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Ways of Coping among Nurses in the Context of Maternal and Perinatal Mortality in the Limpopo Province, South Africa

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Abstract: **Objective:** To determine the coping strategies used by nurses providing maternal and perinatal care in the hospitals of the Limpopo Province, South Africa. **Methods:** A cross-sectional descriptive study was conducted in public hospitals (1 tertiary, 2 regional and 3 district hospitals). A sample of nurses and unit managers on duty at the time of visit was asked to complete the Ways of Coping Scale (WCS) questionnaire anonymously. Principal Component Analysis was used to test factor structure from the original 32-items WCS questionnaire. Results: A total of 83 nurses participated in the study, of which 98% were females and (59%) married. The most frequent coping strategies used were acceptance/adaptation, substance use and emotional eating, denial/avoidance, spiritual and seeking social help. **Conclusion:** Therefore, it is recommended that psychological support programs should be implemented to deal with stressful situations at workplace

Keywords: Coping Strategy;Nurse;Maternity;Limpopo Province

1. Introduction

In South Africa (SA), occupational exposure to maternal deaths has become an inevitable part of the daily experiences of the health care workforce[1]. The persistent exposure to maternal death may cause cumulative stress and emotional turmoil[2] and have adverse effects on the well-being of nurses and their ability to provide quality work[3,4] Moreover, lack of staff, equipment and infrastructure, and increased workload may also contribute to stress[5,6] burnout and compassion fatigue[7-10] amongst nurses. The level of stress experienced and the extent to which the adverse effects of stress occur depend on how well the individual utilises coping strategies in a hospital setting[11] Knowledge about the coping strategies used by nurses to adapt to a stressful environment can direct local health care teams and policy makers to develop interventions - leading to a healthier work environment with fewer problems. However, little or no information is available on the coping mechanisms used by nurses to deal with stressful working conditions in rural areas of SA. There is a tendency to focus more on the psychopathology and little is done to look at the way such stress can be positively addressed. Addressing stress positively is in line with new trends in positive psychology that focusses on the strength and resilience of individuals in distress and how they are enabled to flourish[12] Therefore, this study was undertaken in an effort to identify coping strategies used by nurses providing maternal and new-born care in the public hospitals of the Limpopo Province, South Africa.

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2.Materials and Methods

A cross-sectional descriptive study was conducted in six public hospitals (one tertiary; two regional and three district hospitals) of the Limpopo Province, South Africa. The study was conducted over a period of 2 months from May to June 2014. All nurses providing maternal care, including unit managers on duty at the time of visit, were asked to complete the Ways of Coping Scale (WCS) questionnaire anonymously.

Nurses completed the WCS, which is a revised version of the Coping Strategies Procedure developed by Billing and Moos (1981)[13] The WCS comprises of a 32-items scale for measuring active cognitive strategies (11 items), active behavioural strategies (13 items) and avoidance strategies (8 items). The questionnaire uses a 3-point Likert scale, ranging from 0 (Not at all) to 2 (Regularly). Billings and Moos (1981) established reliability of the WCS tool with Cronbach alpha scores of 0.54 for active cognitive, 0.50 for active behavioural, and 0.39 for avoidance coping (Billing and Moos, 1981)[13] In the present study, Cronbach alpha was 0.79 for active cognitive, 0.86 for behavioural, and 0.76 for avoidable coping.

Exploratory factor analysis with Varimax rotation (used in order to extract maximum variance from the data set) was used to test factor structure from the original 32-items WCS questionnaire. A Scree plot was used to determine the number of factors to retain in the factor model and items with loading values less than 0.55 were excluded from the model, as suggested by Comrey and Lee (1992).14 The fit of the model was assessed using the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and Bartlett's Test of Sphericity. The data were entered and analysed using SPSS statistical software (Version 13.0 SPSS Inc, Chicago IL)

2.1Ethics Statement

Ethics approval for the study was obtained from the Pietersburg/Mankweng Hospital Complex Research Ethics Committee (PMHREC) of the University of Limpopo in South Africa. The participants were informed of the purpose of the study and gave a written consent for their participation. Anonymity and confidentiality of data was assured by group data analysis without any personal identifiers.

3.Results

A total of 83 nurses from six hospitals in the Limpopo Province of SA participated in the study. Of these, most (98%) were female with 2 to 5 years of experience in maternity wards. Table 1 presents a detailed description of the demographic profile of the participants. Exploratory factor analysis was performed on the 32-items WCS and yielded 10 factors with eigenvalues greater than 1 and, together accounted for 69.9% of the variance (Table 1). The KMO for the model was 0.619 and Barlett’s test of sphericity was significant ($p<0.001$). Inspection of the component matrix found that 17 items had loading values greater than the cut-off point of 0.55 suggested by Comrey and Lee (1992).The results obtained from the factor loading matrix limited to 5 factors and 17 items with high loading values is presented in (Table 3). Results from this subsequent factor analysis accounted for 62.5% of the variance with KMO of 0.63 and a significant Barlett’s test of sphericity ($p<0.001$). In the final model, factor loading 1 had 6 items which was labelled acceptance/adaptation, factor 2 had 4 items and labelled substance abuse and binge/emotional eating, factor 3 had 2 items labelled denial and avoidance, factor 4 and 5 both had 1 item labelled spiritual and seeking social support, respectively

Table 1: Demographic information of the participants, n=83

	No	%
Gender		
Male	2	2
Female	81	98
Age (years)		
20-31	20	25
32-49	44	53
50+	18	22
Marital status		
Single	24	29
Married	48	59
Widowed	10	12
Education level		
Matric	44	54
Diploma	21	26
Degree	14	17
Post-graduate	2	3
Occupation status		
Manager/assistant	10	12
Registered nurses	61	74
Enrolled nurses	12	15
Years of experience in maternity ward		
≤1	18	22
2-5	53	65
>5	11	13

Table 3: Factor analysis of the final five-factors of the coping scale

	Factors Loadings				
	1	2	3	4	5
% of variance	22.6	16.8	8.9	7.6	6.6
Eigenvalues	3.8	2.8	1.5	1.3	1.1
Went over the situation in my mind to try to understand it	**0.79**	0.03	-0.05	0.04	-0.14
Told myself things that helped me feel better	**0.77**	0.15	0.13	0.17	0.01
Tried to see the positive side of the situation	**0.72**	0.04	-0.12	0.08	0.03
Tried to step back from the situation and be more objective	**0.70**	0.06	-0.01	-0.16	-0.17
Accepted it, nothing could be done	**0.65**	-0.01	0.07	-0.17	0.16
Let my feelings out somehow	**0.58**	-0.09	0.18	0.02	0.37
Made a plan of action and followed it	0.53	0.02	-0.24	0.32	0.23
Got busy with other things to keep my mind off the problem	0.52	-0.04	0.30	0.44	0.12
Tried to reduce tension by smoking more	0.05	**0.91**	0.04	0.07	-0.07
Tried to reduce tension by taking more tranquilizing drugs	-0.15	**0.77**	0.02	0.34	0.11
Tried to reduce tension by eating more	0.06	**0.73**	0.24	-0.10	0.05
Tried to reduce tension by drinking more	0.21	**0.68**	0.18	-0.19	-0.04
Avoided being with people in general	0.07	0.18	**0.86**	0.11	0.04
Refused to believe that it happened	-0.08	0.24	**0.82**	-0.06	-0.18
Prayed for guidance or strength	-0.01	0.04	0.01	**0.79**	-0.03
Talked with friend about the problem	0.10	-0.09	-0.03	0.17	**0.75**
Talked with spouse or other relative about the problem	-0.10	0.23	-0.15	-0.34	**0.64**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy =0.630

Bartlett's Test of Sphericity ($\chi 2 = 519.9$, $p<0.001$)

Table 2: Factor analysis of the original 32-item coping scale

	Factor Loadings									
	1	2	3	4	5	6	7	8	9	10
% of variance	19.3	11.3	7.3	6.6	5.3	4.9	4.2	4.1	3.5	3.3
Eigenvalues	6.2	3.6	2.4	2.1	1.7	1.6	1.4	1.3	1.1	1.1
Tried to see the positive side of the situation	**0.74**	-0.17	0.07	-0.15	0.25	-0.01	0.00	-0.15	-0.12	-0.24
Told myself things that helped me feel better	**0.69**	0.13	-0.11	-0.31	-0.07	-0.04	0.07	0.06	0.34	-0.01
Went over the situation in my mind to try to understand it	**0.69**	-0.09	-0.05	-0.30	-0.02	0.03	-0.25	0.04	0.04	0.12
Made a plan of action and followed it	**0.62**	-0.16	-0.06	0.20	-0.30	-0.08	0.24	-0.09	-0.35	-0.15
Accepted it, nothing could be done	**0.60**	-0.06	-0.05	0.11	-0.06	-0.02	-0.28	0.13	0.05	0.32
Let my feelings out somehow	**0.60**	-0.02	-0.22	0.24	-0.21	-0.25	0.11	0.19	0.02	0.03
Tried to step back from the situatin and be more objective	**0.59**	-0.09	0.02	-0.30	0.19	-0.05	-0.16	-0.20	0.39	-0.07
Got busy with other things to keep my mind off the problem	**0.55**	0.12	-0.32	-0.21	-0.12	0.03	0.30	0.18	0.01	-0.03
Tried not to act too hastily or follow my first hunch	0.52	-0.34	0.05	0.27	-0.09	-0.10	0.17	0.29	-0.22	0.05
Took things a day at a time	0.52	-0.17	0.16	-0.14	0.47	0.25	-0.10	0.18	-0.04	-0.05
Bargained or compromised to get something positive from the	0.52	0.15	-0.05	0.48	-0.13	0.31	-0.05	-0.11	0.02	-0.14
Prepared for the worst	0.51	-0.18	0.36	-0.28	0.03	0.12	-0.07	-0.28	-0.06	0.05
Got away from things for a while	0.50	0.06	-0.13	0.29	-0.18	0.12	0.10	-0.28	0.41	-0.14
Kept my feeling to myself	0.48	0.41	-0.47	0.02	0.29	-0.15	-0.12	-0.09	-0.13	-0.05
I knew what had to be done and tried to make things work	0.46	0.09	-0.02	0.37	-0.18	0.07	-0.38	0.02	-0.32	0.25
Drew on my past experiences	0.44	-0.43	0.02	-0.23	0.18	-0.24	0.16	-0.06	-0.19	-0.38
Tried to reduce tension by smoking more	0.11	**0.72**	0.46	-0.06	-0.21	0.10	-0.11	0.00	0.08	-0.23
Avoided being with people in general	0.17	**0.68**	-0.30	0.08	0.38	0.03	0.11	0.13	-0.09	0.12
Refused to believe that it happened	-0.04	**0.67**	-0.18	0.07	0.40	0.03	0.02	-0.06	-0.09	0.20
Tried to reduce tension by eating more	0.23	**0.63**	0.43	-0.11	-0.01	-0.25	-0.04	0.11	-0.23	-0.06
Tried to reduce tension by drinking more	0.18	**0.58**	0.34	-0.04	-0.33	0.00	-0.31	0.23	0.08	-0.19
Tried to reduce tension by taking more tranquilizing drugs	0.01	**0.57**	0.47	-0.09	-0.11	0.04	0.35	-0.06	-0.18	-0.13
Tried to reduce tension by exercising more	0.24	0.41	0.10	0.04	0.38	0.10	0.21	-0.18	0.04	0.19
Talked with spouse or other relative about the problem	0.06	-0.08	**0.61**	0.47	0.13	-0.20	0.15	-0.01	0.33	0.17
Considered several alternatives for handling the problem	0.35	-0.35	0.44	0.17	0.19	0.21	0.09	-0.22	-0.19	0.06
Made myself things that helped me feel better	0.46	0.08	-0.06	-0.54	-0.27	0.04	-0.09	0.21	-0.04	0.20
Sought help from persons or group with similar experiences	0.38	0.19	-0.34	0.45	-0.17	0.23	-0.05	-0.23	0.06	-0.14
Made a promise to myelf that things would be different next time	0.08	0.12	-0.08	-0.31	-0.44	-0.25	0.40	-0.31	0.01	0.36
Prayed for guidance or strength	0.10	0.05	0.02	-0.17	-0.08	**0.72**	0.40	-0.02	-0.02	0.21
Tried to find out more about the situation	0.48	-0.04	0.34	0.24	0.15	-0.51	0.11	-0.02	0.11	0.26
Took it out on other people when I felt angry or depressed	-0.02	0.22	-0.26	0.13	0.15	-0.23	0.31	0.27	0.15	-0.22
Talked with friend about the problem	0.22	-0.25	0.22	0.11	0.07	0.32	0.20	**0.64**	0.16	0.01

Kaiser-Meyer-Olkin Measure of Sampling Adequacy =0.619

Bartlett's Test of Sphericity ($\chi 2 = 1332.3$, $p<0.001$)

4.Discussion

This study focused on identifying coping mechanisms used by nurses in the context of maternal and perinatal mortality. Numerous studies found problem-solving focus as one of the most frequent strategies used by nurses to overcome a stressful environment[15-18] Most healthcare professionals consider looking for the fundamental source of the problem and attempt to manage or change the problem causing the stress. In contrast, in our study, acceptance/adaptation was found to be the important coping strategy used by participants to handle stressful situations. This could be interpreted to mean that being faced with such distress could be perceived as being in a situation where the problem is seen as unalterable and, as such, people feeling that they just have learn to live with it.

Substance use has been mentioned as a common stress-reducing mechanism used by nurses[19,20] and nursing students[21], while high levels of work-related stress have been shown to increase disordered eating[22,23] and lead to poor coping skills[24,25] Not surprisingly, in our study substance use and binge/emotional eating were important coping strategies used by nurses. Reasons for this were not documented in our study, however, factors such as working conditions[8], shortage of staff[26], frequent exposure to perinatal and maternal deaths[27,28] and access to controlled prescription-type drugs, which can increase the risk of drug abuse[29,30], could contribute. It was also noted that the

negative impact of distress and trauma led to psychological disorders that tend to push individuals towards self-medication in an attempt to bring about some sense of balance in the vulnerable states induced by their circumstances, which means that the effects of trauma history on psychological distress are partially mediated by substance misuse[31].

Our study revealed that, although a denial and avoidance strategy is less used, Intensive Care Unit nurses mainly adopted the coping strategy of denial/avoidance[32]. This finding indicates that nurses deny the existence of a problem and withdraw from people, which implies that they use negative coping mechanisms[33]. Psychological support and counselling may help nurses in this rural province handle stressful situations better. This study found that another important strategy used by nurses to manage stressful situations is a spiritual coping strategy. Studies in faith and non-faith-based health facilities found that a spiritual coping strategy is the strategy most commonly used by clinical nurses to cope with occupational stress[17,18,34]. Spirituality is not unexpected in our settings since most nurses pray every morning before the shift starts. Finally, seeking social support involves efforts used to obtain information and emotional support from friends, spouses or other relatives about the problem. In our study, seeking social support was the least method used by participants; however, this strategy has always been an important coping strategy for confronting and handling stressful situations[35-37].

5.Conclusion

This study has yielded important findings that could be used to inform decision-making in terms of improving the workplace environment. The results of our study suggest that negative coping is the most frequently used strategy, which is an ineffective way of coping.33 Therefore; it is recommended that psychological support programs should be implemented to deal with stressful situations at work.38

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