Original Article

Development and Evaluation of Passion Continuation Program based on GRIT Theory for Nurses in COVID-19 Pandemic: A Non-Randomized Experimental Study

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Purpose: This study aimed to examine the effects of a GRIT theory-based program on GRIT, emotional labor, and job crafting among nurses at nursing hospitals. Methods: The program was developed based on GRIT theory and designed for nurses at nursing hospitals during the COVID-19 pandemic. To test the effects of the program on GRIT, emotional labor, and job crafting, the study was conducted as a quasi-experimental design with a non-equivalent control group. From April 25 to May 22, 2022, a total of 40 nurses in nursing hospitals participated in the program for 25 minutes per session, twice a week for 4 weeks. The collected data were analyzed using SPSS 24.0. Results: The program increased GRIT (F=8.55, p=.006) and job crafting (F=13.48, p=.002) among nurses at nursing hospitals, but had no significant effect on the level of emotional labor (F=0.64, p=.427). Conclusion: The GRIT theory-based program analyzed in this study was effective in enhancing GRIT and job crafting of nurses at nursing hospitals and is expected to have a positive influence on nurses' active and passionate working environment.

Key Words: COVID-19; Emotions; Job Satisfaction; Nurses; Pandemics

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INTRODUCTION

World Health Organization announced the coronavirus disease 2019 (COVID-19), which had been developed by SARS-CoV-2 virus in December 2019 and rapidly spread over the world as a new infectious disease, as the pandemic in March 2020[1]. The anxiety or fear that anyone or his or her family may be infected, worrying about isolation and restriction of outing, experiences of communication breakdown, lymphopenia, economic depression and discomfort on the economic crisis caused ‘corona blue’ [2]. The COVID-19 pandemic affected the overall society with the fear of continuing and prolonged new infectious disease upon emergence of diagnosed patients and the dead.

Initially, COVID-19 spread very rapid unlike existing infectious diseases demonstrating the crisis situation due to asymptomatic transmitters and mutated viruses [1]. Under the crisis situation, South Korea was evaluated to be relatively well managed by the foreign press thanks to the matured citizenship as well as strict quarantine system including social distancing, drive through tests, active tests, tracking moving lines of diagnosed patients, and so on [3]. In addition, the devotion and contribution of healthcare professionals were necessary to overcome the pandemic situation at the front line, and especially the Korean nurses performed their duties of nursing and quarantine silently enough to touch the heart of the whole country [4].

Upon prolonged pandemic situation that cannot predict the end, nurses experienced physical exhaustion and psychological stress with lack of human resources in the medical field, frequently changing guidelines to cope with the infectious disease, insufficient medical supplies, poor environment, and unexpected uneasy situation [3,5]. A report revealed that the nursing job, one of the most demanding and overburdened occupations due to the explosively increased workload in the infectious disease control, had shown deepened stress from excessive work, professional sense of duty, and responsibility at the front line [2]. In particular, nurses not only play a role to cooperate and modulate with doctors, peer nurses, and other functions due to the nature of the tasks, but also interact with the patients and their guardians face-to-face so frequently. They experience the emotional labor to control their emotions continuously upon bearing negative feelings [6].

In case of immunocompromised patients against COVID-19, the entries of their guardians and caregivers were restricted, which in return caused nurses should take care of those patients. Hence, nurses should take more time for direct nursing and bear the additional tasks such as the requests from guardians who cannot visit, strict infection control, and so on [3], experiencing emotional labor more frequently [7]. Therefore, it is important not to take nurses’ dedication for granted or overlook their emotional labors that the prolonged COVID-19 pandemic has taken on them. Timely measures and plans to control them are required on their emotional labor with more interest.

On the other hand, the applications and joining of nurses who were full of passion to eliminate COVID-19 were remarkable, yet, their passion might be declined while they had a hard time to eliminate the disease which hardly estimate its end. ‘Sustained motivation’ and ‘the capability combining passion with perseverance of hard work’ are required more than ever, and GRIT can be considered as an element to achieve these [8]. GRIT, an acronym of Growth, Resilience, Intrinsic Motivation, and Tenacity, is defined as ‘passion and perseverance for long-term goal’ [8]. As a way to develop grit, specific methods are presented in the sections of ‘clearing one’s interests’, ‘doing qualitatively different exercises’, ‘having a high sense of purpose’, and ‘standing up again, having hope’ [9]. GRIT does not mean ‘simply to maintain the effort thoughtlessly and adapt all the situations,’ but ‘to make an effort with sustained passion and achieve the goal ultimately’ upon using perseverance as the strength. Higher GRIT sets the long-term goal, achieves the detailed objectives to achieve the goal, and offers the motivation to maintain the effort even under the frustrated situation repeatedly [10].

GRIT includes both perseverance of effort and consistency of interests [10], and it is important to demonstrate job crafting, which is the concept that does not limit the job scope related to his or her function but change the scope as well as the relationship so as to modify the perception on the job, to enhance GRIT [11]. GRIT of nurses plays a significant role not only to perform additional tasks in the COVID-19 pandemic situation but also change their jobs actively to enhance the intrinsic motivation. Also, in the midst of the COVID-19 pandemic, which may not end anytime soon, nurses who are working in the clinical practices need to have the passion for positive endeavors in clinical settings and have job crafting that makes their work meaningful [12]. Studies on GRIT which has been recently empathized in nurses were conducted related to job satisfaction [13], retention intention [6,9,13,14,18], clinical practice ability [14], job engagement [9,19], burnout [15], emotional labor [6], work-life balance [16], nursing intention with job crafting [17], nursing organization culture, organizational health [18], career management behaviors [19], and organizational efficiency [20]; however, few intervention studies were conducted to enhance GRIT.

Moreover, the plans to enhance GRIT and job crafting
and lower emotional labor are required under the COVID-19 pandemic situation, yet, more detailed interest and management in nurses are necessary since the programs are not available or other training programs are reduced. Therefore, this study is aimed to apply the GRIT theory developing and utilizing the program for nurses and to deliver positive and hopeful messages so as for nurses to relieve the negative emotions and overcome the COVID-19 situation healthier.

The purpose of this study is to apply the ‘Passion Continuation Program’ based on GRIT theory (hereinafter ‘Passion Continuation Program’) and investigate its effects on GRIT, emotional labor, and job crafting after its application.

- **Hypothesis 1.** Experimental group that participates in the program based on GRIT theory will have higher GRIT score right after the completion of 4-week program and 4 weeks after the program completion than the control group that does not participate in the program.

- **Hypothesis 2.** Experimental group that participates in the program based on GRIT theory will have lower emotional labor score right after the completion of 4-week program and 4 weeks after the program completion than the control group that does not participate in the program.

- **Hypothesis 3.** Experimental group that participates in the program based on GRIT theory will have higher job crafting score right after the completion of 4-week program and 4 weeks after the program completion than the control group that does not participate in the program.

### METHODS

#### 1. Study Design

This is a quasi-experimental study to develop and apply the program based on GRIT theory among nurses working in nursing hospitals under the COVID-19 situation and to investigate the effects on nurses’ GRIT, emotional labor, and job crafting, with non-equivalent control group pre- and post-study design.

#### 2. Study Participants

The participants of this study were nurses in four nursing hospitals located in Gyeongnam Province. The study purpose and intention were informed to the heads of the institutions and the heads of the nursing departments, and after seeking cooperation and obtaining approval, the study details were announced using the recruitment notice to the nursing departments. Participants who were willing to participate were enrolled. After the study purpose and intention were informed, those who agreed to participate in the study were selected as the final participants. Nurses’ workload were raised upon the entry control of guardians and ordinary people in the nursing hospitals under the COVID-19 situation, and the nurses in the nursing hospitals were selected as the participants because they were classified as the vulnerable group to the infectious disease to be isolated for a long time with depressed atmosphere. The detailed inclusion criteria were 1) nurses who had served direct nursing from January 2020 before COVID-19 outbreak until the final data collection in this study; and 2) those who could attend at least 6 among 8 sessions of this program in case of the experimental group.

23 participants were selected for the experimental group and the control group, respectively, and there were no dropouts in Post-test 1, but in the second dropout, 3 participants were eliminated. The 3 dropouts from the experimental group did not attend the developed non-face-to-face program and did not conduct the survey, and the 3 dropouts from the control group contacted to respond to the survey, but replied that they could do it because they were “busy” (Figure 1).

G*Power 3.1.7 Program [21] was used. When the sample size was calculated in repeated measures ANOVA using the G power Program, 0.3, the medium efficacy size in the correlation analysis, was used for the correlation among timings. With the required efficacy size for repeated measures ANOVA, f=0.25 (medium), significance level ( α ) of .05, statistical power (1-β) of .80, number of groups 2, number of timings 3, and correlation among timings of .30, 19 persons were calculated per group. Considering 20% of drop-out rate, the samples sizes were selected as 23 for experimental group and 23 for control group. A total of 40 persons including 20 persons each for experimental and control groups were the final participants to be analyzed in this study after the program operation.

#### 3. Measurements

1) **GRIT**

Original GRIT Scale developed by Duckworth et al. [10] was modified by Park et al. [22] to the context of clinical nurses, upon permission from the authors. The tool consists of 14 items including three elements, ‘perseverance to achieve the long-term goal,’ ‘passion to be the nursing ex-
pert,’ and ‘patient-oriented intrinsic motivation.’ Each questionnaire consists of 5-point Likert scale representing higher GRIT and more passion and perseverance to achieve the long-term goal as the score is higher. Cronbach’s $\alpha$ was .82 when the tool was originally developed and that in this study was .94.

2) Emotional labor

The tool for emotional labor developed with the participants of nurses by Hong [23] was used upon the approval of the author. The tool consists of 16 items with three elements; ‘efforts of professionals to control emotion,’ ‘subject-oriented emotion suppression,’ and ‘pretending emotion by norms.’ Each questionnaire consists of 5-point Likert scale representing higher emotional labor as the score is higher. Cronbach’s $\alpha$ was .94 when the tool was originally developed and that in this study was .77.

3) Job Crafting

Korean version of Job Crafting Scale (JCS) for nurses, which had been originally developed by Tims et al.[24] and modified and verified for validity and reliability by Lee et al.[25] to meet the practices of the Korean nurses. The tool was used in this study upon approval of the authors. The tool [25] consists of 20 items with four subscale, and each item consists of 5-point Likert scale representing higher job crafting as the score is higher. With respect to the reliability of the tool, Cronbach’s $\alpha$ are .91, .87, .83, and .87 for increase of structural job resources (5 items), for decrease of disturbing job demands (5 items), for increase of social job resources (5 items), and for increase of challenging job demands (5 items), respectively, with .93 for overall reliability. Cronbach’s $\alpha$ was .86 in this study.

4. Program Development Process

To develop the ‘Passion Continuation Program’, the study investigators organized the topics, goals, GRIT related elements, steps, and required time per session through literature reviews [8,11], and modified the program upon

![Figure 1. Flowchart of participants in this study.](image-url)
Table 1. Passion Continuation Program

<table>
<thead>
<tr>
<th>Session</th>
<th>Theme</th>
<th>Goal</th>
<th>GRIT-related elements</th>
<th>Step</th>
<th>Time (min)</th>
<th>Program content</th>
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<tbody>
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<td>1</td>
<td>Introduction Orientation</td>
<td>Understand the concept of GRIT and “open mind” about GRIT.</td>
<td>GRIT synthesis</td>
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<td>2</td>
<td>Introduction of program purpose</td>
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<td>GRIT concept</td>
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<td>Understanding “GRIT”</td>
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<td>Sharing individual expectations</td>
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<td>Ensuring interest</td>
<td>Find something that makes you happy, set your goals, and put them</td>
<td>Growth mindset</td>
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<td>Introduction to topics and goals</td>
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<td>Find your favorite interests/hobbies</td>
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<td>Find something that makes you happy and set your own goals</td>
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<td>IV 5 Read the action plan</td>
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<td>3</td>
<td>Motivate my dreams</td>
<td>Create a roadmap to achieve your dreams and motivate them.</td>
<td>Intrinsic motivation</td>
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<td>Introduction to topics and goals</td>
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<td>10 questions to make your dreams come true</td>
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<td>What i have to do for my dream</td>
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<td>IV 5 Roadmap announcement</td>
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<td>Development Qualitatively</td>
<td>Qualitatively different conscious exercises can be performed to link</td>
<td>Tenacity</td>
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<td>Introduction to topics and goals</td>
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<td>different practice</td>
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<td>Writing a “Perseverance Vision Statement”</td>
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<td>Having a strong sense of</td>
<td>Understand that you can overcome obstacles with conscious practice</td>
<td>Growth mindset</td>
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<td>IV 5 Real life use</td>
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<td>Having hope</td>
<td>Hope can induce the concept of hope and the will to strengthen one’s</td>
<td>Resilience</td>
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<td>Closing Have positive</td>
<td>Have the resilience to form positive thoughts for taking on a new</td>
<td>Resilience</td>
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<td>IV 5 Strategies to try again without fear of failure</td>
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<td>Further utilization of GRIT</td>
<td>You can check your changes due to GRIT and use GRIT as a nurse in</td>
<td>GRIT synthesis</td>
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<td>Introduction to topics and goals</td>
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<td>IV 5 Write a bucket list</td>
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*Step I: preparation stage; Step II: introduction stage; Step III: main stage; Step IV: final stage.*
the study of the program needs among nurses working in nursing hospitals and gathering expert opinions. Then, a pilot study was conducted applying the modified program to the nurses in nursing hospitals to review the appropriateness and sensitivity (Table 1).

1) Program organization based on previous studies

The program was organized upon literature review of the programs to enhance GRIT, and it was informed to the participants as ‘Passion Continuation Program’ (Table 1).

The program was prepared with 8 sessions for 4 weeks, twice a week, 25 minutes per session, and each session consisted of four steps; preparation step (2 minutes), introduction step (3 minutes), main step (15 minutes), and closing step (5 minutes). It was established with the contents; ‘ensuring interest’, ‘qualitatively different practice’, ‘having high sense of purpose’, ‘having hope’, and so on as ways to develop GRIT based on the topics of GRIT; Growth Mindset, Resilience, Intrinsic Motivation and Tenacity.

Initial sessions from the 1st to the 3rd session consist of the contents to understand GRIT which is the basis of the program, to check the goals of the participants based on this, and to motivate them. It was reported that those who had the sustained interest in their job for a long time showed excellent achievements and ‘ensuring interest’ should be set followed by its development to sustain something for a long time [8]. Therefore, the program was organized with understanding of GRIT and ‘opening mind’ for the first session, ‘ensuring interest’ for the second session, and ‘motivation my interest’ for the third session.

Mid-sessions from the 4th and 6th session consist of the contents; deliberate practice differently in terms of quality so as to achieve the goals, hope and resilience to be able to challenge even higher goals. At the fourth session, it was focused that ‘qualitatively different practice’ was required to lead from the goals to the performances. It dealt that expertise was established by deliberate practice for a long time and the goal could be set and corrected accurately by the feedback after concentrating on tiny part of the whole technologies intensively and performing them with all efforts [8]. At the fifth session, making ‘high sense of purpose’ was tried. Higher goal is the interest in something and intention to contribute someone’s happiness, which is the source of matured passion [26]. To sustain the passion for a long time, altruism that is the desire to help others is required a lot in the relationship with others [8]. At the sixth session, ‘having hope’ was dealt. The students who had the growing mindset, a positive attitude to be able to develop all the times, showed higher GRIT. Hope to enhance GRIT is not thinking or feeling to be improved but determination for better future [8]. That means hope is related to mindset which can enhance his or her capability with efforts because only the hope that believes to enhance his or her capability by efforts ensures the goal and the effort and passion to achieve the goal can be sustained. Hence, mindset has recently attracted significant attention in the education field as the contents to enhance GRIT [26].

The 7th and 8th sessions as the closing sessions were prepared with the contents including practice of the plans to meet the sense of purpose, ‘maintaining positive mind to challenge again’ checking their changes by GRIT, and ‘further utilization of GRIT’ If optimists faced the hardship, they would consider the situation as to be transient and be able to overcome, while pessimists consider the situation to be hardly changed and tend to give up [10]. Therefore, the program was organized to be able to maintain the positive thinking, challenge again, and utilize GRIT during the work.

2) Study on the program needs among nurses in nursing hospitals

To investigate the program needs, the study was conducted with 9 nurses who were working in the nursing hospitals under the COVID-19 situation, informing them of the program topics, goals, GRIT related elements, steps, required time, contents, and so on.

For the questionnaire on whether the elements of ‘GRIT’ were well contained in the program, 88.9% of them answered ‘well contained’ with the reasons such as ‘may change the negative thinking into the positive one with stepwise approach,’ ‘the program is prepared to be able to practice them with positive mind and hope on the interest and objective goal,’ and so on. For the open questionnaire on whether you think GRIT will be enhanced after the program application, they answered, 1) ‘GRIT will be enhanced because it recalls the practice and goal to be able to sustain the passion and interest level continuously,’ 2) ‘seems to be motivated and have sense of purpose by GRIT elements,’ 3) ‘supplementation of the roles to develop positive mind and interest will be significantly helpful to enhance GRIT,’ 4) ‘can overcome emotional labor and boredom,’ and 5) ‘my effort is important but it will be the opportunity to look around, be motivated with positive energy, and check where I am to achieve the goal,’ and so on. For the open questionnaire on whether you think emotional labor will be declined, positive answers were more including ‘will minimize the emotional labor through lectures,’ ‘will be declined by positive mind,’ and so on. For the open questionnaire on whether you think job crafting
will be enhanced, they answered, ‘job crafting will be enhanced by the improved job satisfaction with positive message in each topic,’ ‘sense of purpose by the elements of capability, growth, and belief will be helpful to enhance job crafting,’ and so on. For the intention to take this program, 77.8% of them answered ‘yes.’ Regarding the required contents to be added in this program, two respondents answered, ‘would be good to share the experiences with other nurses.’ To apply the study outcomes, the program was supplemented to add the experiences and to be able to exchange them through reply on the posts at the non-contact platform for those who took the program.

3) Validity evaluation on the contents by experts

The investigators performed the planned program based on the standards of the content validity by Lynn [27]. With respect to the validity of the program contents and its quantification, content validity index (CVI) was applied. CVI, 4-point Likert scale, cannot be used for interim evaluation, which is desirable, consisting of 1 point with ‘not related,’ 2 point with ‘cannot evaluate the relationship or require amendment,’ 3 point with ‘related but require amendment,’ and 4 point with ‘very appropriate’ [27].

The desirable number of experts for the content validity was 3 to 10 [27], hence, expert validity was conducted through 4 nursing professors with more than 30 years of nursing education and nursing experience and program development experience. To evaluate the validity on the program contents or their relation by structured tools, the experts were advised to measure the validity on the topic, goal, GRIT elements, appropriateness of four steps including preparation, introduction, main, and closing, and time allocation for each session with 4-point Likert scale [27]. Since the experts’ validity evaluation should cover not only the evaluations on each item but also additional explanation on the exclusion and missing areas, the blank area for each session was provided to be able to describe any advice and opinion freely [27].

As a result, mean scores were over 3 points for each session. The described opinions were ‘better to add the advantages using GRIT’ at the 1st session, ‘expected to start hard because the contents are too many,’ at the 3rd session, ‘what set qualitatively different practice as perseverance was creative and effective,’ at the 4th session, ‘better to share and add the success and failure cases with resilience,’ and so on. Besides, there was a comment the contents of this program was appropriate. To apply the opinions of experts on the validity, the investigators modified the program through the meetings.

4) Pilot study to investigate the program appropriateness and sensitivity

To enhance the program appropriateness and sensitivity, a pilot study was conducted with 5 persons of the experimental group and 5 persons of the control group that met the subject selection criteria. In the pilot study, the participants took one session in the initial (1st session), mid-term (4th session), and closing (8th session), respectively. The experimental group expressed their opinions, ‘good to take the program by non-contact way which was not difficult,’ ‘good to have lectures by experienced nurses and professors in nursing departments,’ and ‘it was a positive program for nurses who coped with the COVID-19 situation,’ without negative opinion on the program.

5. Data Collection and Research Process

1) Allocation of experimental and control groups

For data collection, four nursing hospitals in Gyeongnam Province were randomly selected after the approval of Institutional Review Board (CSIRB-Y2021046) from Changshin University. The heads of the hospitals and the heads of nursing departments were informed of the study purpose and intention, and the recruitment notice was posted in the nursing departments upon their approvals. In the recruitment notice, the website of the program was posted. If they accessed the site using non-contact platforms such as cellphone or computer, the information would be provided containing the study purpose, securing anonymity, subject selection criteria, group allocation, program procedure, and so on. Only for those who wanted to participate in the program developed in this study voluntarily, they were guided to join the membership after the consent, and subject group allocation was performed by cross-matching since the degree of emotional labor of the participants was determined to be the important variable in the study. To exclude the intervention of the investigators during the selection process, the trained researcher conducted the process.

2) Study procedure

This study was conducted from April 21 to June 26, 2022. Pilot study, post-hoc research after the program application for 4 weeks, and follow up research for 4 weeks after the intervention were performed for the experimental group.

(1) Pilot study

Pilot study was conducted from April 21 to 23, 2022 for 3 days in the experimental group with structured ques-
tionnaires through the internet platform after receiving the consents. The study for the control group was conducted at the same dates with structured questionnaires.

(2) Intervention

The program was performed in the experimental group from April 25 to May 22 for 4 weeks. Attendance rate of the participants (%) was checked by learning management system upon allocation of personal ID and password, and they were allowed to take the program in a non-contact way by mobile or computer. The participants took the sessions twice a week for 4 weeks, 25 minutes per session, and allowed to share the questions and answers with other participants through the bulletin board.

(3) Post-hoc and follow up test

Post-hoc research was conducted from May 23 to 25 for 3 days after the completion of the program, and follow up research was performed from June 22 to 25 for 3 days, 4 weeks after that. The data provided to the experimental group were offered to the control group, if they wanted, and small gifts were provided to both experimental and control groups.

6. Ethical Considerations

This study was conducted upon review and approval of Institutional Review Board (CSIRB-Y2021046) in Changshin University before the test The participants were informed thoroughly on the purpose, period, process, expected risk and benefit of this study, and also informed that they could withdraw the study participation anytime without any disadvantage. Then, their voluntary consent forms were collected. To secure their anonymity and privacy of the participants, the collected data were coded and stored, and they will be discarded 3 years after the completion of the study.

7. Data Analysis

The collected data were analyzed according to the purpose of the study using SPSS 24.0 Program.

- General characteristics of the participants were analyzed with frequency, percentage, mean, and standard deviation.
- For the homogeneity on the general characteristics of the groups and study variables, they were analyzed with frequency, percentage, $\chi^2$ test, Fisher’s exact probability test, and independent t-test.
- Satisfaction of sphericity assumption was checked before performing repeated measures ANOVA.
- Mean, standard deviation, and repeated measures ANOVA were used for the tests of hypotheses.

RESULTS

1. Homogeneity Test

For general characteristics of two groups, homogeneity was confirmed on age, gender, religion, marital status, career, position, whether to serve shift-work, monthly salary, personality, and academic background (Table 2). The variables of this study including GRIT, emotional labor, and job crafting showed the homogeneity in both groups (Table 2). The normality test for the pre-scores of the experimental group and the control group was reviewed by the Shapiro-Wilk test.

2. Hypothesis Test

The results of the hypothesis test in this study are as follows (Table 3).

- **Hypothesis 1**: Upon repeated measures ANOVA for ‘GRIT score of the experimental group that participates in the ‘Passion Continuation Program’ will be increased right after the intervention and 4 weeks after compared to the control group that does not participate, ‘GRIT score of the experimental group was not changed significantly after the program, hence, the hypothesis was rejected ($F=8.55, p=.006$). Post hoc analyses revealed that no significant difference was found in the amount of change in GRIT score right after the intervention compared to that before the intervention ($t=-0.80, p=.722$). However, there was a significant difference in the amount of change in emotional labor four weeks after the intervention compared to that before the intervention ($t=-0.61, p=.002$) (Table 3).

- **Hypothesis 2**: For ‘emotional labor score of the experimental group that participates in the ‘Passion Continuation Program’ will be declined right after the intervention and 4 weeks after compared to the control group that does not participate, ‘emotional labor score of the experimental group was not changed significantly after the program, hence, the hypothesis was rejected ($F=0.64, p=.427$). Post hoc analysis revealed that no difference was found in the amount of change in the emotional labor score right after the intervention compared to that before the intervention ($t=-0.61, p=.002$) (Table 3).
Development and Evaluation of Passion Continuation Program based on GRIT Theory for Nurses in COVID-19 Pandemic

Hypothesis 3: Upon repeated measures ANOVA for 'the job crafting score of the experimental group that participates in the 'Passion Continuation Program' will be increased right after the intervention and 4 weeks after compared to the control group that does not participate,' significant differences were found on the interaction between the timing and group, 'hence, Hypothesis 3 was accepted (F=13.4, p=.002). Post hoc analyses revealed no significant difference was found in the amount of change in job crafting score right after the intervention compared to that before the intervention (t=-1.34, p=.190). There was also a significant difference in the amount of change in GRIT score four weeks after the intervention compared to that before the intervention (t=-2.16, p=.003) (Table 3).

**DISCUSSION**

This study was performed to develop the program based on GRIT theory under the COVID-19 situation with nurses in nursing hospitals and to investigate the program effects. The study results revealed that the 'Passion Continuation Program' enhanced GRIT and job crafting level of nurses in nursing hospitals, without significant effect on emo-
tional labor.

First, the experimental group that participated in the ‘Passion Continuation Program’ showed the increased GRIT score significantly right after the intervention and 4 weeks after compared to the control group that did not participate. The preliminary GRIT scores of the participants in this study were 4.16 and 3.83 points for the experimental group and the control group, respectively. Previous studies using the same GRIT measurement tool as this study found that general hospital nurses by Park and Cho [13] scored 3.05, new nurses by Ko and Gu [14] scored 3.18, clinical nurses by Jeong et al [9] scored 3.12, clinical nurses by Jeong and Jung [15] scored 3.11, and nurses by Lee and Shin [16] scored 3.05, which is lower than the study’s score of the experimental group. The preliminary GRIT scores of the participants in this study were 4.16 and 3.83 points for the experimental group and the control group, respectively. Posttest 2 - Pretest 1 showed lower GRIT scores than those in this study. Yet, in the validity analysis of Grit index [9], mean GRIT score was 3.0 among 16,000 adults in America representing bottom 20% level, and the GRIT level of nurses in general hospitals was reported to be lower than ordinary adults, while the score of the Korean nurses showed higher.

Those with higher GRIT try to achieve the goal seamlessly even under the situational changes, hence, enhancing GRIT requires to seek the plans for systemic human resource management within the organization and clinical field [15]. Also, nurses with high level of burnout and job stress under the unexpected situation require GRIT which is the feature not to give up but to move forward the long-term goal under the challenging situation [9].

Previous studies reported the correlation between GRIT and retention intention [9,13,14]. It is necessary to develop the program to enhance GRIT to prepare the case of greater manpower shortage due to the pandemic, and this program was determined to be performed timely. In addition, nurses themselves should set the long-term goal on the interest area to be able to raise the passion continuously and sustain the practices to be able to perform them successfully [13].

Multiple approaches and interventions are required to strengthen and enhance GRIT applying the characteristics of nurses’ GRIT.

GRIT means the passion and perseverance toward long-term goal [10] and nurses’ GRIT is very important under the pandemic situation that cannot predict the end. Under the pandemic situation that has been evaluating the competency in the public health area over the world, so called ‘K-quarantine’ made nurses in the field paid attention in the media, resulting in more passion [5]. An’s study that analyzed nurses’ images in the domestic daily newspapers during COVID-19 pandemic [4] revealed that number of
the articles related to nurses in the domestic newspapers had been increased since COVID-19 pandemic from January 2020 for 10 months. Most of the articles were positive to neutral, and about 75% of them was related to the contents that nurses took care of patients with sense of duty upon poor recognition compared to the workload.

Second, no significant difference of emotional labor score was found in the experimental group that participated in the 'Passion Continuation Program' compared to the control group right after the intervention and 4 weeks after. Previous studies using the same measurement tool of emotional labor as this study scored 3.49 and 3.6 by Lee and Kim [6] and Jeong and Kim [28], respectively. Choi and Kim [29] had a score of 3.34 measured after COVID-19 pandemic and this study had a score of 3.50, which is hard to discuss the difference in emotional labor due to COVID-19. Also, wearing protective under the infectious disease situation brings the anxiety to be possibly infected and physical burnout [3]. Occurrences of diagnosed patients and the dead in the unstable chaotic situation cause the fear [5], and increased heavy workload taking care of the works for guardians and caregivers who have limitation to enter the hospitals leads the fatigue [4]. This may explain why the emotional labor score was not declined though the program intervention was performed based on GRIT theory in this situation. Therefore, a variety of approaches to lessen nurses’ emotional labor are required even in the busy and urgent cases due to the pandemic situation. Also, nurses themselves need the efforts to control with relief of their emotional expression and should develop the atmosphere to consider and respect each other [28]. In terms of hospital system, it is necessary to organize the reasonable and fair hospital culture not to give penalty to nurses unilaterally. With respect to the national system, it should establish the workplace culture continuously through active improvements such as opening counseling centers for emotional labor to lower the frequency and intensity of the causal factors of emotional labor [28].

Third, the experimental group that participated in the 'Passion Continuation Program' showed significantly higher job crafting scores right after the intervention and 4 weeks after than the control group. In the previous studies, Lim and Park [17] modified Job Crafting Questionnaire (JCQ) developed by Slempt and Vella-Brodrick for office workers in multiple occupations, which is the Korean Version of Job Crafting Questionnaire (JCQ-K) to be used in this study, and it has 15 questionnaires with 6-point Likert scale [17-19]. Lim and Park [17] showed 3.87 points for nurses in the hospitals exclusive for patient with COVID-19; Cho and Kim [18] showed 3.82 points for nurses in the general hospitals; and Kwon and Lee [19] showed 4.40 points for nurses in the public institutions. In this study, JCS developed by Tims et al [24] was used after the validation of the content validity, organization validity, standard validity, and internal consistency with the domestic nurses, and it had a total of 20 questionnaires with 5-point Likert scale. It is difficult to compare with other studies because no study has been conducted with the job crafting tool used in this study, however, the baseline scores of job crafting in this study were 3.53 points out of 5 in the experimental group and 3.59 points out of 5 in the control group, which were higher than those in the previous studies considering a maximum of 6 points.

Lim and Park [17] reported in their study with nurses in the hospitals exclusive for patient with COVID-19 that job crafting made their job scope changed to be more meaningful, demonstrating positive correlation with nursing intention for the new infectious disease. In the careful works on infection prevention with high load, autonomy and delegation are empathized more, it is important to recognize the needs of changes on the threatening factors in the infection prevention environment, and job crafting makes the development of close collaboration with other departments and positive changes on the meaning of the job. Thus, it can be interpreted that nursing intention for the new infectious disease can be enhanced with job crafting that can motivate the nurses in the hospitals exclusive for patient with COVID-19 [17].

On the other hand, Kwon and Lee [19] reported higher scores than those in the study using the same job crafting tool. This is because nurses in the public institutions are in the horizontal environment rather than vertical one in the hospitals, and they do not perform the given works only under the voluntarily and independently developing working conditions but perform a variety of works actively such as civil complaint handling, review of medical service fee, health promotional works, and so on. Thus, the efforts to find the opportunity to perform creative and active nursing are required for nurses through the opportunities to be able to experience multiple works within their work scope.

In this study, the experimental group showed higher GRIT and job crafting after the program execution based on GRIT theory. This supports Hyun’s study [20] that more job crafting activities were activated as GRIT was higher. GRIT facilitates and activates job crafting activities of the members through job recognition, and positive and active boundary expansion in the related areas [20]. While individual intrinsic perseverance and passion are hard to generate the organizational efficiency, they may contribute to
enhance it such as job satisfaction, organizational commitment, and so on through the development of job crafting that can make the given work meaningful [20].

This study has the meaning to offer the motivation to nurses in the nursing hospitals to be able to overcome COVID-19 and to develop and apply the non-contact program for nurses’ psychological support although their psychological problems are expected under the COVID-19 situation that cannot predict its end when the program operation is difficult considering the multiple conditions including the nation, clinical field, and nurses.

Since the non-contact classes are performed without meeting participants, they have the benefits including no limitation on the place, learning what they are interested flexibly, and preparing the communication space among nurses with less anxiety against the infectious disease under the COVID-19 situation. This can be utilized when the time constraint exists such as infectious disease condition, shifting work, busy schedule, and so on, and further development of various programs are expected. Working condition and environment in nursing hospitals were poor under the COVID-19 pandemic situation with the role conflict issues, hence, turnover rate of nurses was reported to be relatively high [30], which supports the program was effective for nurses in nursing hospitals to enhance GRIT and job crafting.

To prepare the refined program based on evidence-based study theory under the COVID-19 situation, study on the needs, experts’ validity test, and a pilot study were conducted. GRIT theory has been applied and investigated on its effects with students and ordinary people while no intervention program has been conducted with nurses. Therefore, the development and utilization of this program would contribute the foundation of the studies to prove new theories. Yet, the data of this study were from the test after intervention with 40 nurses in nursing hospitals, hence, the representation of the sample has the limitation to require the caution for interpreting and generalizing the results. Also, it has another limitation that did not control the exogenous variables such as individual characteristics and training history during the verification of the program effects. Finally, further studies and programs are expected with the participants of domestic nurses when studies on GRIT and job crafting have been recently facilitated for nurses.

CONCLUSION

This study showed that the ‘Passion Continuation Program’ was effective to enhance GRIT and develop job crafting after the program application with nurses in nursing hospitals. GRIT and job crafting are passion positively and continuously changing the given job and his or her own competency to be appropriate, enthusiastically, which is the must element for the professionals, and related studies have been conducted in multiple occupations. To develop the program in this study, the contents were organized by literature review, they were modified upon the study on program needs and experts’ validity test, and appropriateness and sensitivity were reviewed by a pilot study. Therefore, it is considered to be the basic data for intervention program to be widely applied in the nursing practices in the future. Also, nurses in nursing hospitals were selected as the participants that were considered to be more vulnerable and challenging under the pandemic situation. It has the meaning to develop the program in a non-contact way and to prove the effects considering their time and personal situation. Based on the results of this study, we offer replication studies to be able to expand the program with GRIT theory and confirm its long-term effects. Also, we offer the qualitative studies to evaluate the effects in detail.

CONFLICTS OF INTEREST

The authors declared no conflict of interest.

AUTHORSHIP


DATA AVAILABILITY

The data that support the findings of this study are available from the corresponding author upon reasonable request.

REFERENCES


