence, should be applied in mental health nursing environments. These findings suggest that sociodrama-based programs may be an effective intervention strategy for parents of children with neurodevelopmental disorders.

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Ethical approval

The study was conducted according to the guidelines of the Declaration of Helsinki and approved by the Institutional Review Board of Chung-Ang University (Approval No. 1041078-201709-HRSB-175-01). The study protocol was registered at the Clinical Research Information Services (registration number: KCT0006412) and is available online.

Data availability statement

The data presented in this study are available on request from the corresponding author and with permission of the Institutional Review Board of Chung-Ang University.

Conflict of interest

The authors had no conflicts of interest to disclose.

Author contributions

Conceptualization, S.J.J., J.H, M.H.B, J.A.; methodology, S.J.J. and J.A; formal analysis, S.J.J. and J.A.; investigation, J.H. and S.J.J.; data curation, S.J.J. and J.A.; writing—original draft preparation, S.J.J., J.H, M.H.B, and J.A.; writing—review and editing, S.J.J. and J.A.; project administration, J.H, M.H.B, and J.A; All authors have read and agreed to the published version of the manuscript.

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