

Managing Stress among Nursing Students Using Solution-Focused Brief Intervention: A Quasi-Experimental Trial

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ABSTRACT

The purpose of this study was to examine the effect of solution-focused brief intervention on stress among nursing students in Ilorin metropolis, Kwara State, Nigeria. The study was a quasi-experimental design of pretest-posttest only design. The sample of 30 participants was purposively selected from the population of 234 nursing students at the University of Ilorin Teaching Hospital (UITH) school complex, Maraba, Ilorin. A validated "Stress Questionnaire (SQ)" was used to measure the participants' level of stress, which has a Cronbach Alpha index of 0.88. The intervention was conducted within eight weeks based on different tasks scheduled on the solution-focused intervention. At the pretest state, the participants' stress level was measured to determine those that qualified for the treatment and their level of stress was measured at the posttest stage. The data collected was analysed using percentage for the demographic profile of the participants and Paired Sample t-test statistics to test the hypotheses at 0.05 level of significance. The SPSS version 23 software was used to perform the analyses. The results of the study revealed that solution-focused brief intervention has effect on physical component ($t = 11.57$; $p < .05$); behavioural component ($t = 16.75$ $p < .05$); and psychological component ($t = 10.85$; $p < .05$) of stress among the participants. The study concluded that solution-focused brief intervention is an effective strategy to combat physical, behavioural and psychological manifestations of stress. It was recommended that therapists should adopt solution-focused brief intervention on stress among nursing students.

Key Words: Managing stress, nursing students, solution-focused brief intervention, quasi-experimental trial

INTRODUCTION

Stress is a factor in two-thirds of all doctor visits based on the report by Melgosa (2006). Burnout and other illnesses like hypertension, diabetes, heart disease, stroke, and mental disorders are all possible consequences of stress. As a result, stress can take many different forms and affect people's health negatively regardless of their socioeconomic situation. Stress has been characterized by Cooper and Quick (2017) as the "spice of life and the kiss of death," which may be the case. Due to its combined effects from high academic demands, relationship difficulties, and other personal life stresses, stress has become an important topic in educational research and has long been a cankerworm in tertiary institutions.

According to Hoferichter et al. (2014), stress is a common occurrence at all phases of life and has a negative impact on students' personal, emotional, and physical health as well as their levels of learning and performance. Stress is particularly important throughout adolescence because the school setting is one of the most important environments in this stage of development and because stress is one of the sources of stress that adolescents most frequently identify (Kouzma & Kennedy, 2004).

Stress is a common issue for nursing students. Nursing students are more stressed than the general population and students in other health disciplines, according to studies (Jimenez et al., 2010; Simonelli-Munnoz et al., 2018). This is because they are subjected to more stress. Students who are under a lot of stress find it harder to think clearly and make good decisions, which lower their academic progress and consequently impact their health (Gu & Xie, 2018). Negative stress exposure prevents nursing students from benefiting from their education at the expected level and prevents them from developing into future qualified healthcare providers.

Shultz (2011) investigated the variables associated with stress in nursing students and reported that nursing students felt more stressed out during the academic year. Increased external stressors, such as more obligations and course requirements, led to higher levels of stress among nursing students. Further investigation revealed that the students had experienced detrimental effects from high levels of stress. Poor academic performance and burnout among nursing students may result from elevated stress levels and inadequate coping methods. More research is required on the techniques or coping mechanisms that nursing students might employ to manage stress.

Studies on the effects of stress on students, such as those by Hung and Care (2011) and Al-Sowygh (2013), have demonstrated that, depending on an individual's stress coping mechanisms, stress can be very detrimental to both physical and mental health. Physical, behavioural, or psychological issues may be the source of the symptoms or manifestations of stress. High cholesterol, hypertension, arthritis, ulcers, and heart illnesses are just a few of the medical issues that persistent stress can cause. A high degree of stress may lead to behaviours such as under- or overeating, increased smoking and alcohol usage, and drug misuse (Johnson et al, 2013). Psychological signs of stress include anger, anxiety, nervous tension, melancholy and boredom.

If stress is not effectively managed, more students may decide to drop out. Stress may have an impact on students' physical and psychological wellbeing even if they do not drop out (Christo & Pienaar, 2006). Therefore, it is necessary to design suitable counselling interventions to help nursing school students manage their stress. According to Shaban et al's (2012) research, many nursing students lacked coping mechanisms for all types of stress that were detected throughout the clinical training phase.

In this regard, the solution-focused brief intervention is seen to be beneficial for nursing students in dealing with stressful situations. The SFB technique arose from postmodern social constructivist theory (attribute to several theorists including Steve de Shazer and Insoo Kim Berg), whose approach is focused on a collaborative therapeutic relationship aimed at assisting clients in identifying and working toward their desired future. Researchers (Gingerich & Peterson, 2013; Ilbay & Akin, 2014) have also reported on the effectiveness of the Solution-Focused Brief therapy style in dealing with stress.

Statement of the Problem

One-third of student nurses experience stress severe enough to precipitate mental health issues such as anxiety and depression (Soares & Oliveira, 2013). Research by Freeburn and Sinclair (2009) indicates that stress diminishes nursing students' functionality and personal development, leading to feelings of powerlessness and impaired concentration. Physiological symptoms reported include chest pain, weight loss, fear, nausea, panic, insomnia, and increased alcohol use. Given that nursing education often exacerbates stress levels, the preparedness of future graduates to thrive in healthcare settings is in question. The correlation between stress and coping efficacy highlights the urgent need for research into counselling interventions that can equip nursing students to manage life's pressures effectively. Furthermore, the transition phases in education, typically linked to heightened stress, underscore the necessity of this study among second-year nursing students in Ilorin, particularly in light of the limited research on solution-focused brief interventions in this context.

Objectives of the Study

The objectives of the study were to examine:

1. The effect of solution-focused brief intervention on the physical component of stress among nursing students in Ilorin metropolis.
2. The effect of solution-focused brief intervention on the behavioural component of stress among nursing students in Ilorin metropolis.
3. The effect of solution-focused brief intervention on the psychological component of stress among nursing students in Ilorin metropolis.

Hypotheses

The following null hypotheses were tested:

H₀₁: There is no significant effect of solution-focused brief intervention on the physical component of stress among nursing students in Ilorin metropolis.

H₀₂: There is no significant effect of solution-focused brief intervention on the behavioural component of stress among nursing students in Ilorin metropolis.

H₀₃: There is no significant effect of solution-focused brief intervention on the psychological component of stress among nursing students in Ilorin metropolis.

METHODS

The research design employed for this study is the quasi-experimental design which involves pre-test, post-test without control group. Quasi-experimental design is a form of experimental research used extensively in the social sciences and psychology, without randomisation of assignment to conditions (Shuttleworth, 2019). The adoption of this research design goes with the assertion of DeRue (2012), that the adoption of quasi-experimental design reduces threats to ecological validity as natural environments do not suffer the same problems of artificiality as compared to a well-controlled laboratory setting. The design is graphically illustrated thus:

Figure 1: Pre-test, post-test design

$G_1 O_1 \text{ ----- } X_1 \text{ ----- } O_2$

Where: G_1 = Experimental group (Solution-Focused Brief Technique)

O_1 = Pre-test

O_2 = Post-test

X_1 = Treatment

Selection and Description of Participants

All 234 nursing students studying at University of Ilorin Teaching Hospital (UIITH) School Complex, Maraba, Ilorin constitute the population of this study. However, the nursing students in 200 level were the target population of the study.

In determining the sample size for the study of this nature, Hair and Black (2010) in Research Gate (2019) suggested five respondents per variable to be analysed as the lower limit, but the most acceptable way of determination is 10:1 ratio (10 samples for one variable). In this regard, the sample size for this study is 30 participants (that is, 10 x 3 variables of mindfulness skills training, solution-focused brief technique and academic stress). The sample was selected using the purposive sampling techniques.

Purposive sampling technique was used to select 15 students with high level of academic stress for each group. Purposive sampling according to Black (2010) is a sampling technique in which the researcher relies on his or her own judgment when choosing respondents that will be involved in the study. Black stressed further that purposive sampling may prove effective when only limited numbers of people can serve as primary data sources due to the nature of the research design, as well as the aims and objectives of the study.

Instrument

The instrument used for data collection in this study was a Stress Questionnaire adapted from Sinha, Sharma and Mahendra (2001). The instrument has two sections; A and B. Section A consists of the demographic data of the respondents; which include; gender and age; while the section B of the instrument contains 30 items, with 3 sub-sections. There were ten (10) items under each sub-section of physical, behavioural and psychological components of stress. The scoring method adopted for the instrument was a five-point Likert rating format of; Always - 5; Often - 4; Sometimes - 3; Rarely - 2; and Never – 1 respectively.

Experts in the field of guidance and counselling, educational psychology and measurement and evaluation checked for the validity of the instrument. Their verdict adjudged the instrument valid for the conduct of this study. The internal consistency of the instrument was determined using a split-half method and Cronbach Alpha coefficient index of .88 was obtained; thus, considered the instrument reliable for the conduct of this study.

The highest score a respondent can get on the instrument is 5, while the lowest score is 1. However, based on the responses to the 30 items scale, the maximum score a respondent could get when all items are responded to is 150 (that is, $5 * 30$), while the lowest score is 30 (that is, $1 * 30$). In view of this, respondents who scored between 1 and 60 were considered as having a low level of stress, respondents between 61 and 90 ranges of score were regarded as average level of stress; while respondents between 91 and 150 score range were regarded as having a high level of stress. At the pre-test stage, those with higher and average level of stress were considered for participation in this study; while those with lower stress level were exempted. The scoring format for the instrument was applicable to all participants for both pre-test and post-test in the study.

Treatment Process

The treatment package was adapted from O’Connell (2004) in a book titled “Solution-Focused Stress Counselling”. The potential participants were given information which covers the key, solution-focused ideas. It was made clear to them that the exercise is based upon the premise that individuals have some degree of responsibility for and control over their levels of academic stress. Thus, the course consisted of eight, one-and-a-half-hour sessions. It was offered as a two-day exercise or spread over six separate sessions, as the participants were given homework tasks to perform between sessions.

Table 1: Solution-Focused Brief Counselling Technique Treatment Template

Week 1	Expectations and Ground Rules
Exercise	Setting the goals in a positive, specific, tangible, and measurable way.
Week 2	Defining the Problem
Exercise	In this session, the facilitator led a discussion on what stress is and how it affects different people; and encouraged to externalize stress as a problem ‘out there’ which gets hold of people and influences them to think, feel and behave in certain ways.
Week 3	Exception Seeking and the Miracle Question
Exercise	In this session, participants were introduced to the idea that there are exceptions to their stressful times.
Week 4	Amplifying Change and Scaling
Exercise	Participants report further exceptions to the problem and successes in achieving small pieces of the miracle.
Week 5	Solutions and Others
Exercise	The facilitators continue to elicit more reports about change. They invite discussion about strategies for dealing with setbacks or lapses.
Week 6	Solution and Others Continue
Week 7	Change
Exercise	Clear understanding of the participants, of changes made in their lives by themselves, and realization of the personal skills they have used in the process.
Week 8	Ending
Exercise	Group members discuss and evaluate their progress in the group and explore how they could consolidate their gains.

Data Analysis

The data collected for this study were analysed using the inferential statistics of Paired t-test to test the null hypotheses formulated at .05 level of significance. The paired samples t-test compares the means of two measurements taken from the same individual, object, or related units; that is, it is used to test if the means of two paired measurements, such as pretest/posttest or posttest/posttest of related scores are significantly different (Kent State University, 2021). The SPSS statistical software version 23 was used to analyse the data collected.

RESULTS

The descriptive statistic of frequency and percentage was used to presents the demographic profiles of the participants. This is illustrated as follows:

Table 2: Percentage Distribution of Participants by Gender

Gender	Frequency	Percentage %
Male	4	26.7
Female	11	73.3
Total	15	100.0

Table 1 shows that out of the 15 participants that took part in the study, 4 (26.7%) were males; while 11 (73.3%) were females. This implies that, female nursing students were more represented in the groups' training than their male counterparts.

Table 3: Percentage Distribution of Participants by Age

Age	Frequency	Percentage %
19-22 years	8	53.3
23 years & above	7	46.7
Total	15	100.0

Table 3 shows that 8 (53.3%) of the participants were between 19-22 years of age; while 7 (46.7%) were between 23 years and above. This means that both adolescents' participants and those in the early adulthood are equally represented in the study.

H₀₁: There is no significant effect of solution-focused brief intervention on physical component of stress among nursing students in Ilorin metropolis.

Table 4: Paired-Sample t-test for the Effect of Solution-Focused Brief Intervention on Physical Component of Stress among Participants

Variables	N	Mean	SD	df	Cal. t	p-value
Pretest	15	32.00	5.264			
				14	11.57*	.000
Posttest	15	13.27	1.486			

* Sig. at $p < .05$

Table 4 shows that at the degree of freedom (df) of 14, the calculated t-value is 11.57 ($p = .000 < .05$). This indicates that there is statistical significant effect of solution-focused brief intervention on physical component of stress among nursing students in Ilorin metropolis; hence, the null hypothesis is rejected.

H₀₂: There is no significant effect of solution-focused brief intervention on behavioural component of stress among nursing students in Ilorin metropolis.

Table 5: Paired-Sample t-test for the Effect of Solution-Focused Brief Intervention on Behavioural Component of Stress among Participants

Variables	N	Mean	SD	df	Cal. t	p-value
Pretest	15	30.60	5.221			
				14	16.75*	.000
Posttest	15	11.20	1.320			

* Sig. at $p < .05$

Table 5 shows that at the degree of freedom (df) of 14, the calculated t-value is 16.75 ($p = .000 < .05$). This indicates that there is statistical significant effect of solution-focused brief intervention on behavioural component of stress among nursing students in Ilorin metropolis; hence, the null hypothesis is rejected.

H₀₃: There is no significant effect of solution-focused brief intervention on psychological component of stress among nursing students in Ilorin metropolis.

Table 6: Paired-Sample t-test for the Effect of Solution-Focused Brief Intervention on Psychological Component of Stress among Participants

Variables	N	Mean	SD	df	Cal. t	p-value
Pretest	15	25.80	6.668			
				14	10.85*	.000
Posttest	15	11.40	1.897			

* Sig. at $p < .05$

Table 6 shows that at the degree of freedom (df) of 14, the calculated t-value is 10.85 ($p = .000 < .05$). This indicates that there is statistical significant effect of solution-focused brief intervention on psychological component of stress among nursing students in Ilorin metropolis; hence, the null hypothesis is rejected.

DISCUSSION

The results of this study revealed that there is a significant effect of solution-focused brief intervention on physical component of stress among nursing students in Ilorin metropolis. This means that solution-focused brief intervention enhance the coping abilities of participants in the experimental group to reduce the physical manifestations of stress. The finding of this study is in tandem with the studies by Beauchemin (2015); Ates (2016); and Javid, Ahmad, Mirzaei and Atghaei (2019) whose findings indicated that solution-focused brief intervention reduced the participants' level of physical stress manifestations they exhibit. Agreement of this finding with the previous studies is evident on the premise that it was carried out among the participants within similar age brackets with those from the previous research.

In contrary, this finding negates the study of Kim, et al. (2010) who reported that solution-focused brief intervention did not prove strong in overcoming stress among the participants exposed to the exercise. Disparity of this study from the study of Kim, et. al. might be due to the variation in personal attributes of participants that took part in both studies. In related to the constructivist theory, this present finding has confirmed that constructivism as stated by Shotter (1992) is observation and scientific-based theory that relates to how people learn and use what has been learnt to solve the problem at hand through its different approaches such as solution-focused brief technique. In view of this, clients can be helped to construct their own understanding in ascertaining or identify the extent to which stress affects their life as well as appropriate methods that can be adopted in adjusting to the stressful conditions. Thus, proper implementation of solution-focused brief intervention can assist clients in surmounting physical manifestations such as back pain, fatigue, headaches, hypertension and difficulty in breathing associated with stress.

Furthermore, this study also revealed that there is a significant effect of solution-focused brief intervention on behavioural component of stress among nursing students in Ilorin metropolis. This implies that nursing students exposed to solution-focused programme showed tremendous improvement in managing the behavioural manifestations associated with life stress. Past research experiments such as Green, Grant and Rynsaardt (2007); Gingerich and Peterson (2013) are evidences to validate the findings revealed from the conduct of this study. They reported that solution-focused brief interevention contributed to positive strategies adopted by the participants in coping with behavioural issues emanating from stressful life situations. Consistent of this study with the past studies could have resulted from the fact that the natural settings within which the studies took place were serene, conducive and the participants' participation in the group training exercise was encouraging.

Opposing this finding, Kim et al. (2010) has noted small effect of solution-focused brief counselling technique on participants' behavioural manifestation of stress. Conflicting result could have been caused by disparities in the categories of participants that constituted samples in both studies. Consolidating this finding on the constructivist theory, the main goal of solution-focused technique is to understand the clients' concerns, both conscious and unconscious, that are problematic for them, so that the facilitating counsellor can work with the clients to develop alternatives, less problematic anticipations and ways of acting (Encyclopedia of Mental Disorder, 2004). These past evidences are sufficient to state that solution-focused brief counselling process can help dispel any form of behavioural manifestations such as anger, procrastination and neglect of responsibility attributed to stressful life situations. So, clients are able to independently employ positive strategies in combating behavioural stress component and adjust effectively to life challenges.

It was also indicated that there is a significant effect of solution-focused brief intervention on psychological component of stress among nursing students in Ilorin metropolis. This indicates that with the intervention of solution-focused brief, there is reduction in the psychological manifestations of stress among the nursing school students. Existing studies such as Bannick (2008); Beauchemin (2015); Sitindaon and Widyana are evidences upon which this present finding stands; they have revealed that participants exposed to solution-focused brief intervention showed an improved level of adjustment in escaping psychological or cognitive indices associated with stress. Congruence of this present finding with the previous could have resulted from the fact that they were all conducted within conducive atmosphere and among minimum number of clients which invariably had given room for easy facilitations of the programmes and maximum cooperation from the end of the participants.

A related study by Barandeh and Ghodsi (2010) had however, earlier documented result that contrast this present finding; as a moderate effect of the technique was found on stress. This inconsistency is probably due to difference in category of participants and problems involved in the conduct of both studies. This present finding is also in line with the constructivist theory that emphasised approaches such as solution-focused brief counselling as effective strategy in helping clients to build understanding of the world around them and how they fit into it or beliefs and emotions about experiences in their lives (Mahoney & Granvold, 2005). So, participants in the experimental group are viewed as active individuals (who are psychologically balance or functional) in the construction of reality of life situations; thereby, exploring with them proactive ways to help navigate stressful conditions. An inference drawn from the result of this study is that solution-focused brief

programme is useful and usable in appealing to the clients' sense of reasoning to understand the problem at hand and equips them with skills to help them discover their innate potentials in dealing with stressful life situations.

CONCLUSION

It concluded based on the findings of this study that solution-focused brief intervention is effective in reducing physical, behavioural and psychological manifestations associated with stress experienced by nursing school students. This suggests that a handful knowledge of the techniques and its application are required for trained mental health experts and counsellors in order to properly help clients overcome stressful life conditions.

RECOMMENDATIONS

In the light of the above findings, it was recommended that:

1. Authority of the nursing schools should establish functional counselling centers from which their students can seek counselling intervention on their stress-related experiences; so that they can easily be helped by the counsellors or mental health professionals to overcome stress through effective use of solution-focused brief intervention.
2. Since the practices of solution-focused brief programme reinforce coping skills with stress among nursing students, counsellors and mental health experts can utilize the technique in the context of preventive guidance services by, on regular basis, educating nursing educators and healthcare professionals in school system on ways to adopt these strategies in overcoming stressful conditions.
3. Counsellors and mental health professionals should be trained on appropriate ways or processes involved in the use of solution-focused brief intervention to combat stress among nursing students. Having in-depth knowledge of this will help them assist students better to adjust effectively to their life endeavours and experience stress as a motivation to accomplish a task effectively.

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