

Original Article

Effects of Supportive Nursing Intervention on the Psychological Well-Being of Mothers of Neonates Admitted to Tertiary Hospitals in Ogun State

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Abstract

Women are often faced with different kinds of difficulties while trying to cope with the roles of having to nurse a neonate. It is worse when the neonate is separated from the mother owing to hospitalization in the neonatal intensive care unit. Mothers experience psychological trauma ranging from anxiety to depression resulting from the situation and the inability to cope with the Neonatal Intensive Care Unit (NICU) environment. This study assessed the effect of supportive nursing intervention on the psychological well-being of mothers of admitted neonates. The study employed a quasi-experimental research design which involved one group pre and post-test design. There were 52 mothers recruited for the study using total enumeration method in the two study centres. Ryff's standardized scale of psychological well-being was used in collecting data from the participants. This study concludes that supportive nursing intervention has positive effect on the psychological well-being of mothers. Nurses can play major roles in ensuring that the mothers whose neonates are admitted are psychologically stable throughout the period of admission.

Keywords: Mothers, Neonate, Psychological well-being, Supportive nursing intervention.

Introduction

Many women experience physical and emotional issues during pregnancy, delivery and postpartum. Significant adaptability is required during these

phases particularly during the postpartum period because it is during this period that bonding is formed between the mother and the newborn. Having the newborn admitted to the hospital

during the early days of life adds extra stress to this challenging phase of motherhood. The relationship between mothers and their babies is of significant value to the psychological well-being of the mothers. Giving necessary supports to mothers in this process of developing mother-child relationship is very important.

Pregnancy and the birth of a baby change the whole family context and create unique anxieties in the case of a preterm newborn. Feelings of incompetence, frustration, anger, guilt and anguish may be present when mothers do not have healthy babies. Mothers of hospitalized neonates have a greater risk for psychological distress. These mothers experience psychological trauma more than other mothers. The ability to understand the psychological well-being of these mothers will help in managing the mental status of such mothers which will in turn help in developing special parenting styles for managing the neonates (Busse, Stromgren, Thorngate & Thomas, 2013).

The unexpected hospitalization of a neonate is far from what the mother had anticipated; the shock of a rapid chain of events taking place, a feeling of emptiness when the baby is placed in the intensive care unit, the feeling of powerlessness when facing the risk of the infant's possible death and the invasive treatments are enough to put any mother in serious psychological distress. These mothers worry about the viability and future of their neonates. The reactions of mothers of preterm neonates could have serious repercussions on the development of the neonate due to complex and atypical interactions between the mother and the child and will also have impact on the psychological well-being of the mothers.

According to Ryff (2014), the psychological well-being has six components which are environmental mastery, acceptance of the situation, positive relation with others, autonomy, personal growth and purpose in life. When neonates are admitted, the mothers' psychological well-being is affected mostly in the areas of environmental mastery, acceptance of the situation and relationship with others. Environmental mastery involves a sense of mastery and competence in managing the environment, making effective use of the surrounding opportunities and creating context suitable to personal needs and values. The

inability to manage everyday affairs, unable to improve on surrounding context and lack of sense over external world depicts poor mastery of the environment. Acceptance of the situation is the ability to possess positive attitude toward self, acknowledging and accepting multiple aspects of one's self including good and bad qualities but in a case whereby the individual feels dissatisfied and disappointed with self and have problem about certain personal qualities will mean that the individual do not accept self or the situation. Positive relation with others is when individuals have warm satisfying, intimate and trusting relationship with others, concerned about others' welfare and understand give and take of human relationships. When the individual has few close trusting relationships, it makes it difficult for the individual to be stable psychologically and poor interpersonal relationship with others will set in.

A study by Yurdakul, et al., (2009) showed higher anxiety score among mothers whose neonates are admitted into the NICU and recommended appropriate counseling during hospitalization of neonates. Mothers of the neonates admitted to the NICU are believed to experience the heightened distress compared to the mothers of healthy neonates. Study by Saldanha, Rathi, Bal and Chaudharu (2014) showed that 10%-15% of these women are affected psychologically and when it is not treated through supportive nursing intervention, it brings about dysfunction such as an anxiety, depression, acute stress disorder and post traumatic stress disorder (Rai & Rani 2018). This in turn leads to low parenting skills and poor infant attachments.

Lee (2009) asserted that identifying and providing solution to the developmental and physiological needs of ill neonates and their families has improved the survival rates of the neonates and the psychological well-being of the families particularly the mothers. He also observed that mothers who give birth and have the neonates admitted often experience a certain degree of sorrow, anxiety, anger and depression. Lee, (2013) believes that when nurses implement supportive intervention that are therapeutic such as parent-infant interaction, maternal emotional, psycho-social, breastfeeding, supporting them on how to master the environment that they have found themselves, acceptance of the situation and

relating with others positively will reduce maternal distress, increase confidence in caring for their infants and increase their psychological well-being as a whole.

Statement of the Problem

Psychological well-being of mothers whose neonates are admitted vary based on different factors such as cultural background and beliefs (Sola-Carmona, et al., 2016). The atmosphere of the neonatal units have been reported to destabilize the emotional state of mothers and leave emotional scars on them even while trying to manage the situation. The health status of the baby, treatment procedures and the prognosis have being linked to reduction of psychological well-being of these mothers.

At the two Selected Tertiary Hospitals in Ogun State, the researchers also observed that mothers of these neonates also experience psychological disturbances in terms of environmental mastery which has led to disturbed sleeping pattern, uncoordinated activities and imbalanced nutrition. Also, accepting the fact that their neonates are admitted have reduced their happiness because they do not know what the outcome of the admission will be and all these have contributed in not allowing them to relate well with others.

There have been advances in science and technology which improves the survival rate of the neonates but less importance has been placed on the psychological well-being of these mothers who have their neonates admitted in the NICU.

On the basis of the foregoing, this study assessed the psychological well-being of mothers who have their neonates admitted and supportive nursing intervention was given that can help foster the psychological well-being of these mothers.

Objectives of the Study

The general objective of this study is to assess the effect of supportive nursing intervention on the psychological well-being of mothers of admitted neonates in two selected tertiary hospitals in Ogun State. The specific objectives are to:

1. conduct a pre-intervention assessment on the psychological well-being of mothers of admitted neonates in two selected hospitals in Ogun state

2. provide a supportive nursing intervention on psychological well-being to mothers of admitted neonates in the two selected hospitals in Ogun state
3. conduct a post intervention assessment to assess the effect of the supportive nursing intervention on the psychological well-being of the mothers.

Hypotheses

1. There is no significant difference between pre-intervention and post intervention psychological well-being of mothers of neonates admitted in the two selected hospitals
2. There is no significant difference between parity of the mothers and the psychological well-being of mothers.

Methodology

Research Design

The study employed a quasi-experimental research design which involved one group pre-test post-test design and assessed the effect of supportive nursing intervention on the psychological well-being of mothers of neonates admitted in two selected tertiary hospitals in Ogun State. The target population for the study comprised of mothers who have their neonates admitted to the neonatal units of Babcock University Teaching Hospital and Olabisi Onabanjo University Teaching Hospital in Ogun State. A total enumeration method was used in recruiting participants for this study by recruiting the participants who were ready to engage in the study since the average number of patients on monthly basis was low (Table 1). Average patients in the Neonatal Intensive Care Unit of both hospitals are as follows according to the researchers' survey prior to the study:

Instrumentation

The researcher adapted Ryff's Scale of Psychological Well-being (PWB) to collect data from the participants. The questionnaire was adapted because it is not all the domains in the psychological well-being that are related to the mothers when they have their neonates admitted. The three domains associated with this study are the environmental mastery, acceptance of the situation and relationship with others. The questionnaire consists of four sections. Sections A to D with 38 items.

Section A: Socio-Demographic data with 13 items which included open and close ended questions. Section B: This consists 9 items for assessing the area of environmental mastery of the mothers. Section C: This consists 7 items for assessing the areas of acceptance of the situation of the mothers. Section D: This consists of 9 items for assessing the areas of positive relation with others.

Ryff's Scale of Psychological Well-being was used with the following response format: 1 = Strongly disagree; 2 = Disagree; 3 = Undecided; 4 = Agree; 5 = Strongly agree. However, 13 items were reversely scored which are 15, 16, 18, 20, 26, 27, 28, 29, 31, 32, 35, 36 and 37. The instrument was translated to Yoruba by an expert in linguistic to enable those that did not understand English language participate in the study.

Reliability of the Instrument

Ryff's Scales of Psychological well-being was used with internal consistency (Alpha Coefficient) of 0.88. The researcher also tested the reliability of the adapted instrument at Federal Medical Centre, Abeokuta by recruiting ten mothers whose neonates were admitted into the NICU of that hospital and the Cronbach's alpha coefficient was found to be 0.85, so the instrument was considered reliable.

Data Collection Procedure

Approval to carry out the study was sought from the health and research ethical committees of the two study centers in three stages:

Pre-intervention (First stage)

The researcher sought consent of the participants, explained the purpose and benefits of the study to the participants, and also solicited the cooperation of the participants throughout the study. The researcher and the participants agreed on the time and duration of the intervention which did not infringe on their leisure time. The pre-test was then administered.

Intervention (Second stage)

The intervention programme for the study was supportive nursing intervention which was delivered by the researcher. The supportive nursing intervention was given to the recruited participants in each of the centres.

Post-intervention (Third Stage): Post intervention data was collected using the same instrument that was used in the pre-intervention stage.

Ethical Considerations

Approval to carry out the study was sought and obtained from the Babcock University Health and Research Ethical Committee (BUHREC), Babcock University Teaching Hospital (BUTH) and Olabisi Onabanjo University Teaching Hospital, Health and Research Ethical Committee (OOUTHREC). Informed consent of the participants was gained through adequate explanation of the reason for conducting the research and also the mothers were allowed to sign the consent form before getting involved in the study. It was explained to the participants that they were free to quit from the study at any point if they are not interested again. Information obtained from the participants was used for academic purpose and the confidentiality of the participants was ensured.

Results

The average number of mothers per month in NICU of BUTH in the research period were = $96/6 = 16$ mothers. The average number of mothers per month in NICU of OOUTH were = $247/6 = 41$ mothers. Average total patients in both BUTH and OOUTH in one month: $16+41 = 57$ mothers. However, during the study period, only 52 mothers were seen over the four weeks of the study period. 13 mothers were recruited in BUTH and 39 mothers from OOUTH. The average number of mothers per month in BUTH 6 months prior to the study were = $96/6 = 16$ mothers per month. The average number of mothers per month in OOUTH 6 months prior to the study were = $247/6 = 41$ mothers per month (Table 1).

Table 2 describe the socio-demographic characteristics of the participants. A total of 52 mothers were recruited for the study. About one third of the mothers 19(36.5%) were between 25-30 years, majority of the participants 19(36.5%) were para 3. Majority 44(84.6%) of the participants have not had any of their children admitted before into the NICU. Half of the participants 26(50%) had tertiary education and most (44.2%) of the neonates have been admitted for about 4-6 days.

Table 3 shows the pre-intervention psychological well-being of mothers whose neonates were admitted into the NICU during the study period. From the table, 65.4% of the mothers had low psychological well-being resulting from environmental mastery, 80.8% of the participants were low in acceptance of the situation while 26.9% of the participants were low in positive relations. Twenty-one reflecting 40.4% of the mothers had low psychological well-being in overall prior to the supportive nursing intervention.

Table 4 shows the post-intervention psychological well-being of the mothers after the supportive

nursing intervention has been given. 53.8% of the mothers had normal psychological well-being resulting from environmental mastery, 75% was high in acceptance of the situation and 71.2% was high in positive relations with others. On the overall, the psychological well-being of most (82.7%) of the mothers became high after the supportive nursing intervention. The supportive intervention was seen to have brought about improvement in all the components or domains of the psychological well-being measured. The supportive nursing intervention could be seen as impactful.

Table 1: Average number of mothers whose neonates were admitted in the study centers for 6months prior to the study (July 2018- December, 2018)

MONTH	Babcock University Teaching Hospital	Olabisi Onabanjo University Teaching Hospital
July 2018	21	48
August 2018	20	44
September 2018	17	46
October 2018	9	29
November 2018	16	42
December 2018	13	38
Total	96	247

Table 2 presents the Socio-demographic Characteristics of the Participants (N = 52)

Variable	Frequency (n)	Percentage (%)
Age group (yrs)		
19 – 24	7	13.5
25 – 30	19	36.5
31 – 36	14	26.9
37 and above	12	23.1

Mean \pmSD = 30.96 \pm 6.17		
Parity		
Para1	13	25.0
Para 2	17	32.7
Para 3	19	36.5
Para 4	1	1.9
Above 4	2	3.8
Family average monthly income (thousand)		
Below 100	29	55.8
100 – 200	16	30.8
201 – 300	4	7.7
301 – 400	3	5.8
Mother's occupation		
Civil servant	14	26.9
Self employed	32	61.5
Artisan	6	11.5
Mother's highest level of education		
No formal	2	3.8
Primary	6	11.5
Secondary	18	34.6
Tertiary	26	50.0

Table 3: Participant's Pre-intervention psychological well-being (N = 52)

Category	Score	Frequency (%)	Remark
Environmental Mastery	0 – 3 (\leq 25.0% score)	34 (65.4)	Low
	4 – 6 ($>$ 25.0% score)	16 (30.8)	Normal
	7 – 9 (\geq 75.0% score)	2 (3.8)	High
Acceptance of the situation	0 – 2 (\leq 25.0% score)	42 (80.8)	Low
	3 – 4 ($>$ 25.0% score)	8 (15.4)	Normal
	5 – 7 (\geq 75.0% score)	2 (3.8)	High
Positive relations with others	0 – 3 (\leq 25.0% score)	14 (26.9)	Low
	4 – 6 ($>$ 25.0% score)	24 (46.2)	Normal
	7 – 9 (\geq 75.0% score)	14 (26.9)	High
Psychological well-being	0 – 8 (\leq 25.0% score)	21 (40.4)	Low
	9 – 16 ($>$ 25.0% score)	31 (59.6)	Normal
	17 – 25 (\geq 75.0% score)	0 (0.0)	High

Table 4 : Participant's Post-intervention psychological well-being (N = 52)

Category	Score	Frequency	Percentage (%)
Environmental Mastery	0 – 3 ($\leq 25.0\%$ score)	4 (7.7)	Low
	4 – 6 ($> 25.0\%$ score)	28 (53.8)	Normal
	7 – 9 ($\geq 75.0\%$ score)	20 (38.5)	High
Acceptance of the situation	0 – 2 ($\leq 25.0\%$ score)	5 (9.6)	Low
	3 – 4 ($> 25.0\%$ score)	8 (15.4)	Normal
	5 – 7 ($\geq 75.0\%$ score)	39 (75.0)	High
Positive relations with others	0 – 3 ($\leq 25.0\%$ score)	8 (15.4)	Low
	4 – 6 ($> 25.0\%$ score)	7 (13.5)	Normal
	7 – 9 ($\geq 75.0\%$ score)	37 (71.2)	High
Psychological well-being	0 – 8 ($\leq 25.0\%$ score)	0 (0.0)	Low
	9 – 16 ($> 25.0\%$ score)	9 (17.3)	Normal
	17 – 25 ($\geq 75.0\%$ score)	43 (82.7)	High

Hypotheses Testing

Hypothesis One

There is no significant difference between pre-intervention psychological well-being and the post - intervention psychological well-being of mothers.

Hypothesis Two

There is no significant association between parity of the mothers and the psychological well-being of mothers.

Table 5 result of t-test reveals that the mean difference between pre and post intervention was significant ($p < 0.001$). Hence, the null hypothesis was rejected. Then, the study found out that there is significant difference between the pre and post

intervention psychological well-being. This is an indication that the intervention had positive impact on the mother's psychological well-being. This shows that supportive nursing intervention play major role in improving the psychological well-being of mothers during the admission of their neonates. Most of the mothers had low psychological well-being at the pre-intervention phase but there was improvement after the supportive nursing intervention was given.

Table 6 reveals the result of chi-square that the mother's parity was not significantly ($p = 0.490$) associated with their level of psychological well-being. This shows that the number of children the mother has does not necessarily translate to increase or decrease in the psychological well-being of the mothers

Table 5 represents Paired Sample Test

	Mean	Mean Difference	t-value	p-value	Remark
Pre-Intervention	9.69				
		9.06	12.48	< 0.001	Significant
Post – Intervention	18.75				

Table 6 Association between mother's parity and psychological well-being

Variables	Psychological Well-being		X ² - Value	p-value
	Low n(%)	Normal n(%)		
Parity				
One	6 (28.6)	7 (22.6)		
Two	6 (28.6)	11 (35.5)		
Three	7 (33.3)	12 (38.7)	3.64	0.490
Four	0 (0.0)	1 (3.2)		
Above four	2 (9.5)	0 (0.0)		

Significant association at $p < 0.05$, Fisher's exact value was reported for small cells

Discussion of Findings

Research Question One

Findings from the study shows that 65.4% of the mothers had low psychological well-being resulting from environmental mastery, 80.8% was low in acceptance of the situation and only 46.2% was normal in positive relations. This study is also supported by Binu, Sheela, Leslie and Ramesh (2014), who opined that among mothers whose neonates are hospitalized in NICU, high levels of anxiety depression and hostility was shown and same also revealed problems of psycho-social adjustment of the mothers. Their findings showed that the state anxiety level was found to be 65% in the mothers whose neonates were hospitalized. Furthermore, in line with Study by Health information for Western Australian (2018) the findings was supported showing that mothers are often not psychologically stable during the admission of their neonates: 8 to 11% of women experience depression during admission of their neonates while 13 per cent of women will go through post natal depression. This findings was also supported by the study by Ashwani, Rekha and Kumar (2017) that found out that NICU

environment has the potential to exacerbate stress for mothers of neonates admitted to the NICU therefore directly affecting the environmental mastery of the mothers. The psychological distress might be due that their babies are not kept with them, they only have access to their babies occasionally and seeing their neonates under medical equipment and watching them undergoing procedures.

Niranjan, et al, (2015) also affirmed that lack of maternal role, such as not being able to protect the neonate, and separation and the appearance and behavior of the sick neonate cause significant distress in mothers whose sick neonate is hospitalized in NICU. Twenty seven (90%) mothers scored more than 137 on the Parental Stress Scale (PSS): NICU falling into the "Extremely stressful" severity rating of PSS: NICU and three mothers (10%) scored between 103-136 indicating "very stressful" states according to PSS: NICU. This is in line with the study of Kolmakova, (2015) on support for the parents whose child is in neonatal intensive care unit. He opined that lack of information, new environment and uncertainty about the neonate's future make the mother more stressed and psychologically fragile.

Niranjan, et al., (2015) also placed much emphasis on the environment as a major factor that affects the psychological well-being. Heidari, Hasanpour and Fooladi (2017) further found that the mothers in the study wanted to seek for help and sympathy from others because of the low psychological well-being experienced in the area of positive relation with others as also experienced by the participants in this study which shows low positive relation with others by 26.9% of the participants. This study is also supported by Stacey, Osborn and Salkovskis (2015), who conducted a study assessing factors that helped mothers cope with the NICU and found that the physical environment of the NICU played a critical role in maternal ease and satisfaction. The link between the physical NICU environment and maternal well-being has strong indications for practical quality improvements that promote maternal convenience and comfort.

Research Question Two

The post intervention result reveals that there was improvement in the mothers' psychological well-being in areas of environmental mastery, acceptance of the situation and positive relation with others. This may be connected with the fact that most mothers want to be supported psychologically during the admission of their neonates. The support most times always assists the mothers in coping with the period.

This finding was corroborated by Ilana, et al., (2014) who opined that supportive nursing intervention approaches for mothers of neonates in the NICU have been revealed to reduce emotional stress and other psychological trauma they experience and is effective in improving their psychological well-being.

The result from pre and post-intervention assessment of the psychological well-being of the participants was seen to improve in all the components from environmental mastery, acceptance of the situation to positive relations with others. Majority (92.3%) of the participants became stable psychologically in the area of environmental mastery after the supportive nursing intervention as compared to low (65.4%) of the pre-intervention. This improvement in the area of environmental mastery may not be unconnected to the right information to the equipment being used

for their babies, how they can cope with the environment and helping them to accept new challenges with good fate. This is in support of the study by Lindberg and Ohrling (2009) who found that emotional support from family members, cultural background and belief, and medical team giving needed information to mothers about their neonates helps them in their ability to manage the challenge that comes with hospitalization of their neonates (53.8% became normal psychologically while 38.5% became high psychologically). This finding is in agreement with the study by Heydarpour, et al., (2017) who found out that social support and interaction with healthcare providers played a critical role in adjustment to new motherhood in a NICU environment. This finding is also supported by the findings of Stacey, Osborn and Salkovskis (2015) where it was discovered that NICU environments and maternal well-being has strong indications for practical quality improvements that promote maternal convenience when manipulated.

The improvement in the psychological well-being of the participants in this study is also supported by the findings in a study conducted by Ntswane-Lebang and Khoza (2010) on mothers' experiences of caring for very low birth weight premature infants in one public Hospital in Johannesburg, South Africa, mothers were found to improve psychologically after receiving emotional support and information to cope with the psychological challenge that came with admission of their neonates. This is also supported by the study of Hima, Rima, Sridhar and Earnest (2018), on how activity based group therapy can reduce maternal anxiety in the NICU, it was concluded that anxiety in mothers of neonates admitted in the NICU has been associated with adverse neonatal and parenting outcomes. Intervention to reduce anxiety levels in mothers in the NICU was given and anxiety levels were assessed before and after every group session. Their anxiety level was significantly lower in the post-test, when compared to the pre-test. Also the number of mothers suffering from moderate to severe anxiety and the anxiety scores in the post-test were significantly lower after the intervention.

Vhlqvist-biorkroth, et al., (2016) in their study on mothers of preterm neonates commonly experience separation from their neonate or exclusion from

their role as primary caregivers during the hospital care of their neonate, observed that close collaboration with mother intervention to improve their communicating with caregivers in neonatal intensive care units (NICU) was developed to increase their presence and participation into neonate care, and to improve mother-neonate bonding and, thereby, mothers' psychological well-being and later child development. The result by Lindberg and Ohrling (2009) also supports the findings of this study that emotional support from family members, cultural background and belief, and medical team giving needed information to mothers about their neonates helps them in their ability to manage the challenge that comes with hospitalization of their neonates thereby improving the psychological well-being of the mothers.

Also, according to Barr (2015) in his study of Guilt, shame and fear of death predict neonatal intensive care unit-related parental distress, he generated some ways by which mothers adopt in coping with admission of their neonates which has improved the psychological well-being of the mothers. The study conducted by Rachel, Lean, Cynthia, Rogers, Rachel, Paul and Emily (2018), revealed that supportive nursing interventions given to mothers of neonates admitted to the neonatal intensive care unit (NICU) who experience psychological distress, loss of the parenting role, and disruptions to mother-infant bonding demonstrated consistent links with later maternal mental well-being, sensitive parenting behaviors, and children's cognitive and socio-emotional development.

Conclusion

Supportive nursing intervention has positive effect on the psychological well-being of mothers whose neonates were admitted to NICU. The improvements in the mothers' psychological well-being in this study shows that the mothers now have a sense of mastery and competence in managing the environment, controls complex arrays of external activities, possess a positive attitude towards self, have warm satisfying, trusting relation with others and also understand give and take of human relationship. Nurses play major roles in ensuring that the mothers are psychologically stable throughout the period of admission. The study highlighted the importance

of supportive nursing intervention to improve the psychological well-being of mothers.

Recommendations

Based on the findings from this study, the researcher recommended the following:

1. Health professionals especially nurses should always assess the psychological well-being of mothers of admitted neonates.
2. Policies should be made in the different NICU so that adequate and needed care particularly psychological support can be given to the mothers of these admitted neonates.
3. Mothers should be allowed to see their neonate anytime and allow them cuddle them as need arise as this might improve their psychological well-being particularly in the area of positive relation with others.
4. Mothers should be accommodated in a favourable environment so that the psychological well-being of mothers in the area of environmental mastery can be sustained.
5. Psychologists can be involved in the health care setting particularly in caring for the patients' relatives like these mothers.
6. The health care team particularly Nurses should be prepared to support the mothers psychologically and also be prepared to answer repeated /frequent questions that bothers them psychologically.

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