

ORIGINAL ARTICLE

Knowledge and perception of mothers of under five children regarding etiology of Type-II Diabetes Mellitus in Agartala, Tripura

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ABSTRACT

Introduction: Misconceptions and inadequate knowledge remains significant barrier towards prevention and control of diabetes in developing countries. Epidemiological shift of diabetes towards children makes mothers potential agents for any drive that targets diabetes. **Objective:** To assess knowledge and perception of mothers of under five children regarding etiology of Type-II Diabetes Mellitus. **Material and Methods:** Present hospital based cross-sectional study was conducted among 200 mothers of under five children attending Paediatric OPD of Agartala Govt. Medical College between May-June, 2012. Data was collected using a pre-designed questionnaire and information on socio-demographic characteristics, basic knowledge of mothers about diabetes and their perception regarding aetiology of Type-II DM was obtained. Data was analyzed using SPSS software version 17.0. **Results:** 12% and 7.5% mothers respectively believed that only old people and males suffer from diabetes. 73% mothers opined that diabetes can be prevented. 10.5% and 12% mothers believed that diabetes is contagious and caused by past sins. 39.5% mothers suggested that consumption of more sugar causes diabetes. Ethnicity was strongly associated with overall knowledge of mother regarding diabetes (Bengali mothers had more knowledge compared to tribal mothers). Knowledge of mothers regarding etiology of diabetes was associated with their ethnicity, type of family and occupation. However, caste, education, and family H/O of diabetes was not associated with knowledge regarding etiology of diabetes among respondent mothers. **Conclusion:** Knowledge and perception of mothers regarding diabetes was good, though inappropriate at times. Various misconceptions regarding etiology of diabetes, especially among tribal mothers, need to be addressed in the study area.

Key words: Children, diabetes, knowledge, mothers

INTRODUCTION

Diabetes is not only a disease of the affluent countries; it is prevalent in developing countries too. ⁽¹⁾ Rising prevalence of diabetes in developing countries is closely associated with industrialization and socioeconomic development. ⁽²⁾ Unfortunately, there is still inadequate awareness about the problem among general public. One of the barriers for seeking health care advice is misconceptions about the disease, which revolve around all the aspects of diabetes including etiology, prevention and control. Studies indicate that, misconceptions and inadequate

knowledge are responsible for significant barrier to proper management of diabetes. ^(3,4)

Diabetes has early life genesis that track into adulthood and these may play a decisive role in explaining the diabetes epidemics in developing countries. ⁽⁵⁾ The increasing rates of diabetes in both urban and rural India indicate that urbanization is a significant but not a sufficient explanation. Researchers have already expressed concern over epidemiological shift of diabetes from adults to children which can pose serious consequences on the health of the nation. ⁽⁶⁾ The first move towards combating diabetes must involve creating community awareness about risk

factors of diabetes, its prevention and control. Mothers of children thus become an integral and important agent for such campaign. Thus, the present study was aimed to assess the perception of mothers of under five children regarding etiology of Type-II Diabetes Mellitus

METHODOLOGY

Study setting: Present hospital based cross-sectional study was conducted in the Paediatric OPD of Agartala Govt. Medical College situated in the G B Pant Hospital Campus, Agartala, Tripura among mothers of under five year children attending Paediatric OPD during May-June 2012. Ethical permission was obtained from Institutional Ethical Committee.

Selection of subjects: All mothers of under five children attending Paediatric OPD, willing to participate and gave written consent, were selected as study subjects. Mothers of seriously ill children were excluded. Considering the regular under five OPD attendance of the medical college Paediatric OPD; 200 mothers were interviewed as per feasibility of the study.

Data collection procedure: Data was collected by trained investigator using a pre-tested questionnaire. Information on socio-demographic characteristics, knowledge and perception of mothers regarding aetiology of Type-II DM was obtained. Each interview was conducted in local language (Bengali) and took around 10-12 minutes to interview one mother. Any query raised by mothers regarding diabetes was addressed after information collection.

Data management and statistical analysis: Data was cross-checked and edited through weekly reviews. The collected data was entered and analyzed using Statistical Package for the Social Sciences software for Windows (SPSS Inc., Chicago, Illinois, USA) version 17.0. Suitable statistical tests were applied to assess the significance of the study findings. $P < 0.05$ was considered as statistically significant.

RESULTS

Among 200 mothers, 24 (12%) opined that only old people suffer from diabetes, while 163 (81.5%) mothers refused this (p value <0.001). 8 (4%) mothers communicated that diabetes is predominantly a disease of rich people, while 172 (86%) mothers refused it (p value <0.001). 15 (7.5%) mothers accepted that diabetes predominantly affects males, while 162 (81%) mothers didn't accepted this (p value <0.001). 146 (73%) mothers said diabetes can be prevented, while 39 (19.5%) mothers said diabetes can't be prevented (p value <0.001). (Table 1)

21 (10.5%) mothers communicated that diabetes is contagious, while 163 (81.5%) mothers denied it (p value <0.001). 24 (12%) mothers said diabetes is caused by past sins, while 162 (81%) mothers refused it (p value <0.001). 87 (43.5%) mothers agreed that diabetes is chiefly an inherited disease, while 79 (39.5%) mothers didn't think so (p value 0.027). 79 (39.5%) mothers said consumption of more sugar is main reason for diabetes, while 104 (52%) mothers refused this statement (p value <0.001). (Table 2)

11 (6.59%) Bengali mothers believed that only old people suffer from diabetes, as compared to 13 (39.39%) tribal mothers (p value <0.001). 4 (2.39%) Bengali and 4 (12.12%) tribal mothers thought that diabetes is predominantly disease of rich people (p value 0.034). 9 (5.39%) Bengali mothers considered that diabetes predominantly affects males, as compared to 6 (18.18%) tribal mothers (p value 0.029). 133 (79.64%) Bengali mothers believed that diabetes can be prevented, as compared to 13 (39.39%) tribal mothers (p value <0.001). 11 (11.96%) mothers belonging to open category considered that diabetes predominantly affects males, as compared to 4 (3.7%) mothers belonging to backward caste (p value 0.027). 75 (69.44%) backward caste mothers and 71 (77.17%) open category mothers believed that diabetes can be prevented. There was no significance perception difference regarding diabetes when type of family was considered.

91 (85.05%) graduate mothers believed that diabetes can be prevented, as compared to 55 (59.14%) mothers educated upto 12th standard (p value <0.001). 11 (19.64%) mothers with family history of diabetes thought that only old people suffer from diabetes, as compared to 13 (9.04%) mothers without family history of diabetes (p value 0.038). It was observed that 37 (66.07%) mothers with and 109 (75.69%) mothers without family history of diabetes feel that diabetes can be prevented. Occupation wise there was no significant perception difference between housewife mothers and other occupation mothers regarding diabetes mellitus. (Table 3)

Significant perception difference was observed between Bengali and tribal mothers, and mothers from nuclear and joint families regarding etiology of diabetes. 9 (5.39%) Bengali mothers thought that diabetes is contagious, as compared to 12 (36.36%) tribal mothers (p value <0.001). 8 (4.79%) Bengali mothers, as compared to 16 (48.49%) tribal mothers considered that diabetes is caused by past sins (p value <0.001). 2 (1.84%) mothers belonging to nuclear families believed that diabetes is contagious, as against 19 (20.88%) mothers belonging to joint families (p value <0.001). 6 (5.51%) mothers from nuclear families, as compared to 18 (19.78%) mothers from joint families assumed that diabetes is caused by past

sins (p value 0.002). 40 (36.69%) nuclear family mothers considered that diabetes is chiefly an inherited disease, as against 47 (51.65%) joint family mothers (p value 0.034). 35 (32.11%) mothers from nuclear families, as compared to 44 (48.35)% mothers from joint families thought that consumption of more sugar is the main reason for diabetes (p value 0.019). There was no significant perception difference between mothers belonging to different castes when etiology of diabetes was considered.

Significant perception difference was observed between housewife mothers and other mothers when etiology of diabetes was considered. 9 (5.81%) housewife mothers believed that diabetes is contagious, as compared to 12 (26.67%) non-housewife mothers (p value <0.001). 60 (38.71%) housewife mothers thought that diabetes is chiefly an inherited disease, as against 27 (60%) other occupation mothers (p value 0.011). 68 (43.87%) housewife mothers considered that consumption of more sugar is the main reason for diabetes, as compared to 11 (24.44%) non-housewife mothers (p value 0.019). There was no significant perception difference between graduate mothers and mothers educated upto 12th standards, and between mothers with and without family history of diabetes, when etiology of diabetes was considered. (Table 4)

Table 1: General perception of mothers about diabetes mellitus (N=200)

Perception	Yes N (%)	No N (%)	Don't Know N (%)	Chi-square (p value)
Only old people suffer from diabetes	24 (12)	163 (81.5)	13 (6.5)	70.11 (<0.001)
Predominantly disease of rich people	8 (4)	172 (86)	20 (10)	80.26 (<0.001)
Diabetes predominantly affects males	15 (7.5)	162 (81)	23 (11.5)	69.58 (<0.001)
Diabetes can be prevented	146 (73)	39 (19.5)	15 (7.5)	52.73 (<0.001)

Table 2: Perception of respondent mothers about etiology of diabetes mellitus

Perception	Yes N (%)	No N (%)	Don't Know N (%)	Chi-square (p value)
Diabetes is contagious/infectious	21 (10.5)	163 (81.5)	16 (8)	74.88 (<0.001)
Diabetes is caused by past sins	24 (12)	162 (81)	14 (7)	69.53 (<0.001)
Chiefly an inherited disease	87 (43.5)	79 (39.5)	34 (17)	7.24 (0.027)
Consumption of more sugar main reason for diabetes	79 (39.5)	104 (52)	17 (8.5)	13.39 (0.001)

Table 3: Socio-cultural background and individual characteristics of mothers and their general perception regarding diabetes mellitus

Socio-cultural background									
Perception	Ethnicity		p value	Caste		p value	Family Type		p value
	Bengali (N=167)	Tribal (N=33)		Backward (N=108)	Open (N=92)		Nuclear (N=109)	Joint (N=91)	
Only old people suffer from diabetes	11 (6.59)	13 (39.39)	<0.001	13 (12.04)	11 (11.96)	0.986	9 (8.26)	15 (16.48)	0.075
Predominantly disease of rich people	4 (2.39)	4 (12.12)	0.034	3 (2.78)	5 (5.44)	0.553	3 (2.75)	5 (5.49)	0.533
Diabetes predominantly affects males	9 (5.39)	6 (18.18)	0.029	4 (3.70)	11 (11.96)	0.027	7 (6.42)	8 (8.79)	0.526
Diabetes can be prevented	133 (79.64)	13 (39.39)	<0.001	75 (69.44)	71 (77.17)	0.219	82 (75.23)	64 (70.33)	0.437
Individual characteristics									
Perception	Education		p value	Occupation		p value	Family H/O DM		p value
	Upto 12 th Std (N=93)	Graduate (N=107)		Housewife (N=155)	Other (N=45)		Present (N=56)	Absent (N=144)	
Only old people suffer from diabetes	14 (15.05)	10 (9.35)	0.215	21 (13.55)	3 (6.67)	0.211	11 (19.64)	13 (9.04)	0.038
Predominantly disease of rich	1 (1.08)	7 (6.54)	0.108	5 (3.23)	3 (6.67)	0.545	5 (8.93)	3 (2.08)	0.069
Predominantly affects males	7 (7.53)	8 (7.48)	0.989	9 (5.81)	6 (13.33)	0.172	7 (12.5)	8 (5.56)	0.169
Diabetes can be prevented	55 (59.14)	91 (85.05)	<0.001	109 (70.32)	37 (82.22)	0.114	37 (66.07)	109 (75.69)	0.169

(Figures in parenthesis indicate percentages)

Table 4: Socio-cultural background and individual characteristics of mothers and their perception regarding etiology of diabetes mellitus

Socio-cultural background									
Perception	Ethnicity		p value	Caste		p value	Family Type		p value
	Bengali (N=167)	Tribal (N=33)		Backward (N=108)	Open (N=92)		Nuclear (N=109)	Joint (N=91)	
Diabetes is contagious/infectious	9 (5.39)	12 (36.36)	<0.001	15 (13.89)	6 (6.52)	0.090	2 (1.84)	19 (20.88)	<0.001
Diabetes is caused by past sins	8 (4.79)	16 (48.49)	<0.001	15 (13.89)	9 (9.78)	0.373	6 (5.51)	18 (19.78)	0.002
Chiefly an inherited disease	71 (42.52)	16 (48.49)	0.527	47 (43.52)	40 (43.48)	0.995	40 (36.69)	47 (51.65)	0.034
Consumption of more sugar main reason for diabetes	67 (40.12)	12 (36.36)	0.687	43 (39.82)	36 (39.13)	0.921	35 (32.11)	44 (48.35)	0.019
Individual characteristics									
Perception	Education		p value	Occupation		p value	Family H/O DM		p value
	Upto 12 th Std (N=93)	Graduate (N=107)		Housewife (N=155)	Other (N=45)		Present (N=56)	Absent (N=144)	
Diabetes is contagious/infectious	10 (10.75)	11 (10.28)	0.914	9 (5.81)	12 (26.67)	<0.001	5 (8.93)	16 (11.11)	0.651
Diabetes is caused by past sins	10 (10.75)	14 (13.08)	0.613	16 (10.32)	8 (17.78)	0.176	6 (10.71)	18 (12.5)	0.727
Chiefly an inherited disease	34 (36.56)	53 (49.53)	0.065	60 (38.71)	27 (60)	0.011	24 (42.86)	63 (43.75)	0.909
Consumption of more sugar main reason for diabetes	40 (43.01)	39 (36.45)	0.344	68 (43.87)	11 (24.44)	0.019	19 (33.93)	60 (41.67)	0.315

(Figures in parenthesis indicate percentages)

DISCUSSION

Present study findings suggest that mothers of under five year children had inappropriate knowledge about diabetes. Lau et al. ⁽⁷⁾ and Mukhopadhyay et al. ⁽⁸⁾ respectively have already documented that knowledge regarding diabetes was poor among population from Tripura and Bengali community in Kolkata. It is necessary for health care providers to know what people think about any disease; as knowledge gap acts as barrier for prevention and control of any disease. In the present study, 12% mothers opined that only old people suffer from diabetes. (Table 1) This is similar to study conducted in Delhi by Rai et al. ⁽⁹⁾ where 7.2% subjects said that diabetes affects only old people. However, 73% mothers believed that diabetes can be prevented.

In the study, 10.5% mothers believed that diabetes is contagious. (Table 2) This is similar to study conducted in Karachi by Nisar et al. ⁽¹⁰⁾ Further, 12% mothers assumed that diabetes is caused by past sins. Similar findings were documented by Rai et al. ⁽⁹⁾ and Nisar et al. ⁽¹⁰⁾ that diabetes is caused by past sins and can be completely cured by spiritual treatment. 39.5% mothers considered that diabetes is caused due to consumption of more sugar. Rai et al. ⁽⁹⁾ documented that 22.1% subjects opined diabetes occurs because of increased sugar intake.

In the present study, tribal mothers had poor knowledge regarding diabetes as compared to Bengali mothers. (Table 3) Lau et al. ⁽⁷⁾ has already documented poor knowledge of tribal population about diabetes in Tripura. Rai et al. ⁽⁹⁾ has also documented difference in knowledge about diabetes among different religious groups. Further, higher number of graduate mothers as

compared to less educated mothers thought that diabetes can be prevented. Association between level of education and misconceptions regarding diabetes has already been documented by many researchers. ⁽⁹⁻¹²⁾

Type of family was associated with perception of mothers regarding diabetes and mothers from joint families had poor knowledge regarding etiology of diabetes, as compared to nuclear family mothers. (Table 4) A positive family history of diabetes was not much associated with perception of mothers regarding diabetes in the present study. However, Nisar et al. ⁽¹⁰⁾ has documented that family history of diabetes was associated with higher misconceptions about diabetes. While, Al Shafae et al. ⁽¹²⁾ documented that positive family history of diabetes was associated with higher knowledge about diabetes among study subjects.

CONCLUSION

Tribal mothers and joint family mother had poor knowledge regarding etiology of diabetes as compared to Bengali and nuclear family mothers respectively. Low level of education of mothers was associated with poor knowledge regarding diabetes in the study area. Knowledge and perception of mothers regarding diabetes was good, though inappropriate at times. Misconceptions regarding etiology of diabetes need to be addressed.

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