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Comparative study of knowledge and practice regarding diabetic foot ulcer management amongst the staff nurses working in hospital setting and peripheral health care centers of Vijayawada, Andhra Pradesh, India

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Abstract
Diabetic mellitus is a metabolic disease caused by deficiencies of insulin. Diabetic foot ulcer is a long term complication of diabetes mellitus. The annual incidence of DFU is 3% to 10%. Staff nurses are important members of health care team and have an essential role in prevention and management of DFU. Our study aimed to assess of knowledge and practice regarding diabetic foot ulcer management amongst the staff nurses working in hospital setting and peripheral health care centers. A cross sectional comparative study was done in St. Ann's hospital Vijayawada and peripheral health centers (including primary health centers, sub centers) in Vijayawada over a period of one month. A structured questionnaire and practice check list was prepared to assess nurses' knowledge and practice regarding DFU management. The statistical findings revealed that nurses working in hospitals have more knowledge and practice (Mean knowledge score: 23.83, mean practice score: 8.43Mean) compared with the nurses working in peripheral health centres (knowledge mean: 19.73, practice mean: 7.83.). It was also observed that there was a significant correlation between knowledge and practice at 0.05 level of significance among both groups. So the study concludes by focusing on importance of in service educational programmes for nurses to improve knowledge and practice.

Keywords: DFU (diabetic foot ulcer), staff nurses, hospitals, peripheral health care centres, knowledge and practice

Introduction

Diabetes is fast gaining the status of potential epidemic in India and more than 537million diabetic individuals are currently diagnosed. The prevalence of diabetes is predicted to double globally from 171 million in 2000 to 643 million by 2030 [1]. Studies have indicated that diabetic patients have up to 9.25% life time risk of developing a foot ulcer.

Even though the Indian urban population has access to reliable screening methods and treatment, such health services are not often available to the rural patients. In adequacies in treatment, lack of guidelines, care and counseling can lead diabetic patients to suffer from diabetic complications. Diabetic foot ulcer is one of the major complication of diabetes [2]. 20% of all diabetics may develop DFU, out of which 50% become infected requiring hospitalization, while 20% need amputation [3]. DFU's contribute to approximately 80% of all non-traumatic amputations in India. Regular evaluation, foot care, early treatment are the most effective measures to prevent devastating diabetic foot complications [4].

Nurses are the important members of health care team who will have direct contact with patients and family to provide direct and in direct health care. Nurses with best knowledge and good practice can assess diabetic patients and implements measures to prevent and treat DFU's among diabetic patients. So our area of interest is to assess and compare the knowledge and practice of staff nurses working in hospitals and community health care settings.

Aim

The study is aimed to compare the level of knowledge on DFU and practice of foot care among the staff nurses working in hospital setting and peripheral health care centers of Vijayawada, Andhra Pradesh.

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Methodology
Research approach
Quantitative research approach.

Research design
Comparative descriptive design.

Population
Staff nurses.

Sample
Staff nurses working in hospital setting and peripheral health care centers of Vijayawada.

Sampling method
Convenient sampling.

Sample size
60 (30 from staff nurses working in St. Ann's hospital, Vijayawada and 30 from staff nurses working in peripheral health care centers).

Informed consent was obtained from all study participants after explaining the procedure of study with the help of information sheet along with questionnaire.

Description of the tool
a) Socio demographic data
b) Knowledge questionnaire on DFU
c) Practice check list of foot care

Data analysis
Data analysis was done by using descriptive and inferential statistics.

Results
A total of 60 staff nurses were enrolled in the study, 30 working in hospitals and 30 from peripheral health centers. The average age of working in the hospital was 34.5 yrs, while for the nurses working in health centres was 32.8 yrs. The average work experience was 3.5 yrs and 3.8 yrs for the hospital nurses and nurses at health centres respectively**.** Both groups had experience in treating DFU's and they were using medical antibiotic therapy and surgical interventions. To the surprise nurses at health centres had no opportunity to attend training programmes on DFU whereas hospital nurses had enough training sessions. The main source of knowledge for the both groups is internet

The nurses had moderate to good knowledge regarding DFU management. The mean knowledge score is 23.83 with SD 2.718 for the nurses working in hospitals whereas the mean knowledge score is 19.73 with SD 2.935 for the nurses working in peripheral health centers. This implies hospital staff nurses are having more knowledge compared with the nurses working in community health centres. The practice scores were also more in the hospital staff with mean 8.43 than the nurses working in health centers with the mean practice score 5.83.

The statistical analysis has shown the significant correlation between knowledge and practice scores at 0.01 level of significance among both groups. (r value 0.673).There was a significant association found between the demographic variables like experience and training on DFU with the knowledge and practice scores at 0.05 level of significance.

Discussion
Nurses have basic knowledge in DFU prevention and management irrespective of their setting of practice. Since no training activities and in-service education programmes were planned for nurses at health centres the knowledge and practice scores are comparatively less among them than nurses practicing at hospitals. In the rural areas where the health care services are not much available and accessible to people due to shortage of man power and resources, nurses are the only hope to care for diabetic patients. Nurses needs updated knowledge and skill to identify the diabetic foot complications and provide best treatment. Nurses should get actively involved in health education programmes to provide knowledge to diabetic patients regarding foot care, diet exercises etc. Government should take initiation to improve the infrastructure at health centres and organize in - service education programmes to the nurses to upgrade their knowledge and improve practice to prevent and manage DFU's.

Conclusion
It is necessary to conduct and organize hands on training and in service education programs to the nurses working at different level of health care setting to impart best knowledge and improve practice, in order to bring down the complications of DFU by providing better care and education to diabetic patients in rural and urban areas.

Table 1: Shows the demographic distribution of participants of both groups

	Sample from Hospital		Sample from Peripheral health centres	
Variable	**Frequency (n)**	**Percentage (%)**	**Frequency (n)**	**Percentage (%)**
Age				
20-30 yrs	3	10	4	13.3
31-40 yrs	16	53.3	19	63.3
41 to 50 yrs	11	36.7	7	13.3
Above 51 yrs	0	0	0	0
Education				
B.Sc nursing	23	76.7	26	86.7
Postbasic B.Sc nursing	7	23.3	4	13.3
Experience in years				
1-2 yrs	7	23.3	5	16.7
3-5 yrs	21	70.0	20	66.7
Above 6 yrs	2	6.7	5	16.7
Experience in treating DFU				
Yes	30	100	30	100

No	0	0	0	0
If yes, type of treatment followed				
Medical antibiotic therapy	18	60	26	86.7
Surgical interventions	12	40	4	13.3
Adjuvant therapy	0	0	0	0
Combination of allopathy and adjuvant therapy	0	0	0	0
Underwent any training programme on DFU				
Yes	27	90	3	10
No	3	10	27	90
Source of knowledge				
Collegues	7	23.3	3	10
Books and journals	9	30	4	13.3
Internet	11	36.7	21	70
seniors	3	10	2	6.7

Table 2: Showing the knowledge and practice mean scores of staff nurses working in hospitals and peripheral health centres

	N	Scores among nurses working in hospital				Scores among nurses working in health centres			
		Minimum	Maximum	Mean	SD	Minimum	Maximum	Mean	SD
Knowledge scores	30	18	28	23.83	2.718	15	26	19.73	2.935
Practice scores	30	6	10	8.43	1.040	5	10	5.83	1.416
N	30								

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