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An Interventional Study to Assess the Self Instructional Module on Preventive Education of Foot Care in *Prameha*

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ABSTRACT

BACKGROUND: *Prameha* is one among the *Ashtamahagada Vyadhi*. If, *Prameha* is neglected and proper therapy is not given, then it can lead to the manifestation of *Prameha Pidaka*. The *Prameha Pidakas* or the *Upadravas* of *Prameha* can be co-related with the complications of Diabetes. The foot complications in Diabetes are the most frequently seen complication in Diabetes. Early recognition and management of independent risk factors for ulcers and amputations can prevent or delay the onset of adverse outcomes. As explained in the *SwasthaChathushka*, the care of the foot is highlighted in *Dinacharya* context. Health Education can help to extend knowledge and to strengthen desired behaviour patterns. So here the study was conducted as a health education in the form of a Self Instructional Module in order to increase the awareness of foot care among the *Prameha* patients.

OBJECTIVES: To assess the knowledge of foot care before and after implementation of Self Instructional Module among *Prameha* patients.

METHODOLOGY: An Interventional study was conducted after selecting 100 subjects from the hospital as per inclusion and diagnostic criteria, by the set of questionnaires regarding the Knowledge of Diabetic foot and Diabetic foot care and then the assessment of knowledge before and after implementation of Self Instructional Module was carried out. The results obtained from the above parameters were statistically analyzed and conclusion were drawn.

RESULTS: The overall knowledge regarding Diabetic foot among *Prameha* patients was 18.23% in pre-test and 99.15% in post-test. The overall knowledge regarding Diabetic foot care among *Prameha* patients was 56.43% in pre-test and 89.43% in post-test.

CONCLUSION: The study concluded that the Self Instructional Module was effective in improving the knowledge regarding Diabetic Foot and Diabetic Foot care among *Prameha* patients.

Key Words *Prameha, Prameha Pidaka, Health education, Self Instructional Module, Diabetic foot*

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INTRODUCTION

In the present era, due to urbanization the lifestyle modalities have changed drastically,

resulting in various disorders. Among them Diabetes Mellitus is being a major disorder to

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cause distress over the individuals for its chronicity and complications.

Acharyas mentioned *Prameha* under *Ashtamahagada*¹. From *Nidana* to *Arishta lakshana* many features of *Prameha* are related to Diabetes. Among this *Prameha Pidaka* is one of the major complications of *Prameha*. According to *Acharya Susruta*, wound in *Prameha* are very difficult to cure².

Diabetic patients if undiagnosed or inadequately treated, develop multiple chronic complications resulting in irreversible disability and death. Lower limb amputations are at least 10 times more common in Diabetics than non-Diabetic individuals⁶. Prevention of such diabetic complications comes in the secondary level of prevention. A crucial element in this level is self-care.

Health education is the foundation of preventive health care system. So preventive education in the form of Self Instructional Module plays an important role in prevention and care of Diabetic foot. Thus, this study is done to increase awareness of foot care among the *Prameha* patients.

OBJECTIVES

To assess the knowledge of foot care before and after implementation of Self Instructional Module among *Prameha* patients.

REVIEW OF LITERATURE

Prameha Pidaka is one of major complications of *Prameha*. *Pidakas* are formed as a result of

vitiation of *Vasa* and *Medas* also all together act as *Madhumeha Upadrava*. *Acharya Vagbhata* and *Susrutha* has mentioned 10 types of *Prameha Pidakas*^{7,8}. The *Chikitsa* explained for *Prameha* are *Nidana parivarjana*, *Shodhana* and *Shamana*. *Prameha pidaka yukta prameha* is considered to be *Asadhya*⁹. The Ayurvedic preventive aspects of *Prameha Pidaka* includes the *Pathya Ahara* and *Vihara*, *Dinacharya* procedures for protection of feet like *Padabhyanga*, *Padaprakshalana* and *Padukadharana*.

Diabetic foot is one of the complications of Diabetic mellitus. Lower extremity diseases such as peripheral arterial disease, peripheral neuropathy, foot ulceration or Lower Extremity Amputation are known to occur twice as commonly in diabetes as compared to nondiabetics¹⁰. Amputation is that the worst and costliest complication related to foot ulcers. Early recognition and management of independent risk factors for ulcers and amputations can prevent or delay the onset of adverse outcomes. The prevention of such complications of Diabetes comes in the secondary level of prevention. The primary prevention of Diabetic foot includes all the measures to control Diabetes mellitus like education of patients about the importance of Nutrition, Exercise and also education regarding the risk of developing foot complications in Diabetic patients. The secondary prevention of Diabetic foot includes the early diagnosis of the diabetic foot problem and adopting appropriate treatment modalities. The tertiary prevention

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includes rehabilitative measures i.e., both physical as well as psychological rehabilitation.

MATERIALS AND METHODS

Source of Data:

Prameha patients were selected from the hospitals in Rural Moodubidire.

Sample Source:

Minimum of 100 *Prameha* patients admitted in selected Hospitals in Rural Moodubidire.

Method of Collection of Data:

After obtaining permission from the concerned authority and informed consent from the samples the data was collected in 2 Phases.

1) A set of standard questionnaires regarding knowledge about Diabetic foot and Diabetic footcare was administered to get the background information and assess the pretest knowledge of Diabetic foot and footcare from the Diabetic patients on the 1st day. On the same day Self Instructional Module on Diabetic foot was issued to the Diabetic Patients

2) The same questionnaire was administered on the 15th day to assess the post test knowledge after introducing the Self Instructional Module.

Sampling Procedure:

The sampling technique selected for the study was Purposive sampling technique

Diagnostic Criteria:

1. Based on *Lakshanas* of *Prameha*
2. Based on American Diabetic Association Criteria – RBS: ≥ 200 mg/dl,
FBS: ≥ 126 mg/dl, PPBS: ≥ 200 mg/dl

Inclusion Criteria:

1. Patients admitted in the selected hospitals with *Prameha* who are willing to participate in the study.

2. Patients with *Prameha* who are available during data collection.

Exclusion Criteria:

Patients admitted in the selected hospital with *Prameha* who are not willing to participate in the study.

Assessment Criteria

A set of Structured questionnaires was framed regarding knowledge about Diabetic foot and Diabetic foot care.

Questionnaire consist of 3 parts:

Part 1 - General information of the patient

Part 2 – Knowledge regarding Diabetic foot

Part 3 – Knowledge regarding Diabetic foot care

The questionnaire was also translated to Kannada language.

Study Design

➤ **Pre and Post test design**

➤ **Development of Self Instructional Module**

The Self Instructional Module is a learning package, planned and prepared from the beginning till the end with an aim to facilitate self learning.

The main factors kept in mind while preparing information were, the understanding level if patient language and relevance of illustration and picture.

Self Instructional Module prepared for the study was divided into the following headings:

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- Definition of Diabetic foot
- Risk factors of foot problem
- Causes of Diabetic foot
- Warning signs of Diabetic foot
- Common Diabetic foot problems
- The preventive aspects of Diabetic foot like Caring for feet, Tips for proper foot ware, Diabetic shoes and socks, Tips for healthy lifestyle, and the information regarding how to use glucometer.
- Information regarding the Ayurvedic preventive aspects like benefits of *Padabhyanga*, *Padaprakshalana* and *Padukadharana*

The Self Instructional Module was also translated to Kannada language.

➤ **Setting of the study**

The study was conducted in Alva's Health Centre, Moodubidire. The criteria for selecting this setting were geographical proximity, feasibility of conducting study, availability of samples, and familiarity with the particular setting.

The study was conducted during December 2020-February 2021. After selecting subjects from the hospital as per inclusion and diagnostic criteria, an interview was conducted by the set of questionnaires regarding the Knowledge of Diabetic foot and Diabetic foot care and then the assessment of knowledge before and after implementation of self-instructional module was assessed. The results obtained from the above parameters were statistically analyzed and conclusion were drawn.

OBSERVATION AND RESULTS

Distribution based on Demographic data:

The age group of the study subjects ranged from 30-70 years. About 56% were from 50-60 years of age group. Gender wise, 68% were of female gender. Religion wise, maximum number of study subjects were Hindus. Education wise, 56% of the study subjects had Primary education. Occupation wise, 38% were unemployed. Socio economic status wise, 44% of the study subjects were from upper middle class. Family history of Diabetes was present in 53% of the study subjects. Duration wise, 60% of the study subjects had < 10 years of duration of Diabetes. Diet wise, 82% of study subjects were following mixed diet. Personal habit wise, 38% of study subjects had the habit of taking both Tea and Coffee. Addiction wise, 67% of study subjects didn't have any addictions like Smoking, Alcohol, and Tobacco chewing.

Distribution based on Diabetic foot examination:

Dorsalis pedis pulse, Posterior tibial pulse and Capillary refill was present in all the 100 study subjects. Dryness on foot was present in 49% of study subjects and 42% of study subjects had burning sensation on foot. Cracking on foot was present in 36% of study subjects and 13% of study subjects had discolouration of skin. Minor lesions or ulcerations was present in 9% of study subjects and 7% study subjects had toe deformity. Abnormal shape of the foot and swelling on foot was present in 5 % of the study

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subjects. Only 3% of study subjects had Corns and Calluses on foot. No one had any loss of touch sensation and Ingrown toe nails.

Distribution on footwear assessment

Out of 100 study subjects, about 90% were not wearing appropriate footwear.

Table 1 Overall knowledge regarding Diabetic Foot

Overall Knowledge regarding Diabetic foot	Pre test		Post test	
	Frequency	Percentage	Frequency	Percentage
Diabetic foot as complication of Diabetes Mellitus	26	26	100	100
Reason behind Diabetic foot	26	26	100	100
Lack of feeling as Signs & symptoms of Diabetic foot	26	26	100	100
Change of skin color as Signs & symptoms of Diabetic foot	12	12	100	100
Increased swelling of legs/feet as Signs & symptoms of Diabetic foot	7	7	93	93
Burning or tingling sensation as Signs & symptoms of Diabetic foot	6	6	96	96
Common Diabetic foot problem	23	23	100	100
Prevention of Diabetic foot is better than treatment	25	25	100	100
Knowledge about Diabetic footwears	9	9	100	100
Consulting physician if there is wound	17	17	100	100
Smoking & alcohol favor Diabetic foot	24	24	100	100
Do annual foot checkup	11	11	100	100
Uncontrolled blood sugar increase risk of foot problem	25	25	100	100
Total	237	18.23%	1289	99.15%

Table 2 Overall knowledge regarding Diabetic Foot care

Overall knowledge regarding Diabetic Foot care	Pre-test		Post-test	
	Frequency	Percentage	Frequency	Percentage
Examination of Feet	26	26	80	80
Check shoes before wearing	54	54	100	100
Wash feet daily	100	100	100	100
Feet are dry after wash	57	57	100	100
Dry between toes	30	30	100	100
Use Moisturizing cream/oil	16	16	92	92
Cut toenails straight and shape edges	100	100	100	100
Never wear sandals/slippers	12	12	35	35
Never wear Pointed toed shoes	60	60	86	86
Never walk around house in barefoot	19	19	60	60
Never walk outside in barefoot	81	81	100	100
Never wear shoes without socks	51	51	78	78
Change footwear if damaged/ill fitting	92	92	100	100
Never use corn remedies/corn plasters	57	57	100	100
Never put dry dressing on a cut or burn	48	48	100	100
Keep feet away from too hot/too cold temperature	100	100	100	100
Total	903	56.43%	1431	89.43%

Table no 1 shows the overall knowledge regarding Diabetic foot. Out of 100 study subjects, 18.23% had the overall knowledge regarding Diabetic foot in pre-test and 99.15%

had the overall knowledge regarding Diabetic foot in post-test.

Table no 2 shows the overall knowledge regarding Diabetic foot care. Out of 100 study

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subjects, 56.43% had the overall knowledge regarding Diabetic foot care in pre-test and 89.43% had the overall knowledge regarding Diabetic foot care in post-test.

DISCUSSION

Demographic characteristics

The present study shows that, Majority of study subjects were from age group of 50-60 years this may be because as age advances the risk of Diabetes mellitus increases due to the combined effects of accelerating insulin resistance and impaired pancreatic islet function with aging. The risk for developing a diabetic foot problem also increases by the age. Majority (72%) were from Hindu religion this may be due to the predominance of Hindu community in Moodubidire. Majority (38%) were unemployed, this may be because in this study majority of them were females and were housewives. Majority (60%) were having < 10 years of duration of diabetes. The foot complications in diabetes are more commonly seen in patients with longer duration of Diabetes. Majority (67%) were not having any habits like smoking, alcohol and tobacco chewing. This may be because majority of them were females. Majority (40%) were taking only oral medication as a method to control Hyperglycemia; this may be due to the lack of knowledge about the importance of diet and exercise in DM and preventing its complications.

Diabetic foot examination

Majority of the study subjects did not have any grave foot problems this may be because, as it was observed in the study that 60% of the study subjects were having shorter duration of Diabetes. The foot complications are more seen in the patients having longer duration of Diabetes I.e., >10 years.

Footwear assessment

Majority of study subjects were not wearing appropriate footwear. This may be probably because in this study it was observed that about 91% did not had any knowledge regarding Diabetic footwears. Diabetic footwears are lightweight and it is made up of soft materials, it will also have a shock-absorbing sole, which will help relieve pressure on the bottom of foot.

Overall knowledge regarding Diabetic foot and Diabetic foot care

In this present study, in pre-test, 18.23% had the overall knowledge regarding Diabetic foot. This indicates that the lack of knowledge about Diabetic foot among the diabetic patients. This could be due to their low educational background, infrequent visit to hospitals or insufficient foot care education being imparted by the healthcare team as well as by negligence of the people.

In pre-test 56.43% had overall knowledge regarding Diabetic foot care. This may be probably because even though they did not have the knowledge regarding Diabetic foot, they were following some of the personal hygienic practices like washing feet daily, cut toenails straight and shape edges and keeping feet away from too

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hot/too cold temperature without knowing the importance of it in Diabetic foot.

In post-test, out of 100 study subjects 99.15% had the overall Knowledge regarding Diabetic foot, and 89.43% had overall knowledge regarding Diabetic foot care. This indicates that the level of knowledge regarding Diabetic foot and foot care has been improved after implementing the Self Instructional Module.

CONCLUSION

- The Self Instructional Module acted in both ways as a Primary prevention in those who didn't had any foot complications and as a Secondary prevention for those who had foot complications.
- There was 80.92% of difference in overall knowledge regarding Diabetic foot.
- There was 33% of difference in overall knowledge regarding Diabetic foot care.
- This study concluded that the Self Instructional Module was effective in improving the knowledge regarding Diabetic foot and Diabetic foot care among *Prameha* patients.
- Since Diabetic foot is preventable, dissemination of the knowledge regarding Diabetic foot and Foot care at each level of care must be improved.
- In the absence of an active teaching learning session on foot care among Diabetic patients Self Instructional Module can be utilized to educate the patients.

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