A study to assess the knowledge of Karaya powder application on diabetic wound healing among diabetic mellitus patients

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**ABSTRACT**
Diabetes mellitus is a serious debilitating longtime illness that grows in nearly 5% of the world’s peoples. People with this illness have a shortage of insulin or lessen capacity to use insulin; the hormone controlled blood glucose level. The study aims to assess the Karaya powder application among diabetic mellitus clients. The study was conducted in Mappedu village with 60 samples. The data was collected by using Structure interview questionnaires on Karaya powder. The result revealed that extract has significant effect increase knowledge on Karaya powder application on diabetic wound healing among diabetic clients.

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**INTRODUCTION**
Diabetes mellitus is a serious debilitating longtime illness that grows in nearly 5% of the world’s peoples. People with this illness have a shortage of insulin or lessen capacity to use insulin; the hormone controlled blood glucose level. According to the World Health Organization, more than 2 million people worldwide have diabetes from which more than 70% live in low and middle-income countries. According to an estimate by international diabetes federation 80% of people with diabetes live in low to middle-income countries, including India. India has the largest number of diabetic patients in the world after China. India is home to 69.1 million patients with diabetes mellitus with an overall generality of 9.3%. Regional generality of diabetes varies from as low as 5.3% in Jharkhand to 10.4% in Tamil Nadu and 13.6% in Chandigarh (Lauterbach et al., 2010). The age regulate generality of diabetes and pre-diabetes where 11.2 and 13.2% separately in a community based India it is also estimated that still majority of the population that is 52.1% remain undergone accounting for another 36.1 people. The world health organization took a note of the magnitude of the disease and the theme of “world health day” on April 7, 2016, was made” BEATDIABETES “to create awareness. In a multicentre from India on patients with diabetes prevalence of neuropathy was found to be 15% and peripheral vascular disease 5%. A thorough systemic examination should be done to evaluate the severity of a potential infectious process, including the features of systemic inflammatory response syndrome, hypothermia, hyperthermia, hypotension tachycardia, Tachypnea (Katsilambros et al., 2010). Once diabetic foot ulcer is developed, it can lead to contamination, necrosis surgical removal, and even death if necessary care is not provided. The rate of lower limb amputation in patients with diabetic mellitus is 15 times higher than other. According to epidemiological studies the number of patients with DM increase from about 30 MILLION IN 1985 and estimated of about more than 360 million by 2030. There is lot complication associated DM- dia-
diabetes nephropathy, diabetic neuropathy, diabetic retinopathy, depression, cardiac disease. A diabetic foot ulcer is the most expensive and difficulty of diabetes mellitus, which affects 15% of a diabetic patient. Based on the national institute for health and clinical excellence scheme, advance successful management of diabetic foot ulcer can reduce the severity of complications, and also can improve the overall quality of life. The management of diabetic foot ulcer should be optimized by using a multidisciplinary team. Based on studies, blood sugar control (Moxey et al., 2011). Furthermore, surgery to heal the longtime ulcer and prevent recurrence should be considered as an essential component of management in some cases. Also, hyperbaric oxygen therapy, electrical stimulation, pessimistic pressure wound therapy, technological skin and growth factors could be used as an adjunct therapy for quick healing of diabetic foot ulcer. So, it’s suggested that with appropriate patient education encourages them to regular foot care in order to prevent diabetic foot ulcer and its complications (Mariam et al., 2016; Benotmane et al., 2015). The rate of lower limb amputation in patients with DM is 15 times higher than patients without diabetes it is estimated that approximately 50% to 70% of all lower limb amputation are due to diabetic foot ulcer in addition it is reported that every 30’s one legist amputated due to diabetic foot ulcer in worldwide furthermore diabetic foot ulcer is responsible for substantial emotional and physical distress, as well as productivity and financial, lose that over the quality of life (Shankhdhar et al., 2016; Cerf et al., 2015; Singh and Pal, 2008). The management modalities include education, blood sugar control, surgical procedure, advanced dressing, advanced surgery therapies, hyperbaric oxygen therapy, electrical stimulation, negative pressure wound therapy, bioengineered skin. In advanced dressing, the categories' used, films, hydrocolloids, alginates, foam, silver-impregnated and Karaya powder dressing (Setia et al., 2010). Hence, the investigator determined the effectiveness of Karaya powder application in the improvement of wound healing in every patient with diabetic foot ulcer.

MATERIALS AND METHODS

A quantitative approach was used in this study. A descriptive design was chosen to assess the effectiveness of karaya powder regarding wound healing of foot ulcer among patients with diabetes mellitus. The study was conducted in mappedu village. The setting was chosen on the basis of feasibility in term of availability of adequate sample and cooperation extended by the management and other health care team members. The target group of the study is all clients with type 2 diabetic mellitus in mapped village. Patients with diabetic mellitus who meet the inclusion criteria were selected as the sample for the study. The sample size was 60. Purposive sample technique was used by the investigator. Inclusion criteria are Patients with a diabetic foot ulcer that was in the age group between 40 - 60 years, Patients who were able to understand Tamil or English and Patients who were ready to join in the study and Known cases type 2 DM. The study includes both men and women. Data was collected using a structured interview schedule to assess demographic profile and level of knowledge on Karaya powder application on diabetic wound healing.

RESULTS AND DISCUSSION

The present study consequence show that Age 20(33.33%) were 40-45 years, 15(25%) were 51-55 years, 13(21.66%) were 46-50 years, 14(23.33%) were above 56-60 years, Sex 37(61.66%) were male, 23(38.33%) were female, Marital status 47(78.33%) were Married, 1(1.66%) were unmarried, 12(20%) were widows, Education 20(33.33%) were non formal education, 16(26.66%) were primary, middle school education, 22(36.66%) higher secondary school education, Occupation 9(15%) were housewife, 38(63.33%) were self employee/collie, 2(3.33%) were government employee, 11(18.33%) were farmer, Income 17(28.33%) were RS.5000, 23(38.33%) were RS. 5000-10,000, 20(33.33%) were Above 5000, Residence 60(100%) rural, Religion 52(86.66%) were Hindu, 8(13.33%) were Christian, Dietary pattern 28(46.66%) were normal diet, 32(53.33%) were diabetic diet, Duration of illness 20(33.33%) were <2 years, 14(23.33%) were 2-5 years, 16(26.66%) were 5 years, 10(16.66%) were more than 5 years.

Table 1: Frequency and percentage distribution of the level of knowledge among patients with diabetic mellitus (N=60).

<table>
<thead>
<tr>
<th>Level of knowledge</th>
<th>Frequency (N)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inadequate knowledge</td>
<td>27</td>
<td>45%</td>
</tr>
<tr>
<td>Moderate knowledge</td>
<td>23</td>
<td>38.33%</td>
</tr>
<tr>
<td>Adequate knowledge</td>
<td>10</td>
<td>16.66%</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Table 1 shows the frequency and percentage distribution of level of knowledge on karaya powder application on diabetic wound healing among diabetic mellitus client. The data revealed that, 27(45%) had inadequate knowledge, 23(38.33) had moderate knowledge, and 10(16.66%) had adequate knowledge of karaya powder application on diabetic wound healing. (Table 1 & Figure 1)

The present study reveals that the mean and standard deviation on a selected level of Karaya powder application on diabetic wound healing among diabetic mellitus client. The investigator obtained formal permission from the village head and period of data collection was one week, in which the data was collected from 60 samples, they were residing in Mappedu village on diabetic wound healing mean value is 10.33, and the standard deviation is 2%.

Foot complications are common in diabetic patients and are considered one of the most expensive diabetic complications to treat. The management of patients with diabetic foot ulcer is complex to plan for a proper care provider is to assess the wound healing in order to provide the effective care to avoid amputations and promote wellbeing and quality of life of the patients with a diabetic foot ulcer.

The present study intensively analyzed the karaya powder application on diabetic wound ulcer healing and found statistically significant in improving wound healing. Level of knowledge on karaya powder application on diabetic wound healing among diabetic mellitus client. The data revealed that 27(45%) had inadequate knowledge, 23(38.33) had moderate knowledge, and 10(16.66%) had adequate knowledge of karaya powder application on diabetic wound healing. The study supported by (Benotmane et al., 2015) had studied and reported that karaya powder wound dressing antimicrobial nature of the sterculia gum ad second due to the controlled and sustained manner. In the sterculia gum to develop the novel wound dressing foe the delivery of antimicrobial agent (Benotmane et al., 2015).

Mean and standard deviation on the selected level of Karaya powder application on diabetic wound healing among diabetic mellitus client. The investigator obtained formal permission from the village head and period of data collection was one week, in which the data was collected from 60 samples, they were residing in Mappedu village on diabetic wound healing mean value is 10.33, and the standard deviation is 2%. Study supported by Shankhdhar, Shankhdhar et al. (2016) that featuring karaya, a natural skin barrier that is particularly good for sensitive skin, this powder protects the skin from irritation. Karaya powders also provide a natural bacteriostatic action and help prevent skin breakdown. Use sparingly to absorbed moisture or exudates from akin prior to applying a skin barrier (Shankhdhar et al., 2016).

CONCLUSIONS

The findings of the present study suggest that karaya powder is effective in improving the level of wound healing. There is no good evidence that one type of dressing is better than another for a diabetic foot ulcer. In selecting dressing for chronic non-healing wound, it is recommended that the cost of the product be taken into account. Therefore, suggest the karaya powder dressing might be applied in the effects can be evaluated for further improvement. There is a need for more investigation on the action of karaya powder on a diabetic foot ulcer.

REFERENCES


Mariam, T. G., Alemayehu, A., Tesfaye, E., Mequannt, W., Temesgen, K., Wale, F. Y., &limenih, M. A. 2016. Prevalence of Diabetic Foot Ulcer and Associated Factors among Adult Diabetic Patients Who Attend the Diabetic Follow-Up Clinic at the Univer-

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