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Myths about Diabetes in an Urban South Indian Population : Are we losing the perception battle ?

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ABSTRACT

Background: Myths and wrong beliefs about Diabetes are prevalent in our patient population and work against effective therapy for Diabetes

Methods: A prospective observational study was conducted on patients reporting to Diabetic clinic in an urban South Indian tertiary level hospital. In the pilot study, 100 diabetic patients were interviewed and the most common myths were tabulated. In phase II, 400 patients were interviewed and the prevalence of the myths studied. The results were then analyzed.

Results: The study showed that a large number of myths were prevalent in the patient population. Most common myths were that eating sugar causes Diabetes, Ayurveda and Homeopathy are better at treating Diabetes and that Insulin therapy is addictive and excessively painful. The study found that myths are common in all sections of our society, even in graduates and post-graduates. The study also found myths decrease as the duration of Diabetes increases.

Conclusions : This study concludes that a large number of myths are prevalent in the patient population in urban South India. Vigourous Health Education efforts are needed to counter these myths and wrong beliefs.

Keywords: Diabetes, Myths, Urban, South India

Introduction

Diabetes mellitus is a common disease encountered in our patients. India is home to 77 million Diabetics, with an urban prevalence of 10.9 to 14.2 percent [1] Health education of patients is an important aspect of diabetic therapy. There is severe lack of awareness about the existing interventions for management of Diabetes and its complications [2]. Many myths are encountered during the treatment of diabetic patients. Some of them are about medications especially Insulin, some about dietary aspects, and many about the disease itself. While some may be harmless, most of them are not and work against proper treatment of the diabetic patient. Among the myths, some are long standing beliefs, some spread by discussions among patients, and now a new phenomenon, spread by social media.

The present study was undertaken in a Diabetic population reporting to Medical OPD and Diabetes clinic in a Tertiary Hospital in Urban Bangalore, Karnataka, India. The aim was to evaluate the most common false beliefs about Diabetes and treatment of Diabetes.

Material and Methods

The study was a prospective observational study. This study was conducted on patients of Diabetes Mellitus Type 2 reporting to Medical OPD and Diabetes clinic in a Tertiary hospital in Urban Bangalore, Karnataka, India.

Inclusion criteria
Since this was an observational study on the prevalence of myths in the Diabetic population, all the patients who were Diabetic were eligible. All diabetic patients who reported to Medical OPD and Diabetes clinic and who consented to take part in the study were included in the study

Exclusion criteria
There were no exclusion criteria. All patients who consented to take part in the study were included.

Study Methods
Every patient who was included in the study was interviewed and counselled. Informed consent was taken for the study. Detailed history about Diabetes was taken. The patients were interviewed and specifically asked about **Educational qualifications** (illiterate / upto matric / upto graduate / graduate / post-graduate), **Socio-economic status** (Monthly salary used as a surrogate marker; monthly salary less than Rupees 30,000 / Rupees 30,000-2 Lakhs / more than Rupees 2 lakhs), **duration of Diabetes** (in years), **glycemic control** (good / poor /very poor). All patients included in the study were asked as above.

For information on myths, the study was conducted in two phases - Pilot sudy and Phase II study.

The pilot study was conducted mainly to enumerate the myths prevalent in the study population. In this part, detailed verbal interview was conducted to find out about the prevalent myths. They were then tabulated.

In the phase - II study, a larger number of patients were evaluated. The patients were interviewed using a standard questionnaire and the prevalence of myths studied. The use of a questionnaire enabled the study of a larger number of patients and allowed a statistical analysis.

For the purpose of the study, a myth was defined as any belief that the patient held but which was not true as per present knowledge and current guidelines on Diabetes Mellitus (as decided by Physician). For Socio-economic status, monthly income was used as a surrogate marker.

After the interviews, for all patients, a detailed health education session was conducted for all patients in an attempt to dispel the myths that the patient held. The health education session was conducted for a minimum of 20-25 minutes

The results were then tabulated and studied.

Statistical methods and Data Analysis

Database was created in MS Excel and analyzed using IBM SPSS (Statistical Package for Social Sciences) statistics software version 22. Data was presented in numbers, percentages and mean + SD. Other statistical methods used in the data analysis were Standard Error of difference between Two Means as per the nature of data. For statistical significance p value was considered at 5% level ($p < 0.05$).

Results

A total of 100 patients were interviewed in the pilot study and 400 patients interviewed in the Phase-II study.

The age profile of the patients is shown in Table 1 and Figure 1. Most of the patients were middle-aged and elderly. This seems quite natural as most were Diabetic patients of some duration. The gender profile of the patients is shown in Table 2 and Figure 2. The number of male and female patients were almost equal.

The educational profile of the patients is shown in Table 3 and Figure 3. Most of the patients were educated, mostly matriculates and graduates.

The Socio-economic profile of the patients is shown in Table 4 and Figure 4. Most of the patients were from the mid socio-economic strata of the society.

The duration of Diabetes in the patients is shown in Table 5 and Figure 5. Most of the patients had Diabetes ranging from 10 to 20 years.

The glycemic control profile of the patients is shown in Table 6 and Figure 6. There were patients of both good and poor glycemic control in almost equal numbers. Few had very poor glycemic control.

The most common myths that came to light and were studied were tabulated and the prevalence of myths was studied in Phase II. The results are shown as prevalence in Table 7 and the ten most common myths are noted in Table 8.

The prevalence of myths was analyzed with reference to age (Table 9, Figure 7), gender (Table 10, Figure 8), Educational profile (Table 11, Figure 9), Socio-economic status (Table 12, Figure 10), duration of Diabetes (Table 13, Figure 11) and glycemic control (Table 14, Figure 12).

Middle-aged and elderly patients had the most false beliefs. The distribution of myths was almost the same in all the genders.

In terms of educational profile, non-matriculates and matriculates had the most number of myths. Surprisingly, graduates and post-graduates also had a significant number of myths ,albeit a lower number. This is surprising as graduates and post-graduates are expected to have more awareness about their disease.

In terms of the Socio-economic profile, low and mid-income patients had more number of myths than the high-income patients. iabetes are prevalent in all strata of our society, even in the well-to-do and educated sections.

In terms of duration of disease, patients with lower duration of Diabetes had more myths than the ones with longer duration of disease. This was probably due to the effect of health education and inter-patient discussions as years passed. Many myths about insulin use are disspelled once the patient starts using insulin on a daily basis.

In terms of glycemic control, patients with good glycemic control had lesser number of myths than the patients with poor and very poor glycemic control. This is not surprising as patients

who take pains to educate themselves about the disease and disspell myths are expected to have better glycemic control

Discussion

Myths are common in any society. Myths about diseases are often based on superstitions and wrong beliefs. It is often very difficult to break these myths. However, disspelling myths is an important part of Health Education as very often, these myths and wrong beliefs interfere with effective treatment. The first step in breaking these myths is to identify the common prevalent wrong beliefs in the target population. This study was intended to achieve this aim.

We focussed on an urban patient population reporting to Diabetic clinic in South India. The Diabetic patient should be the most important part of our Health Education effort because it is the patient's knowledge or the lack of it that has a direct bearing on the success of treatment. The Diabetic clinic can be an important place for this education as the patient is receptive to education effort especially if the physician is also involved.

The most common myth that we found was that eating sugar causes Diabetes. Similar findings were found in a study by Mridula Rai et al [3]. Another myth that was common was that Ayurveda and Homeopathic treatment is better at controlling Diabetes. There were also many myths about Insulin therapy that Insulin therapy is addictive , painful and can only be given by doctors and nurses thereby leading to wrong beliefs about high costs. There were also myths that consuming butter and ghee is beneficial.

Previous studies have found patients often seek spiritual and herbal treatments before reporting to doctors (Nisar et al [4]). Another study reported patients abandoned traditional medicine when their serum glucose soared [5]. Performing hawans, pujas and going to faith healers for treatment is common in chronic diseases like diabetes, cancer and mental illnesses.[6,7] Similar myths were found in our study also.

An important finding in our study was the large number of myths prevalent in our patient population. If an urban population segment have such a large number of myths, one wonders whether the rural populace will have even larger number of myths. Another important and startling finding was that many myths are prevalent even in the educated strata of our society. Graduates and even post-graduate patients had wrong beliefs totally inappropriate for their level of education.

At this point, one wonders whether we are losing the battle of perception in our Health education efforts. Patients seem to be sourcing their knowledge from social media, youtube, whatsapp forwards and other uncertified sources rather than doctors and health educationists. Perhaps, it is time that the medical profession also engages our patient population on social media platforms.

Conclusion

This study concludes that a large number of myths are prevalent in the patient population in urban South India. Vigourous Health Education efforts are needed to counter these myths and wrong beliefs.

References

1. Govt of India, Govt of India Survey 2018-2019 for Diabetes

2. K Park. (2023).Park's Textbook of Preventive and Social Medicine, pg 446-451. Bhanot

3. Mridula Rai, Jugal Kishore. Myths about diabetes and its treatment in North Indian population. Int J Diabetes Dev Ctries. 2009 Jul-Aug; 29(3): 129–132.

4. Nisar N, Khan IA, Qadri MH, Sher SA. Myths about Diabetes Mellitus among non diabetic individuals attending primary health care centers of Karachi suburbs. J Coll Physicians Surg Pak. 2007;17:398–401

5. Rafique G, Furqan S. Identifying needs and barriers to diabetes education in patients with diabetes. J Pak Med Assoc.2006;56:347–52

6. Pradhan SC, Singh MM, Singh RA, Das J, Ram D, Patil B, et al. First care givers of mentally ill patients: A multicenter study. Indian J Med Sci. 2001;55:203–8

7. Kishore J, Ahmad I, Kaur R, Mohanta PK. Beliefs and perceptions about cancers among patients attending radiotherapy OPD in Delhi, India. Asian Pac J Cancer Prev. 2007;8:155–9

Table 1 : Age profile of patients enrolled in the study

Age	Pilot study n=100	Phase II study n=400	Total n=500
< 30 yr	1	5	6
30-40 yr	5	20	25
40-50 yr	33	146	179
50-60 yr	30	131	161
60-70 yr	21	68	89
> 70 yr	10	30	40

Figure 1 : Age profile of patients enrolled in the study
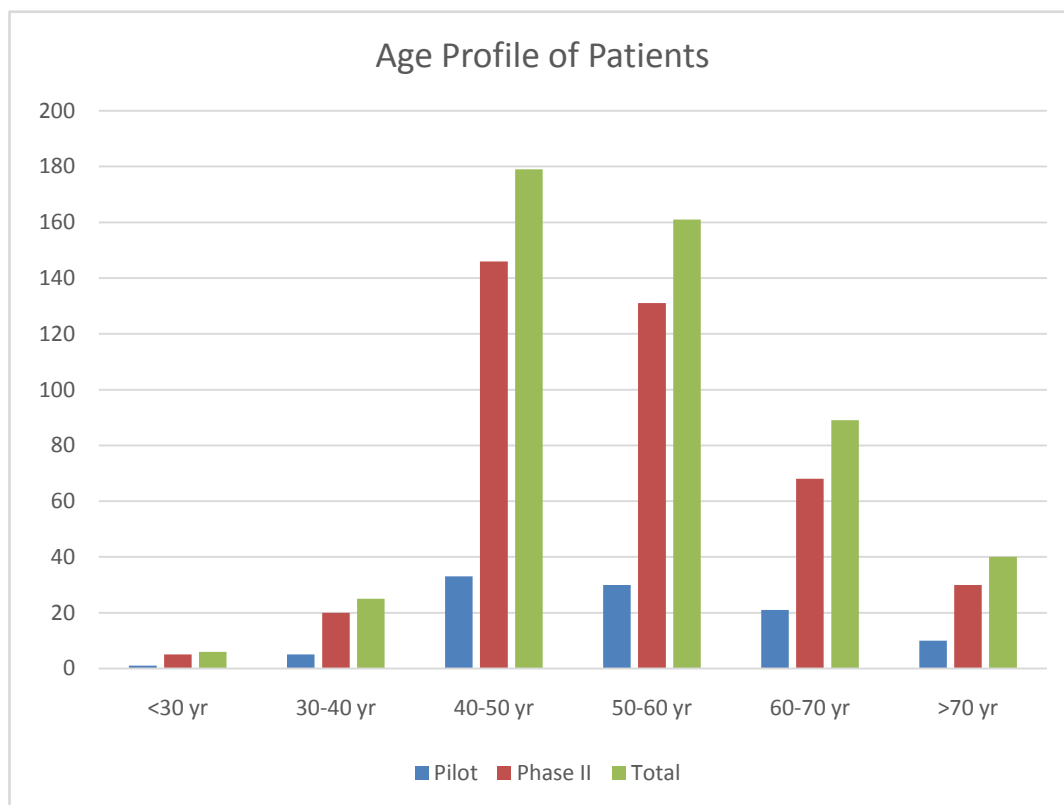
Table 2 : Gender profile of patients enrolled in the study

Gender	Pilot study n=100	Phase II study n=400	Total n=500
male	52	184	236
female	48	216	264
third gender	0	0	0

Figure 2 : Gender profile of patients enrolled in the study

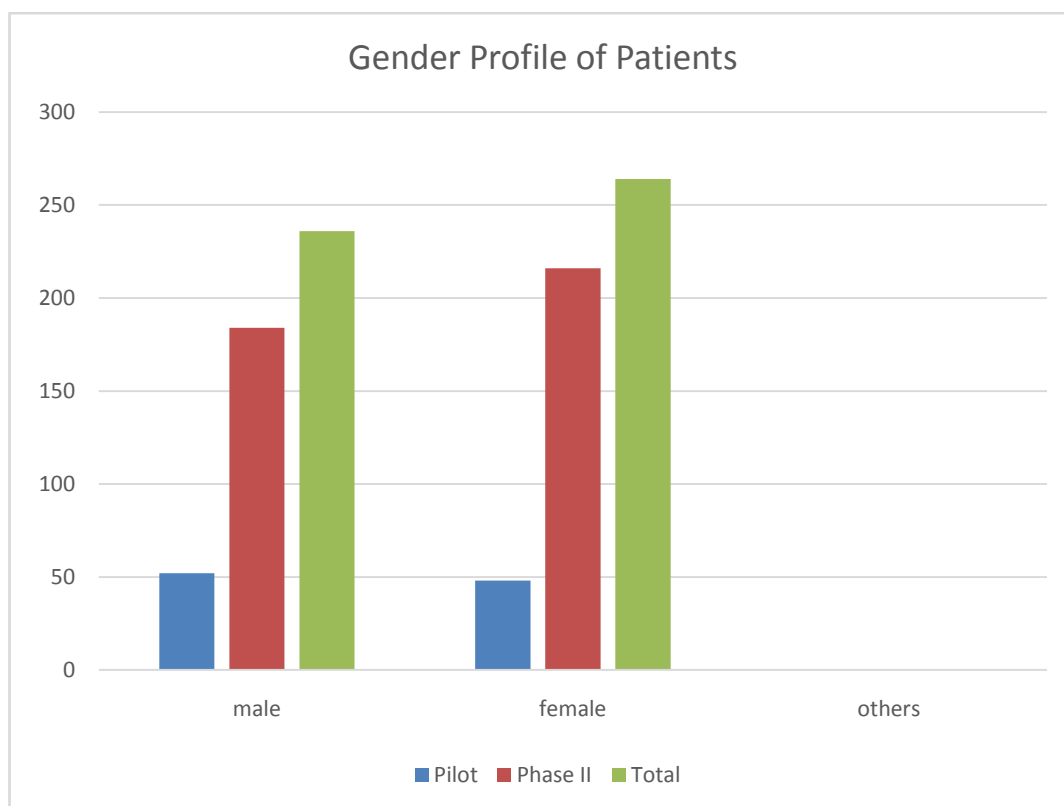Table 3 : Educational profile of patients enrolled in the study

Education	Pilot study n=100	Phase II study n=400	Total n=500
Illiterate	0	0	0
upto 10th grade	18	61	79
matriculate	42	201	243
graduate	31	116	147
post-graduate	9	22	31

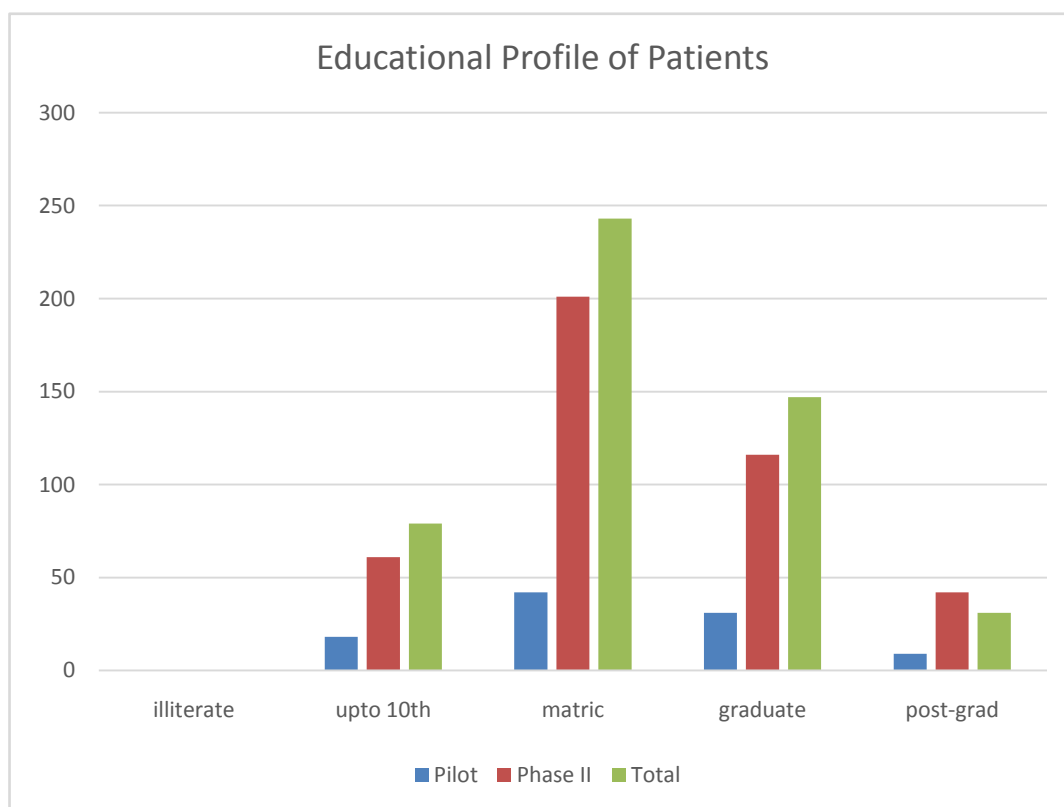Figure 3 : Educational profile of patients enrolled in the study

Table 4 : Socio-Economic status profile of patients enrolled in the study

Income status	Pilot study n=100	Phase II study n=400	Total n=500
Low income	28	78	106
mid income	70	312	382
high income	2	10	12

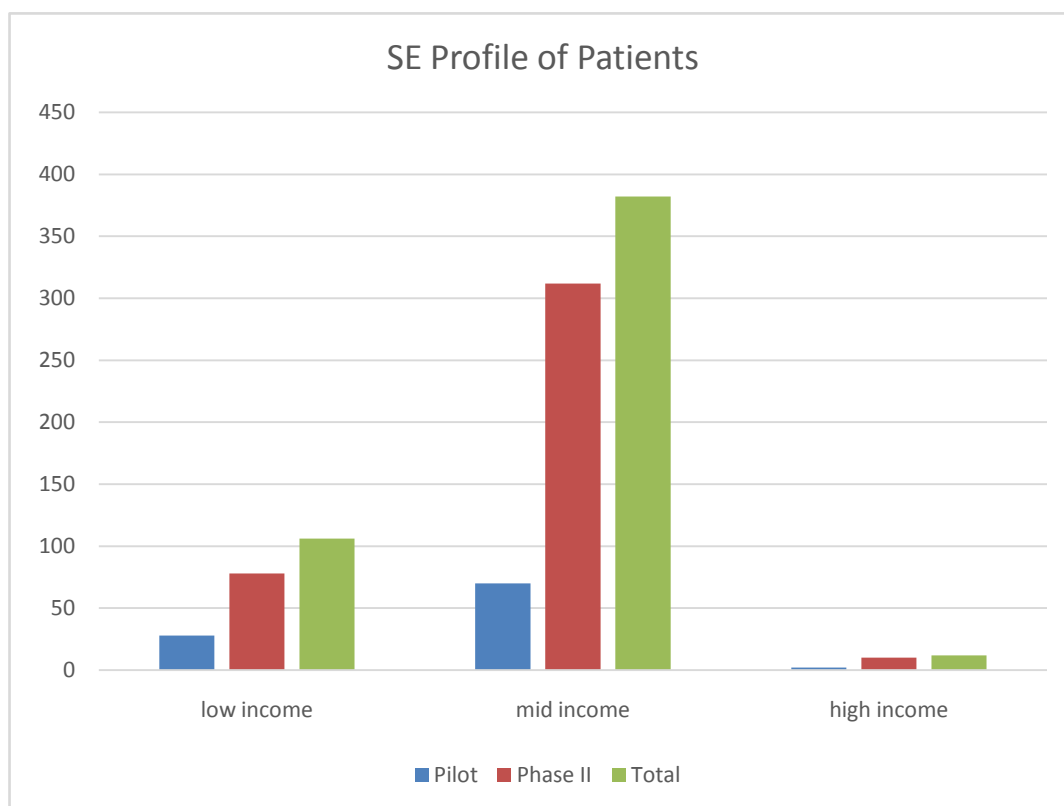Figure 4 :Socio-Economic status profile of patients enrolled in the study

Table 5 : Duration of Diabetes of patients enrolled in the study

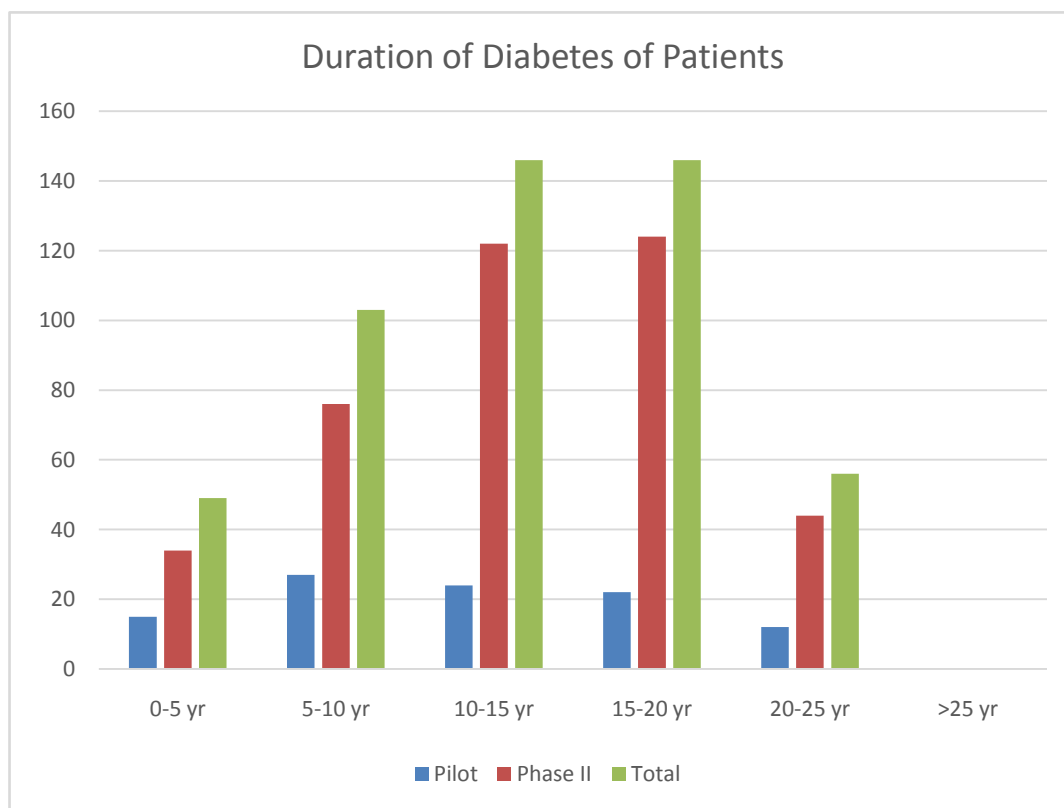| Duration of Diabetes	Pilot study n=100	Phase II study n=400	Total n=500
0-5 yr	15	34	49
5-10 yr	27	76	103
10-15 yr	24	122	146
15-20 yr	22	124	146
20-25 yr	12	44	56
> 25 yr	0	0	0

Figure 5 : Duration of Diabetes of patients enrolled in the study

Table 6 : Glycemic control of patients enrolled in the study

Glycemic control	Pilot study n=100	Phase II study n=400	Total n=500
good	44	192	236
poor	51	196	247
very poor	5	12	17

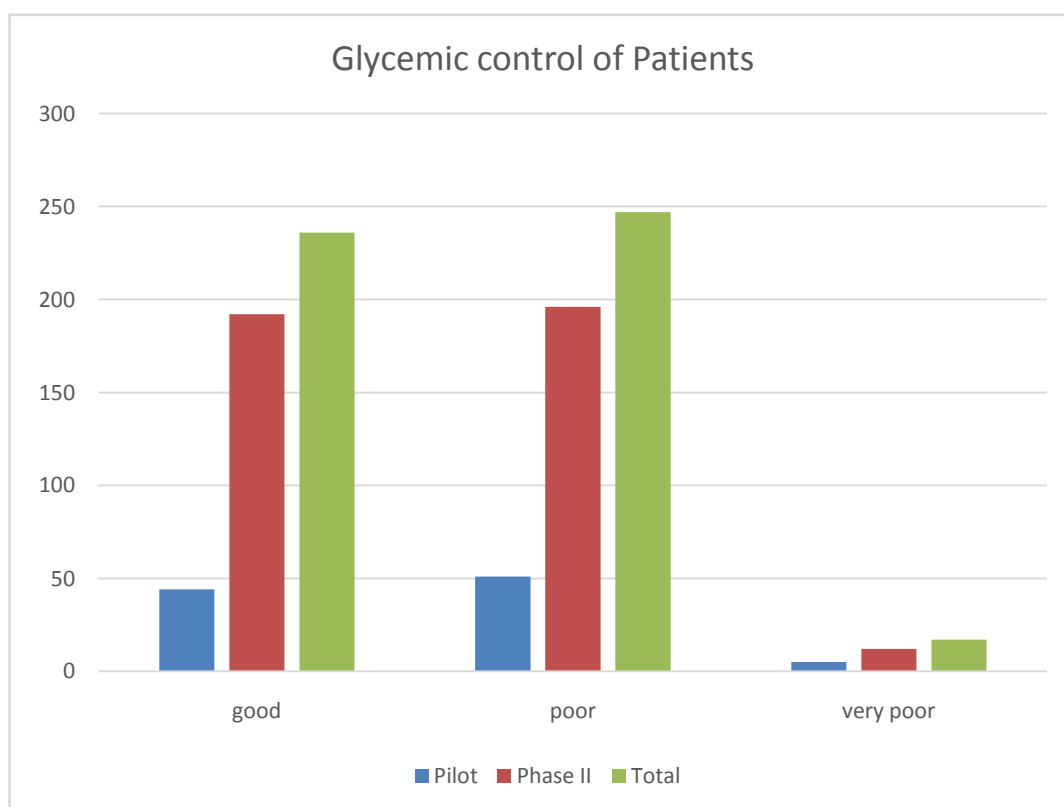Figure 6 : Glycemic control of patients enrolled in the study

Table 7 : Common myths noted in Pilot study and their prevalence in Phase II

	MYTHS ABOUT DIABETES DISEASE	Prevalence (out of 400)	Prevalence (in percentage)
1.	Diabetes is genetic and runs in families;cannot occur if no family history	66	16.5
2.	Diabetes occurs only in elderly people	10	2.5
3.	Diabetes is unconnected to obesity	20	5
4.	Diabetes occurs only in the obese	64	16
5.	Eating sugar causes Diabetes	260	65
6.	Lifestyle excesses is not connected to DM	84	21
7.	DM is contagious	2	0.5
8.	DM is the result of previous sins	8	2
9.	Diabetes is not a serious disease	36	9
10.	DM type 2 is milder form of Diabetes	176	44
11.	Pre-diabetes always leads to Diabetes	124	31
12.	High blood sugar always causes symptoms	144	36
13.	Sugar levels upto 200 mg/dL are normal and acceptable	164	41
14.	DM does not cause complications	16	4
15.	No complications can occur even if sugars are uncontrolled	24	6
16.	DM always leads to blindness and amputation	48	12
17.	Diabetic patients cannot be active	60	15
18.	Diabetic patients cannot do exercises	44	11
19.	Diabetic patients cannot drive	16	4
20.	Soaking feet in water can reduce sugar levels	1	0.25
	MYTHS ABOUT DIET IN DIABETES		
21.	Avoiding sugar is the only dietary measure needed	96	24
22.	Avoiding rice is the only dietary measure needed	56	14
23.	I need a special diet for DM	124	31
24.	I cannot eat rice	144	36
25.	I cannot eat sweets	160	40
26.	I cannot eat egg / non-veg food	40	10
27.	I cannot eat fruits	64	16
28.	I can have as many fruits as I want	44	11
29.	oil intake is unconnected to DM	84	21
30.	coconut oil / butter / ghee arebeneficial in DM	190	47.5

31.	DM can be controlled by diet alone; medicines are not needed	24	6
32.	I cannot have alcohol	16	4
	MYTHS ABOUT DIABETIC TREATMENT		
33.	Tablets cause weight gain	32	8
34.	tablets cause severe side-effects	42	10.5
35.	ayurveda/ homeo treatment is better	252	63
36.	naturopathy is better	84	21
37.	unproven medicines like ramdev are better	220	55
38.	godmen/baba/ vibhuthi/ necklace/arm band is better	8	2
39.	yoga is better	88	22
40.	tablets can be stopped once sugar levels are controlled	101	25.25
41.	foot care is not important	24	6
42.	exercise is not important	28	7
43.	you need special kit for exercise	180	45
44.	walking/jogging/cycling are very mild forms and not important	48	12
	MYTHS ABOUT INSULIN		
45.	insulin causes addiction;once started , they cannot be stopped	241	60.25
46.	insulin injections are very painful	205	51.25
47.	insulin injections can only be given by doctors or nurses	200	50
48.	insulin injection means you are near death or in serious condition	124	31
49.	insulin injection looks bad (stigma)	88	22
50.	patients of type 2 DM never need insulin	228	57

Table 8 : Ten most common myths encountered in our study

	TOP TEN COMMON MYTHS
1.	Eating sugar causes Diabetes
2.	ayurveda/ homeo treatment is better
3.	insulin causes addiction;once started , they cannot be stopped
4.	patients of type 2 DM never need insulin
5.	unproven medicines like ramdev are better
6.	insulin injections are very painful
7.	insulin injections can only be given by doctors or nurses
8.	coconut oil / butter / ghee are beneficial in DM
9.	you need special kit for exercise
10.	DM type 2 is milder form of Diabetes

Table 9 : Prevalence of myths analyzed with respect to age profile

Age	Phase II study n=400	No of myths Mean ± SD
< 30 yr	5	7 ± 2
30-40 yr	20	20 ± 3
40-50 yr	146	24 ± 3
50-60 yr	131	23 ± 2
60-70 yr	68	22 ± 2
> 70 yr	30	16 ± 2

Figure 7 : Prevalence of myths analyzed with respect to age profile

Age vs No of Myths
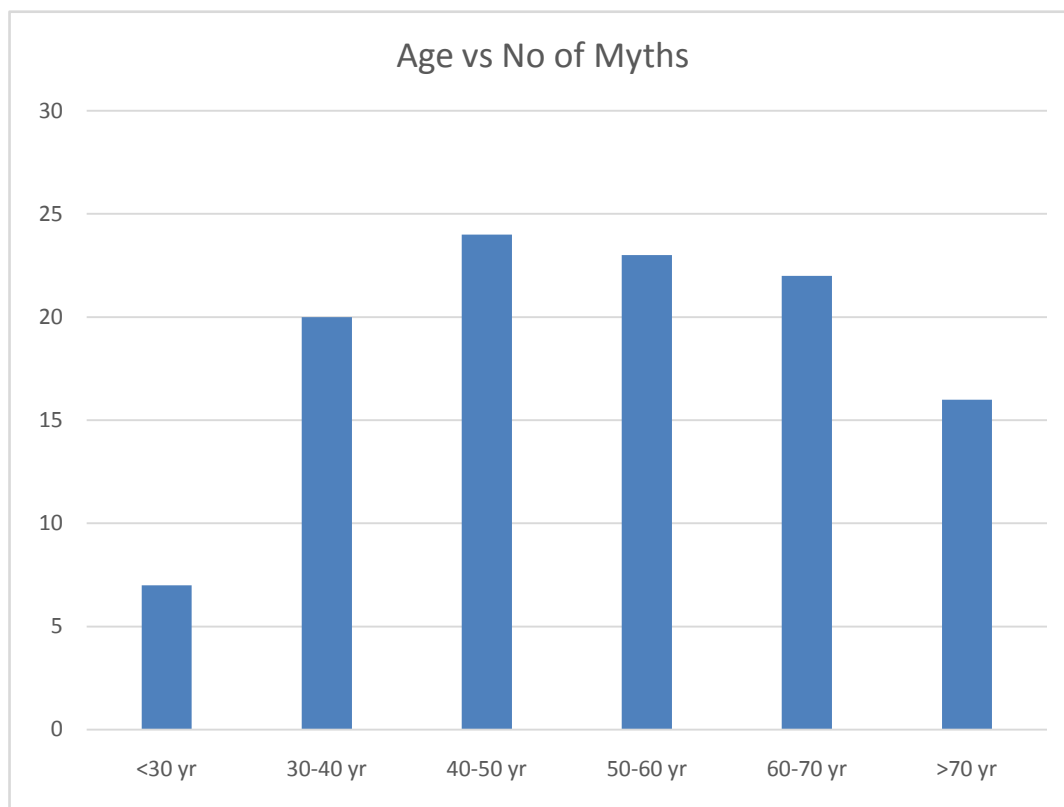
Table 10 : Prevalence of myths analyzed with respect to gender

Gender	Phase II study n=400	No of myths Mean ± SD
male	184	22 ± 3
female	216	23 ± 3
third gender	0	0

Figure 8 : Prevalence of myths analyzed with respect to gender
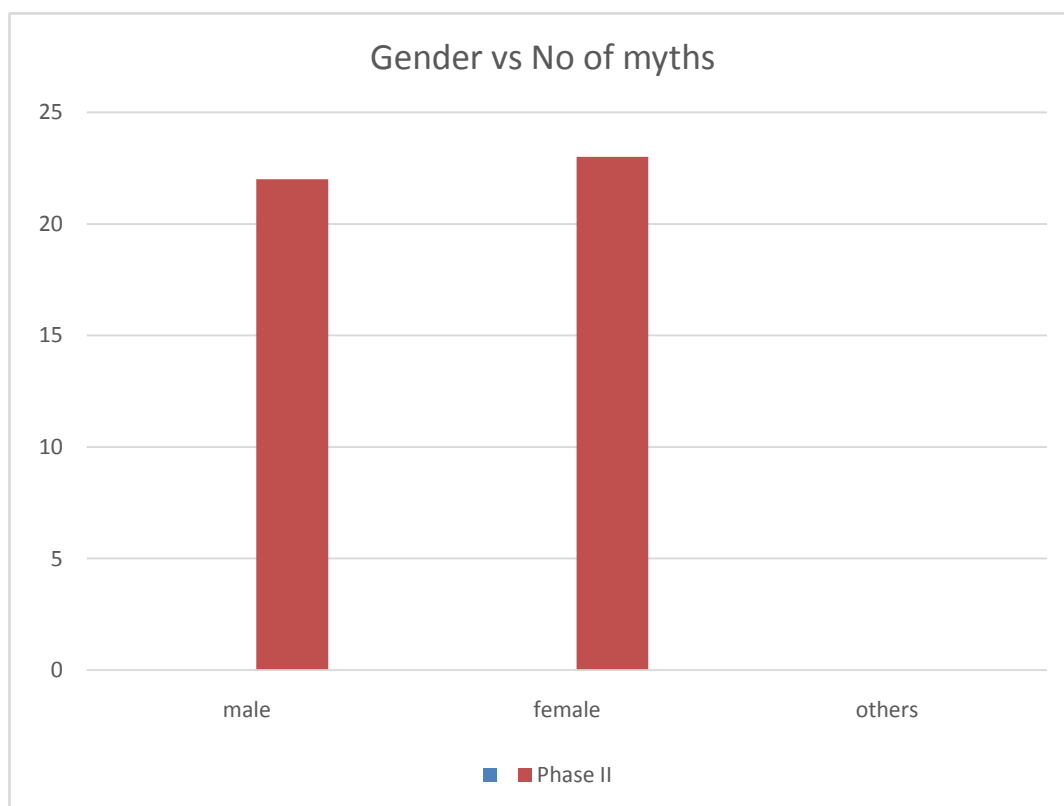
Table 11: Prevalence of myths analyzed with respect to education

Education	Phase II study n=400	No of myths Mean ± SD
Illiterate	0	0
upto 10th grade	61	24 ± 3
matriculate	201	24 ± 3
graduate	116	18 ± 2
post-graduate	22	14 ± 2

Figure 9 : Prevalence of myths analyzed with respect to education

Education vs No of myths
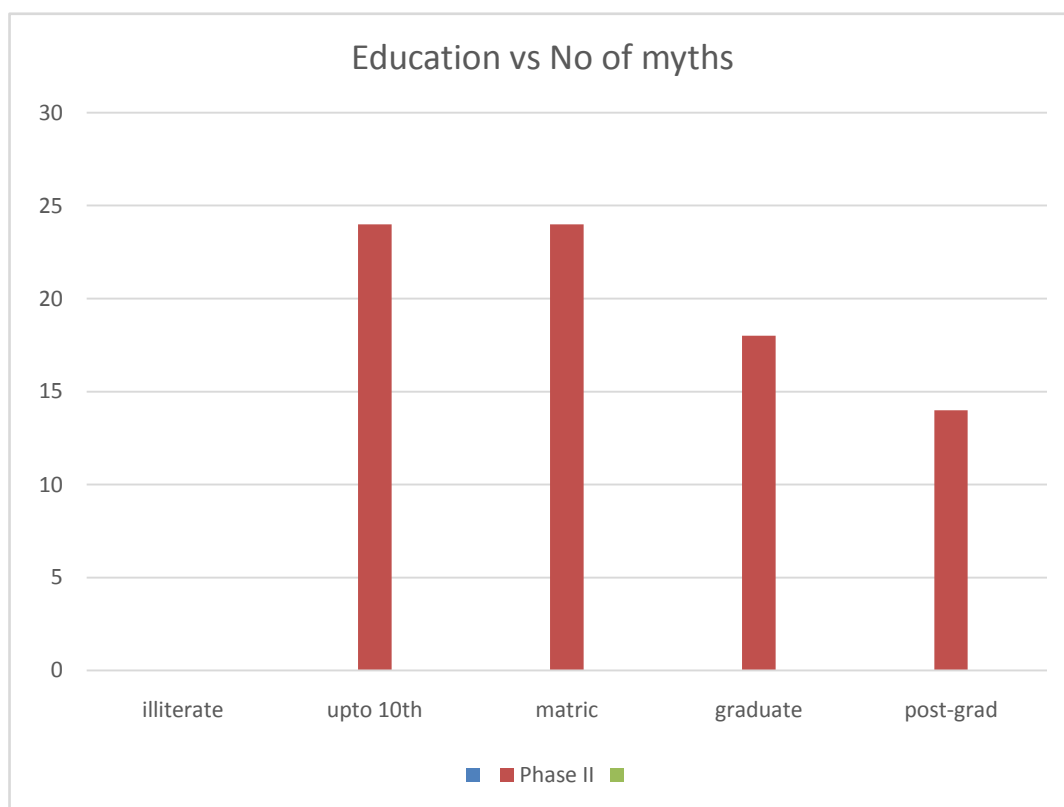
Table 12 : Prevalence of myths analyzed with respect to SE status

Income status	Phase II study n=400	No of myths Mean ± SD
Low income	78	24 ± 3
mid income	312	23 ± 3
high income	10	14 ± 2

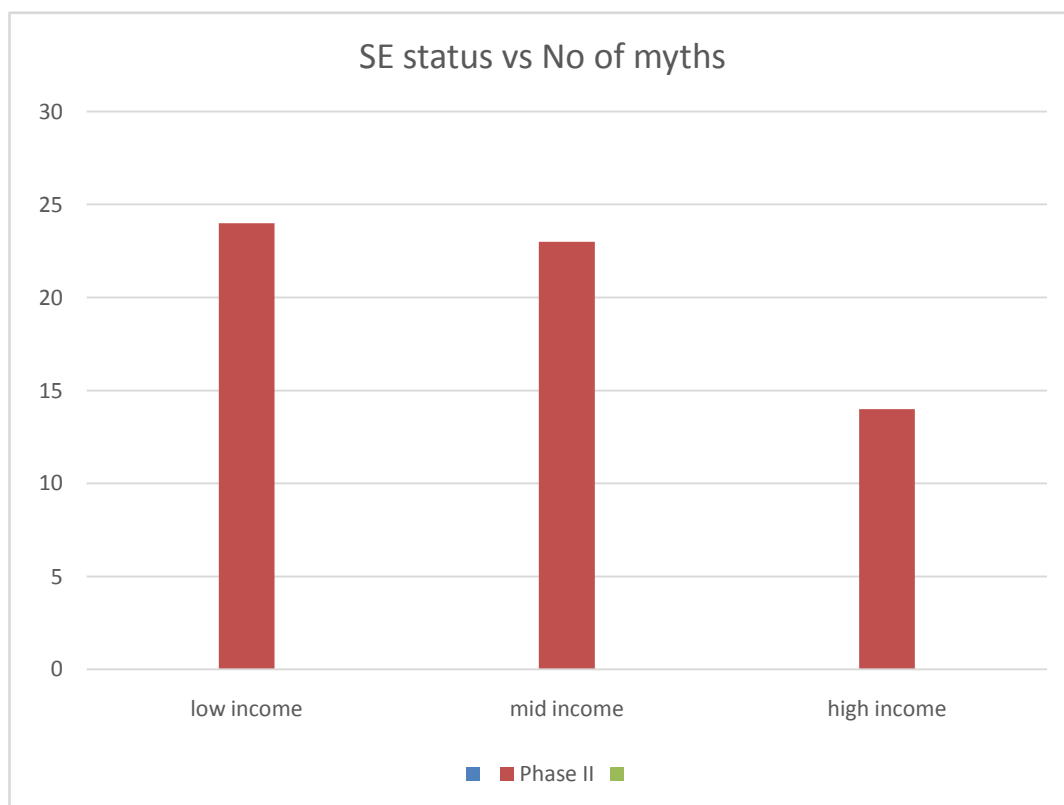Figure 10 : Prevalence of myths analyzed with respect to SE status

Table 13 : Prevalence of myths analyzed with respect to duration of Diabetes

Duration of Diabetes	Phase II study n=400	No of myths Mean ± SD
0-5 yr	34	24 ± 3
5-10 yr	76	23 ± 2
10-15 yr	122	18 ± 2
15-20 yr	124	16 ± 2
20-25 yr	44	16 ± 2
> 25 yr	0	0

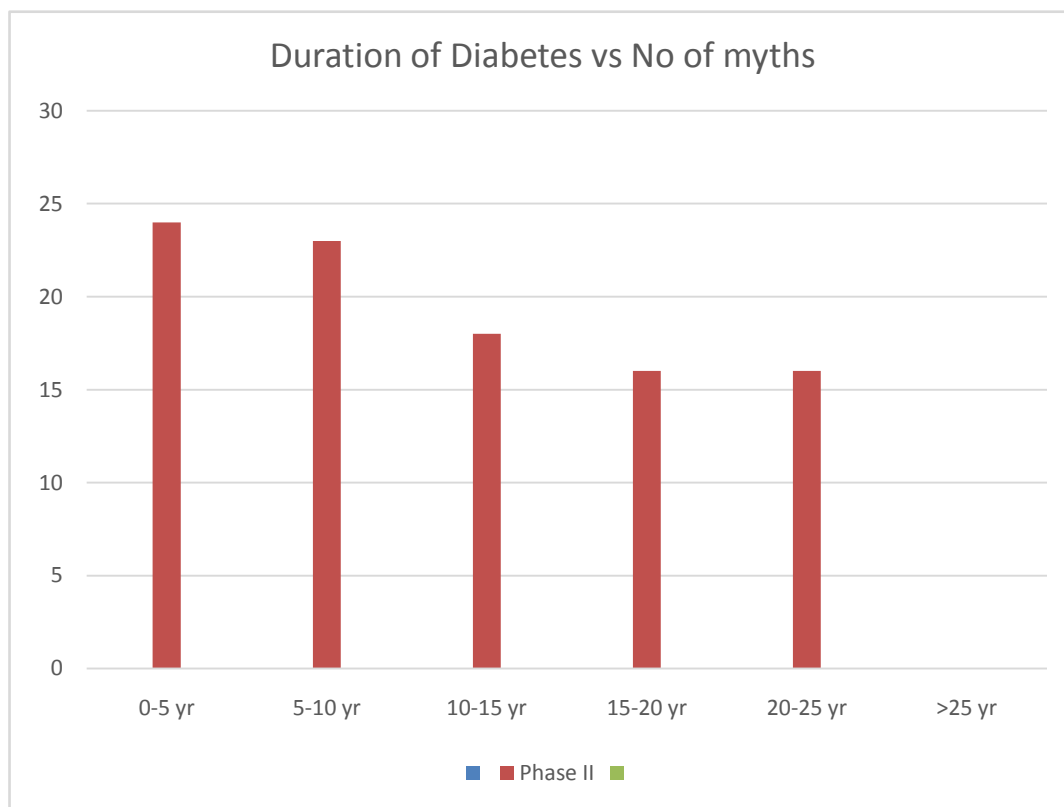Figure 11 : Prevalence of myths analyzed with respect to duration of Diabetes

Table 14 : Prevalence of myths analyzed with respect to degree of glycemic control

Glycemic control	Phase II study n=400	No of myths Mean ± SD
good	192	18 ± 2
poor	196	24 ± 3
very poor	12	28 ± 3

Figure 12 : Prevalence of myths analyzed with respect to degree of glycemic control