Will People With Type 2 Diabetes Speak to Family Members About Health Risk?

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OBJECTIVE — This study aimed to assess the potential for communication of familial risk by patients with type 2 diabetes.

RESEARCH DESIGN AND METHODS — A questionnaire was completed by a random sample of patients with type 2 diabetes registered with a hospital diabetes clinic.

RESULTS — Two-thirds of patients (65%) had spoken to at least one sibling or child about diabetes risk. They were more likely to believe their family was at risk, to worry about their family developing diabetes, and to be aware of the seriousness of diabetes. The results revealed greater awareness of family risk of type 2 diabetes compared with those from previous studies.

CONCLUSIONS — Many patients with type 2 diabetes had already taken the initiative, without formal prompting, to talk to family members about their risk of diabetes. Discussion of risk and interventions to reduce risk should be encouraged within families.

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First-degree relatives and spouses of individuals with type 2 diabetes are at increased risk of developing type 2 diabetes (1,2). There is also an established correlation of other cardiovascular risk factors in family members; these include obesity (3), hypertension (4), lipids (5), and smoking (5). Increased family risk is thought to have both an environmental and a genetic basis (6,7), giving scope for decreasing cardiovascular risk through lifestyle modification in individuals with a family history of diabetes (8). Nonetheless, systematic screening of family members is unlikely for logistic and financial reasons. A more modest approach would be to encourage patients with diabetes to discuss risk with family members. However, health beliefs of individuals with type 2 diabetes may lessen their perception of the risk of diabetes among family members (9) and of the seriousness of diabetes (10), raising doubts as to whether they would communicate risk factors to their family members. The Health Belief Model (11) identifies factors likely to increase health-related actions such as speaking with family members. They include perceived susceptibility, perceived severity, perceived benefits and barriers, and cues to action. We explored the beliefs and actions of patients with type 2 diabetes concerning discussion of risk in families.

RESEARCH DESIGN AND METHODS

— A questionnaire to assess patient beliefs and actions regarding discussion of type 2 diabetes risk with family members was developed, piloted, and refined based on the Health Belief Model. A sample size of 353 patients was calculated to give 95% power at 5% probability. Based on previous studies (12,13), a 50% response rate was predicted. A random sample intended to achieve 700 patients was drawn from the database of patients attending a Dublin hospital diabetes clinic (n = 4,577). Patients with type 1 diabetes and secondary causes of diabetes were excluded. A postal survey was issued to the resulting sample of 703 patients. Reminders were sent 3 weeks later. The study received ethics approval from Beaumont Hospital Research Ethics Committee.

RESULTS

— The response rate was 49% (297 of 607 eligible participants). Respondents had a mean age of 65 years; 56% were male. The mean time since diagnosis of diabetes was 8 years. Half of the patients (52%) had at least one parent or sibling with diabetes (18%, mother; 16%, father; and 35%, sibling).

Two-thirds of the patients (181 of 280) had spoken to at least one of their children or siblings about diabetes risk (Table 1); more patients spoke to children (61%) than to siblings (44%) (χ^2 = 55.3, 2 d.f.; $P < 0.001$). Younger respondents (χ^2 = 15.64, 2 d.f.; $P < 0.001$) and those still employed (χ^2 = 7.54, 2 d.f.; P = 0.023) were more likely to have spoken to family members, whereas sex, educational status, marital status, and duration of diabetes had no association. Three variables emerged from a nominal logistic regression analysis accounting for 41% of the variation in speaking to family members about their risk of diabetes: worry about their children developing diabetes (odds ratio 4.37 [95% CI 1.75–10.92]), treatment with insulin (8.97 [1.78–45.28]), and the belief that a benefit would be prevention of diabetes (2.71 [1.01–7.23]).

Over 90% of respondents recognized the benefits of speaking to their family members about the risk of diabetes in terms of improving awareness of diet and exercise, encouraging lifestyle changes, and preventing diabetes. However, many patients (58%) who felt that their own lifestyle was unhealthy reported challenges in speaking with family members. Further barriers concerned family members: not being open to advice (54%), not seeing themselves at risk (45%), and not considering diabetes serious (52%). A different type of challenge was lack of contact with family members (44%). Although most patients identified obesity (75%) and little or no exercise (59%) as

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Table 1—*Factors from the Health Belief Model and responses to the question "Have you talked to any of your children or siblings about the possibility of them getting diabetes?"*

Health Belief Model factor	*n*	Yes	No	Statistic
Susceptibility factors				
Likelihood that children will get diabetes				
Not at all/not very likely	95	57	43	$\chi^2 = 7.43$, 1 d.f.; $P = 0.006$
Quite/very likely	156	74	26	
Likelihood that siblings will get diabetes				
Not at all/not very likely	112	54	46	$\chi^2 = 11.0$, 1 d.f.; $P = 0.001$
Quite/very likely	131	75	25	
Diabetes in first-degree relative				
Yes	134	72	28	$\chi^2 = 4.73$, 1 d.f.; $P = 0.03$
No	121	59	41	
Relative seriousness of diabetes				
Compared with cancer	258	0.97 (0.93–1.02)	0.90 (0.79–1.00)	$t = 1.54$, 256 d.f.; $P = 0.12$
Compared with arthritis	253	1.25 (1.19–1.31)	1.10 (1.01–1.18)	$t = 3.04$, 251 d.f.; $P = 0.004$
Seriousness of treatment type				
Diet	44	55	45	$\chi^2 = 8.35$, 2 d.f.; $P = 0.015$
Oral agents	173	64	36	
Insulin	53	81	19	
Cues to action				
Worry that children will get diabetes				
Not at all/not very often	84	38	62	$\chi^2 = 46.53$, 1 d.f.; $P < 0.001$
Quite/very often	170	81	19	
Worry that siblings will get diabetes				
Not at all/not very often	149	54	46	$\chi^2 = 17.87$, 1 d.f.; $P < 0.001$
Quite/very often	91	81	19	
Benefit analysis				
Talking: make relatives more aware of importance of diet and exercise				
Agree	245	68	32	$\chi^2 = 5.34$, 1 d.f.; $P = 0.02$
Disagree	19	42	58	
Encourage family to make lifestyle changes				
Agree	230	70	30	$\chi^2 = 7.79$, 1 d.f.; $P = 0.005$
Disagree	26	42	58	
Help prevent diabetes				
Agree	230	70	30	$\chi^2 = 4.47$, 1 d.f.; $P = 0.03$
Disagree	26	42	58	
Barriers				
I do not have a healthy lifestyle myself				
Agree	150	67	33	$\chi^2 = 0.68$, 1 d.f.; $P = 0.4$
Disagree	109	62	38	
I do not have much contact with my relatives				
Agree	114	63	37	$\chi^2 = 0.74$, 1 d.f.; $P = 0.4$
Disagree	145	68	32	
My relatives are not open to advice from me				
Agree	119	68	32	$\chi^2 = 0.31$, 1 d.f.; $P > 0.5$
Disagree	142	63	35	
They do not see diabetes as a serious illness				
Agree	134	70	30	$\chi^2 = 1.02$, 1 d.f.; $P = 0.3$
Disagree	123	64	36	
They do not believe they are at risk for diabetes				
Agree	115	72	28	$\chi^2 = 2.02$, 1 d.f.; $P = 0.2$
Disagree	138	64	36	

Data are percent or mean (95% CI) unless otherwise indicated.

risk factors for type 2 diabetes, only 50% identified a parent with diabetes and 28% a sibling with diabetes as risk factors.

Half of the patients (56%) moderately or strongly agreed that they would speak to family members about their risk of developing diabetes if they were offered help to do so. More importantly, 87% of those who had not spoken to family members in

the past reported they would do so if they received assistance.

CONCLUSIONS — This study shows that many patients with type 2 diabetes had already taken the initiative, without formal prompting, to talk to family members about diabetes risk. Younger patients, patients with an existing family history of diabetes, and patients on more intensive treatment were more likely to have discussed risk with family members. Respondents exhibiting several parameters of the Health Belief Model were most likely to have spoken to family members, including those with greater perception of susceptibility of family members, increased awareness of the seriousness of diabetes, and increased appreciation of the benefits of talking to family members. Greater anxiety about family members developing diabetes appeared to act as a cue to action. This suggests that emphasizing these parameters when educating patients with type 2 diabetes concerning familial risk may lead to increased discussion within families.

This study also reveals an encouraging improvement in knowledge, attitudes, and behaviors of patients with diabetes toward sharing information about risk with family members compared with findings from previous studies (9). However, knowledge of risk factors for type 2 diabetes was still poor, and there were significant barriers to intervening within families. A real challenge for respondents was providing information regarding suggested lifestyle when they did not adequately adhere to such guidelines themselves. Supporting materials on diet and physical activity to use within their families may help overcome this barrier. More challenging to address was the reported lack of regular contact with family members by a substantial minority of respondents.

The typically low postal response rate merits a note of caution in that those participating may be more enthusiastic about engaging with their families. A strength was the use of a theoretical framework (the Health Belief Model) to identify parameters likely to influence preventive health behaviors.

This study suggests that patients with a vascular risk factor such as type 2 diabetes may provide a valuable outreach educational role to at-risk family members. They may benefit from provision of information on familial risk, the seriousness of the risk to family members, and interventions to reduce the risk, along with encouragement to discuss this information with family.

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