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Swedish and Middle-Eastern-born women's beliefs about gestational diabetes

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Self-care

Summary

Objective: to compare beliefs about health and illness between women born in Sweden and the Middle East who developed gestational diabetes (GD).

Design: a qualitative, explorative study using semi-structured interviews.

Setting: in-hospital diabetes specialist clinic in Sweden.

Participants: consecutive sample of women with GD; 13 born in Sweden and 14 born in the Middle East.

Measurement and findings: all the women described health as freedom from disease, and expressed worries for the baby's health and well-being. Women from the Middle East did not know the cause of GD, discussed the influence of social factors, such as being an immigrant, and supernatural factors, tried to adapt to the disease and thought it would disappear after birth, felt they had more pregnancy-related complications but had not received any treatment. Swedish women attributed GD to inheritance, environment and hormonal change, feared developing Type 2 diabetes, found work-related stress harmful to their health, more often sought help, used medications against pregnancy-related complications, and were more often on sick-leave from work.

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Key conclusions: Swedish women initiated a battle against GD, demanded medical treatment for pregnancy-related complications because of gainful employment and viewed pregnancy as a disease. Women from the Middle East temporarily adapted to the disease and perceived pregnancy and related problems as a natural part of life.

Implications for practice: it is important to assess individual beliefs, risk awareness and to meet individual needs for information.

Introduction

Pregnancy has been described as a developmental crisis, a transition and a transformation to motherhood for the woman (Lundgren and Wahlberg, 1999), with tremendous physiological and psychosocial changes (Trad, 1991). Gestational diabetes (GD) is potentially life-threatening and associated with lifestyle changes; its diagnosis and treatment have a significant effect upon the lives of women (Lawson and Rajaram, 1994). For migrants, the acculturation process in the new country acts as an additional stressor demanding further adaptation (Berry, 1997). Stress may imply increased blood glucose and thus impaired glycaemic control accompanied by increased rates of perinatal mortality and morbidity (Persson and Hansson, 1998).

Women with GD experience a two to three-fold increased risk of perinatal mortality and congenital abnormalities (Persson and Hansson, 1998), and the risk of GD is further increased in immigrant groups (e.g. Arab, South East Asian and Indian ethnic groups; Dornhorst et al., 1992; Yue et al., 1996). The risk of perinatal mortality and congenital abnormalities can be reduced by optimised glycaemic control during pregnancy (Persson and Hansson, 1998; Jovanovic, 1998). Self-care, including knowledge about diet, exercise, medications and self-monitoring of blood glucose (SMBG) are essential in normalising the blood glucose (ADA, 2003; Gabbe and Graves, 2003), but these are demanding measures.

Although beliefs about health and illness affect self-care, health-care seeking behaviour and thus health (Hjelm et al., 1999, 2003), no studies have been published on the beliefs about health and illness in women with GD. Previous studies comparing beliefs about health and illness in people of different origin with diabetes mellitus have shown that Europeans cite various and more medically oriented causes of disease (e.g. heredity, obesity) (Dechamp-Le-Roux et al., 1990; Hjelm et al., 1999, 2003), whereas North Africans cite either stress or fate. Arab and Ex-Yugoslavian women showed a similar pattern of beliefs to North Africans, with a more fatalistic view of the disease in terms of factors lying beyond one's own control (e.g. fate and supernatural influence by the will of God or Allah – external locus of control) (Hjelm et al., 1999, 2003). Although health was described in the same way, as freedom from disease (pathogenetic perspective), in Swedes, Ex-Yugoslavians and Arab women, three different self-care behaviours were found. Swedes showed an active self-care behaviour and a healthy and controlled lifestyle. Ex-Yugoslavians emphasised enjoyment of life and a passive self-care attitude. Arabs emphasised feelings of mental well-being, adaptation to diabetes mellitus, and a number of 'musts' concerning diet, and actively searched for information and therefore had a lower threshold for seeking care (Hjelm et al., 1999, 2003). Foreign-born people seemed to have a lower degree of self-efficacy, expressed lesser perceived seriousness of the disease and had less knowledge about their body and diabetes.

Migrants from the Middle East constitute the biggest group of non-European migrants in Sweden. Many are refugees and have fled from war and persecution in their home countries (Lund and Ohlsson, 1994). The aim of the present study was to compare beliefs about health and illness in women with GD born in Sweden and in the Middle East, and to study the influence on self-care and care seeking.

Screening for and care of women with gestational diabetes

According to regional routine practice, the women in this study were screened for GD in the 28th, or, in case of heredity diabetis mellitus or previous GD, in the 12th gestational week by a midwife at a healthcare centre. If the woman tested positive, she was referred to a specialised diabetes clinic for additional investigations and further management. The staff at the diabetes clinic included a diabetologist, a diabetes specialist nurse and a dietician, who managed people with all kinds of diabetes. Antenatal care was provided according to programmes by a midwife at a healthcare centre in the case of

dietary treatment, or by a midwife at the maternity ward in the case of insulin treatment.

At the diabetes clinic, additional investigations were carried out, and information about self-monitoring of blood glucose and diet was given by a diabetes specialist nurse (DSN). All foreign-born women, as well as Swedish-born women, considered in need of information were referred to the dietician for advice. Information about GD was given 1–2 weeks later by a diabetologist. Treatment was based on diet (reduced in sugar, rich in fibres, regular meals) and, initially, information was given that additional therapy with insulin might be needed, depending on the blood glucose. The woman was asked to undertake regular self-monitoring of blood glucoses (usually four times a day and three times a week), and values were noted in a diary and discussed with the diabetologist, DSN, or both, at the clinic at regular visits (every third week in women without complications).

Theoretical framework

Differences between the patient's thoughts and beliefs (the life world), and those of the staff working in an institution (the system world) (Habermas, 1984, 1987; Berger and Luckmann, 1991), or between the lay person's perspective and the professional perspective, may have consequences for the patient's compliance with advice (Helman, 2000) and thus for self-care and health. Individual beliefs are culturally determined, learned by socialisation, transmitted through language (Berger and Luckmann, 1991) and are based on knowledge held by a person.

Explanations of disease guide strategies for self-care, treatment of disease and health-care seeking. Illness can be perceived as caused by factors related either to the individual, nature, social relations or the supernatural sphere (Helman, 2000). Health care can be sought from family, friends, relatives, folk-healers or professionals in the popular, folk or the professional sector (Kleinman, 1980). Health-related behaviour is explained by the health-belief model (Fig. 1; Rosenstock et al., 1988) and perceived locus of control (Rotter, 1966). Socio-demographic factors such as age, sex, education, race, ethnicity and income are believed to influence behaviour indirectly by affecting these components.

If the perception of self-efficacy is strong, then individuals tend to be more active. Outcomes interpreted as successful raise self-efficacy. Positive mood enhances perceived self-efficacy; mastery experiences have the greatest impact (Bandura, 1995). Cultural differences may promote different self-efficacy appraisals. Being brought up in a society with hierarchical relationships and learning to obey authorities implies less independent behaviour and lowered self-efficacy. Individuals brought up in societies in which they are treated as equals, encouraged to be independent and to find their own direction have an increased perception of self-efficacy (Oettingen, 1995). Societies, such as Iran, in the Middle East,

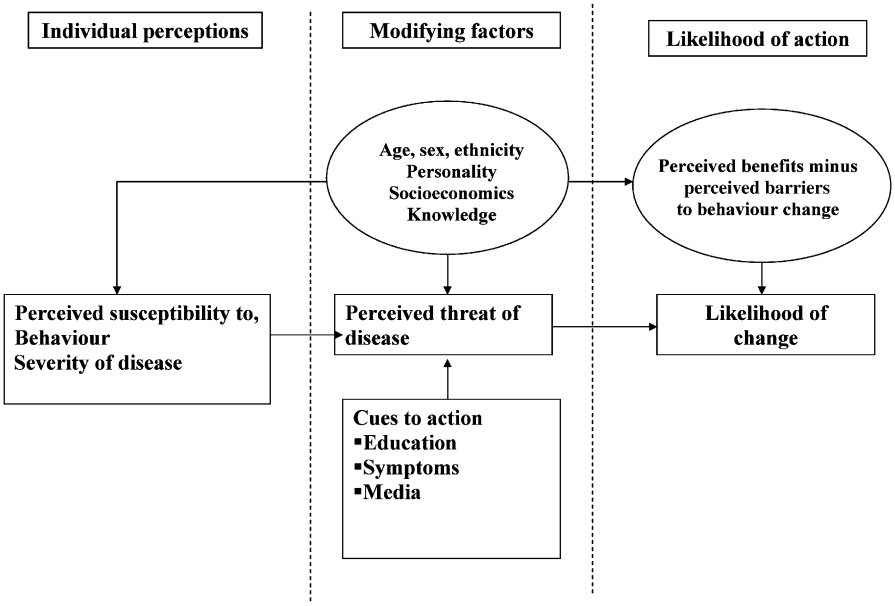

Fig. 1 The Health belief model (HBM) components and linkage from Rosenstock et al. (1988).

have previously been described as based on 'dependent collectivism' compared with 'independent individualism' in Sweden (Hofstede, 1984). Islamic countries have also been described as hierarchical, with greater need of rules or regulations compared with independent behaviour, low power distance and low needs of formal rules in Swedish society.

In the context of stressful life transitions, such as migration, general beliefs of efficacy may serve as a personal resource or vulnerability factor. A high sense of perceived self-efficacy is a buffer against distressing experiences (Jerusalem and Mittag, 1995).

The model of locus of control (Rotter, 1966) distinguishes between events that are able to be controlled by the person themselves or circumstances outside the person's control as a result of luck, chance and fate (internal vs external locus of control). Individuals who feel they have control over their health are more likely to be compliant and carry out health-related behaviours.

Methods

Study design and sample

A qualitative exploratory study was conducted in 2000–2001, using semi-structured interviews to collect data. The interview style was chosen to allow participants to feel as free as possible to relate their stories and to reach a deeper understanding (Flick, 1998).

A consecutive sampling procedure was used; all women visiting a specialised diabetes clinic at a university hospital were offered, by the staff, the opportunity to participate. Criteria for inclusion were age 16 years or older, and diagnosis of GD (O 24.4 – Gestational Diabetes Mellitus; ICD IX 1997).

Ethical considerations

The study was approved by the Ethics Committee of the University of Lund, and was carried out with written informed consent from the participants, and in accordance with the Helsinki Declaration. Thus, they were assured of anonymity and confidentiality. In the interviews, the interviewer was attuned to signs of distress in the participants, and facilities were available for referral to a psychologist for counselling if considered necessary. However, the interviews were conducted without problems.

Interview guide

A thematic interview guide with open-ended questions, including scenarios of common health problems related to pregnancy, was used. The interview guide was developed partly on the basis of findings from previous studies (Hjelm et al., 1998, 1999, 2002) and a review of the literature on pregnancy and health. The interview guide was also peer reviewed by midwives, DSNs and diabetologists working with women with GD. The interview guide addressed beliefs about health and illness in women with GD. Themes investigated were beliefs about health and illness, factors of importance for health causes, explanations and perceived consequences of GD, care-seeking behaviour, self-care advice and the inclination to follow it. The scenarios described common health problems related to pregnancy, demanding self-care, help seeking, or both, and the origin of the problem was also discussed. The scenarios were chosen from descriptions in the published literature and professional experience.

Procedure

The interview was conducted in gestational weeks 34–38. The interview began with a standardised interview concerning medical and socio-demographic background variables, and a semi-structured interview concerning beliefs about health and illness followed. The interviews were led by a female diabetes-educated nurse (first author) not involved either in the diabetes clinic or in the management of the women. When needed (in all except two cases), an authorised female Arabic-speaking interpreter was used, and the sequential interpretation technique (word for word) was applied. The interviews were held in secluded rooms outside the clinic. The interviews lasted between 1.5–2 hrs, were audio-taped and transcribed verbatim (about 600 pages in total). The texts were coherent and without non-translated sequences. The interview-guide was pilot-tested with three women (not included in the study), and some minor changes were made.

Analysis of data

Collection and analysis of data proceeded simultaneously, until theoretical saturation occurred, which meant that new informants did not contribute to a deeper understanding (Miles and

Huberman, 1994; Flick, 1998). The aim of the analyses was to be open to as much variation in the material as possible, and to search for regularities, contradictions, patterns and themes by comparing the respondents' statements (Miles and Huberman, 1994; Flick, 1998). Topics were identified by reviewing each line of the texts, and then the material was extracted and condensed into content categories (Miles and Huberman, 1994; Flick, 1998). Categories were also introduced to the material from theoretical models (Flick, 1998); the lay theory model of illness causation (Helman, 2000) and the model for health-care seeking behaviour (Kleinman, 1980), as previously described (Hjelm et al., 1998, 1999, 2002), were used as main analytical categories. After the interviews, the tapes were listened to and notes were taken about general findings and emerging themes and ideas. In order to increase the trustworthiness of the findings, the transcripts from the sessions were analysed independently by two researchers (Flick, 1998), a DSN and a general nurse (first and second authors), who showed strong agreement.

Findings

Sample characteristics

The study population comprised 13 women born in Sweden and 14 women born in countries in the Middle East with gestational diabetes mellitus: from Iraq ($n = 10$), Iran ($n = 2$) and Lebanon ($n = 2$) (Table 1). In the Middle-Eastern group, eight were refugees and six had migrated to Sweden for family reasons. The Middle-Eastern group had been residents in Sweden for a median 5 (0–16) years. All women except one in the Middle-Eastern group had received their diagnoses of GD in Sweden. Three of the women from the Middle East had had GD during a previous pregnancy.

Most participants controlled their diabetes with diet only. Swedish women mentioned more complications related to pregnancy, such as nausea, fatigue and hypertension, and were more often treated with drugs.

Women from the Middle East had low educational level, many were unemployed or housewives, and more were dependent on social allowances (5 vs 0). Swedish women had a higher educational level, were more often gainfully employed, and were on sick-leave or maternity leave (11 vs 2 and 8 vs 3).

Beliefs about illness

Respondents reacted with negative feelings and worries when informed about the diagnosis. Women from the Middle East who had relatives with diabetes mellitus and Swedish women had the strongest reactions:

> I panicked..., and ...she said...yes, you have diabetes and you have to live like this and the baby can become too big and complications at birth...was the only thing I heard...I was terribly frightened...(Respondent 9)

The Swedish women predicted the development of complications related to diabetes mellitus in later life and claimed:

> ...I would die 15 years prematurely ...I would have diabetes shoes (orthopaedic shoes), stroke, big ulcers, dialysis...amputation and sitting in a wheelchair .... (Respondent 1)

However, women were also surprised that they had no symptoms of diabetes and thus reacted later. Others were grateful for the early detection as they felt it was possible to influence their health and thus the well-being of the baby. Some of the Middle-Eastern women reported feeling calmer as their blood glucose values decreased and the staff had informed them that GD would disappear after birth.

The Swedish women actively sought information about GD. They emphasised a lack of information and a perceived information gap between the initial and limited information given by the midwife screening for the disease and the thorough information given by specialist diabetes staff, often about 2 weeks later. Information was sought from books and the Internet, but little had been found. Contact with the diabetologist was appreciated and helped them relax. In contrast, the women from the Middle East said that they had received information about self-monitoring of blood glucose and diet.

Participants perceived heredity and hormonal changes due to pregnancy (factors related to the individual) as the main causes of GD. The Middle-Eastern women stated that they did not know the cause, compared with the Swedish-born women who, for example, added stress (social factors) related to previous delivery of a stillborn baby, and hormone treatment for difficulties in pregnancy (individual and natural factors) (Table 2). When a list of potential causes of GD was discussed, the influence of supernatural factors was added by women from the Middle East. Participants in both groups added other individual, natural and social factors.

Table 1 Characteristics of the studied populations.

Variable	Women with gestational diabetes born in the Middle East ($n = 14$)	Women with gestational diabetes born in Sweden ($n = 13$)
Age*	35 (28–44)	30 (24–41)
Time of residence in Sweden*	5 (0–16)	
Reason for immigration to Sweden		
Refugee	8	
Refugee with family ties (husband in Sweden)	6	
Diagnosis of GD at previous pregnancy	3	
Treatment of GD (*n*)		
Diet	11	12
Insulin	3	1
B-Glucose*,†	5.1 (3.8–7.2)	5.2 (4.2–5.6)
Blood pressure (mm Hg)	110/70 (systolic 95–120, diastolic 55–80)	120/65 (systolic 110–135; diastolic 60–90)
Medication during pregnancy	6 (Calcium, Fe, Levaxin®)	9 (Fe; Fe+multivitamins; antiemetics; Gaviscon®; antiallergics; antacids)
Nulliparous	2	10
Parous	12	3
Educational level (*n*)		
Number of years in total	8.5 (0–16)	14 (12–16)
Illiterate	0	0
<6 years	6	0
<9 years	3	0
Upper secondary school (9–12 yrs)	2	6
University >2 years	3	7
Work (part/full-time)	2	11
Social allowance (*n*)	5	0
Unemployment (*n*)	1	1
Sick-leave (part/full-time)	3	4
Maternity allowance (part/full-time)	0	2
Parental allowance	0	2
Housewife (*n*)	3	0

Table 1 (*continued*)

Variable	Women with gestational diabetes born in the Middle East ($n = 14$)	Women with gestational diabetes born in Sweden ($n = 13$)
Family circumstances (*n*)		
Unmarried	0	0
Cohabiting	0	7
Married	14	5
Living separately from partner	0	1
Widow	0	0
Divorced	0	0
Problems related to pregnancy	4 Pain/spasm in the calf and lower leg oedema	5 Lower leg oedema
	1 Nausea/heartburn	4 Nausea/heartburn
	4 Back problems	4 Back problems
	1 Tiredness	3 Tiredness
		2 Hypertension
	1 Hypotension	
	1 Pain in the flank	
	1 Decreased sensibility in the hands	
	2 Decreased thyroid function	
		1 Myoma (pain)
		2 Headache/migraine
		1 Dyspnoea
		1 Candidosis
		1 Contractions
		1 Pollakiuria
		1 Problems with sleep
In-hospital care during pregnancy (days)*	2 (1–2)	2 (1–3)

*Values are medians (range).

†Calculated as the median value from measured values during the last day tested. GD, gestational dibetes.

Table 2 Causes of GD as expressed by women born in Sweden and the Middle East.

Main analytical category*	Women	
	Born in Sweden number of statements (*n*)	Born in the Middle East number of statements (*n*)
Factors related to the individual	(10) Inheritance Obesity, wrong diet, drinking too much lemonade Hormonal change Inactivity* Diseases in the pancreas* Imbalance between yin and yang or heat and cold*	(8) Inheritance Obesity, wrong diet, too many sweets Hormonal change Inactivity* Diseases in the pancreas* Imbalance between yin and yang or heat and cold* Mental factors Infections*
Factors related to nature	(2) Treatment with hormones Treatment with diuretics*	Treatment with diuretics*
Factors related to the social sphere	(2) Stress and wrong diet Stress because stillborn child in previous pregnancy Disturbed relations to living persons* Disturbed relations to dead persons*	Stress* Disturbed relations to living persons* Disturbed relations to dead persons* Coldness, damp and heat that facilitate the influence of the evil eye*
Factors related to the supernatural sphere	Fate*	Fate* Punishment by God, evil spirits
Don't know	(2) Don't know	(7) Don't know

The main analytical categories were derived from the lay theory model of illness causation (Helman, 2000), in which causes of illness could be related to the individual, nature, social relations and/or the supernatural world.

*Findings from discussions concerning a list of potential causes of gestational diabetes.

The women born in the Middle East said that they did not know how long the disease would last but that:

> they [health care staff] say that after pregnancy it will be over… (Respondent 14)

The Swedish women, however, wanted GD to be temporary. Only one woman from the Middle East, compared with most of the Swedish women, reported a risk of her developing DM in the future:

> I hope it will be over after the delivery but it is latent…there is an increased risk of …diabetes …it depends on my dietary habits and … this is a real alarm bell … I need to lose weight and I need to get out exercising… . (Respondent 2)

All participants reported fear of GD adversely affecting the baby's health. The Swedish women talked about the development of complications related to DM themselves:

> if I got type 2 diabetes…with coronary heart disease, stroke and other things…. (Respondent 1)

The Middle-Eastern women claimed no knowledge of what happens in the body when they have GD. In general, Swedish women gave more knowledgeable explanations about the pancreas, insulin production and blood glucose, although limited knowledge was reported.

In order to achieve good glycaemic control, all participants reported that they should eat regularly and avoid sweets and sugar:

> two cooked meals a day…breakfast, snack, lunch, snack, dinner and snack…. (Respondent 5)

Regular SMBG was stated as important, but with varying frequencies and cut-off levels, according to the severity of the GD. When discussing values showing good control, the Swedish women reported a great variation from less than seven to above 12, whereas most of the Middle-Eastern women reported under seven.

Beliefs about health

Health was described by participants, irrespective of origin, as factors related to the individual and from a pathogenetic perspective (i.e. freedom from disease and feeling well and being healthy). Swedish women focused on a healthy lifestyle expressed as:

> to live a healthy life…with healthy food and exercise. (Respondent 6)

Women from the Middle East, put more emphasis on feeling well and living a good and active life:

> if you have health then you are able to do everything…If you have diseases you can't do anything. (Respondent 22)

Social factors were also mentioned:

> Health is everything…It is good to keep in health for one's work, for one's home, for one's husband…the whole responsibility we [women] have for our children. (Respondent 17)

The Swedish women talked about harmony and balance in the body in terms of feeling well in body and soul.

Participants mainly reported the importance of a healthy lifestyle with healthy food and exercise (individual factors), and good relations with family and friends (social factors) as important for the health of the mother and baby. The Middle-Eastern women also talked about adherence to the doctor's advice, whereas Swedes added stress avoidance, meaningful work, leisure activities, emotional factors (thinking positively) and physical factors (rest and good sleep).

All the participants stated that the economic situation was of importance for health, but was not considered as a particular problem in the present situation, as the baby was of greatest importance to them. Material, emotional and social support were considered important for health:

> Support with help in domestic work…try to understand my situation and …support in adjustment to positive dietary habits. (Respondent 6)

The Swedish women perceived healthcare staff as a source of information, and emotional support was also discussed in terms of being listened to and understood. The Middle-Eastern women had a passive attitude and expected to be taken care of, helped and given advice.

When considering factors with a negative influence on health, the Swedish women talked about emotional factors, such as anxiety, and work-related stress and physical factors, such as lack of exercise, as being negative for health. Women from the Middle East seldom identified any negative factors but talked about stress, irregular meals and their husband's smoking.

The Swedish women discussed preventative measures, such as the combination of exercise, eating more fibre and less sweets (individual factors). Women from the Middle East discussed individual factors, such as the right food, or social factors, such as avoiding stress by keeping away

from problems, and it was also sometimes claimed that they followed advice received.

The Middle-Eastern women had not used home remedies, natural medicine or alternative medicine. They said they did not know about this and others stated:

> I have never tried but I have seen others in my country who have used it (Respondent 21).

A Swedish woman said:

> I decided…that I should not use this during my pregnancy, but I have done it before… (Respondent 7)

Remedies used (increased intake of water, iron, vitamins, food, exercise, fruit) mainly had a general health-promoting effect. Acupuncture was sometimes used during pregnancy to reduce pain or nausea.

The celebration of feasts and traditions was considered important for health by most respondents by upholding networks with relatives and friends, which gave feelings of joy and well-being. It was mentioned that traditional feasts might have positive and negative consequences, such as eating too much and incorrectly. The Swedish women also sometimes pointed out the negative effects of stress resulting from preparations for the feasts.

Women from the Middle East stated that they celebrated Ramadan during pregnancy and that fasting made them feel better both physically and mentally. Fasting was sometimes used, although, according to the Koran, it is not obligatory during pregnancy:

> The physician wanted to prevent me from fasting, but I have done it anyhow. I didn't think I could avoid it…While pregnant with all my children …and when breast feeding them, I have fasted, and one can put up with much more then. (Respondent 16)

> I am a Muslim and I like to celebrate Ramadan and I like fasting…but for 2 years I have not fasted as I have been pregnant. (Respondent 15)

The reason for fasting while pregnant was expressed as being part of their religion and possibly because they felt mentally ill without it. Religion was considered of importance for health among the Middle-Eastern women:

> If I pray to God I think he will help me to get well. (Respondent 22)

The Swedish women said that they were believers but:

> I have not been so worried that I have sought help from religion. (Respondent 7)

None of the respondents had been in contact with self-help groups for people with diabetes. The Swedish women reported wanting the development of self-help groups for women having GD:

> It would have been interesting, I think, if there had been a group where one could meet other people who had had gestational diabetes…very useful, … to meet others that could talk to us about this. (Respondent 12)

Self-care and care-seeking pattern

A clear pattern emerged from the discussions (Table 3), and showed that women born in the Middle East often experienced a variety of symptoms, such as backache, pain in the body, nausea and vomiting, headache and dizziness, practised self care (measures categorised as individual or natural factors) and received support from midwives or physicians (professional sector) and husbands or relatives (popular sector). The Swedish women frequently used medication (natural factors) to prevent nausea and vomiting, frequently sought help from health-care staff and consequently were more often prescribed sick-leave from work, which was not mentioned at all by the Middle-Eastern women. The Middle-Eastern women discussed the influence of social factors, such as heavy work load or mental status, whereas Swedes were more prone to explain their problems with medical expressions, such as symphysiolysis or hormonal changes.

All respondents in the Swedish group, and most of the Middle-Eastern women, reported fear of labour pain and worries for the baby:

> Fear of the delivery is something natural which I think all women have…but for this I am more worried about how diabetes can affect the baby… (Respondent 7)

Lack of support by social networks was mentioned by the Middle-Eastern women. Participants in both groups said that they discussed their fears and feelings with professionals as well as family members and friends (popular sector). The Swedish women also tried to prepare themselves by searching for more information in books.

Table 3 Results of discussions concerning self-care measures and explanations of health problems described, related to pregnancy in women with gestational diabetes born in Sweden and the Middle East*.

Measures to restore health				Healthcare-seeking pattern§		Explanations of the health problems	
Individual measures†		Nature cure or pharmaceutical measures‡					
Swedish-born women	Women born in the Middle East	Swedish-born women	Women born in the Middle East	Swedish-born women	Women born in the Middle East	Swedish-born women	Women born in the Middle East
Health problem 1: Backache							
Rest Avoid stress Exercises in water Bath Use of girdle Take a pause in work Being careful when getting out of bed	Rest Use of girdle Massage Wait and see		Medication (pain killers)	*The professional sector* Advice from midwife ($n = 5$)	($n = 2$)	Heavy, increased weight Symphysiolysis Sciatica Wrong load Backache before pregnancy	Much to do Activity Don't know Weight Slipped and hurt herself
				Advice from physiotherapist and use of training programmes ($n = 6$)	($n = 2$)		
				Contact with private physician ($n = 1$)	($n = 1$)		
				The folk sector One person had contacted for use of healing	*The popular sector* Massage by the husband in one case		
Health problem 2: Tiredness and feebleness							
Rest in the day	Rest in the day	Advice from midwife about intake of iron	Insulin	*Professional sector*		Pregnancy/hormonal change	Diabetus mellitus and change of dietary habits
Change of diet; Increased intake of iron	Eating something: fruit, banana		Iron Strengthening injections in Iraq	Advice from midwife ($n = 3$)	($n = 3$)	Anaemia	Pregnancy/hormonal change
	Splint for hand Taking a shower			Advice from physician in four cases for prescription of sick-leave	In one case prescription of insulin In one case advice about splint for hand	Heavy workload	
					Popular sector Husbands help with housework		

Health problem 3: Emesis and nausea

Wait and see Eating biscuits and taking it easy in the morning	Wait and see Eating often Dietary change: drinking lemon juice avoiding oil and spicy food	Acupuncture Antihistamines (Lergigan®) Chalk Antacids (Novaluzid®) Acupuncture from midwife	Antacids (Novalucol®)	*Professional sector* Advice from midwife ($n = 3$) Advice from physician for prescription of drugs in two cases and sick-leave in one case *Popular sector* Husband/relatives aid in cooking meals	($n = 2$) Advice from emergency ward in one case and prescription of antacids	The hormones Don't know Too tight in the stomach Acidity of the stomach/ poorly obstructing pylorus Pregnancy Worries about back problems and bed rest	Pregnancy/hormonal change Mental influence Don't know

*The same pattern was found concerning pain in the body, pain in the stomach, headache and dizziness.

†According to the lay theory model of illness causation (Helman, 2000), these measures were categorised as belonging to the individual sphere and

‡nature. Within these main analytical categories the subcategories are stated.

§According to a model of healthcare-seeking patterns (Kleinman, 1980), health care could be sought either in the professional, popular or the folk sector. The professional sector is the organised, legally sanctioned healing professions, such as modern western scientific medicine or biomedicine. The popular sector comprises non-professionals in the family, among friends or relatives. The folk sector has certain individuals, often termed folk-healers, who specialise in different forms of healing, sacred or secular.

Discussion

Studies of health as a concept are unusual in research on maternity care (Bondas, 2000). In this first study of beliefs about health and illness in women with gestational diabetes, there seems to be a pattern in which Swedish women perceive pregnancy as a disease to a greater extent than immigrant women, who regard pregnancy as a natural part of life.

Methodological discussion

A consecutive sampling procedure was used, as there were no formal registers about foreign-born people. A sampling bias (Miles and Huberman, 1994) could have been introduced, as there were fewer less-educated women in the Middle-Eastern group compared with the more highly educated Swedish group included in the study. However, within-group analysis of the Middle-Eastern group did not reveal any differences in beliefs between women with high and low education. The sampling procedure also implied that most of the Swedish women were nulliparous, whereas women from the Middle East were multiparous, came from several countries in the area, and also had varying migrational backgrounds and time of residence in Sweden. All these are factors that might influence health beliefs and care-seeking behaviour, and it could be seen as a limitation not to be able to establish the determining factor. The group studied could, however, be regarded as representing the population of women that will be found in a maternity clinic in Sweden. The study design was chosen to explore beliefs about health and illness, and disclose different possible perspectives rather than providing findings generalisable to the wider population (Flick, 1998). However, carefully collected and analysed qualitative data are transferable to other groups or contexts with similar characteristics (Miles and Huberman, 1994; Flick, 1998).

In this study, interpreters were used in all except two interviews, and no noticeable effect on the quality of interview transcripts was seen, as the texts showed coherency and no non-translated sequences were found. Language and culture can form barriers between respondents and researchers, and the use of interpreters is problematic in interview studies (Small et al., 1999a). In order to reduce the possible effects of language problems related to interpretation, only certified (specially trained) and culturally competent interpreters were used, in addition to the sequential interpretation technique. As only a 'native' makes first-order interpretations, culture-specific phenomena were discussed with the interpreters at the time of the interviews and during the analyses to compensate for second-order interpretations of the foreign cultures studied.

Beliefs about health and illness

Beliefs about health and illness, irrespective of origin, were mainly related to individual factors, combined with natural and social factors. Women from the Middle East focused more on social factors, and Swedish-born women on individual factors. This might be explained by better knowledge about bodily function and the disease among Swedes, and the influence of the role as an immigrant in the foreign group (Hjelm et al., 2003). Help was sought, when needed, from the professional sector, but to a greater extent by Swedish women than Middle-Eastern women. Complementary care was in some cases given in both groups by a spouse or relative in the popular sector. This is in contrast to previous findings, which suggest that westerners focus on the individual and nature, and consult the professional sector, whereas non-westerners emphasise the influence of social and supernatural factors, and to a large extent turn to the popular and folk sector. Lack of similarities might be explained by differences in health-care systems between countries and restricted empirical testing of explanatory models used (Kleinman, 1980; Helman, 2000). It has also been found (Small et al., 1999b) that familiarity with services and attitudes of staff influence women's views of care, and thus may affect care seeking. Thus, generalisations between western and non-western cultures should not be made.

All the women in this study reported worries for their baby's health and well-being, but showed different health behaviours, previously described as different attitudes to chronic illness in terms of an 'interruption' or an 'immersion' (Charmaz, 1991). Swedish women did not accept the disease as chronic but as ultimately ending in recovery, 'interruption', and thus initiated a battle against it by living a healthy life, searching for information about how to manage the disease and trying to prevent the development of Type 2 diabetes mellitus in the long term. Women born in the Middle East passively tried to adapt to advice from health-care staff, and, by living a controlled life, they focused on the existence of the illness (immersion), which they had been informed would disappear after birth. The difference might be

explained by a higher awareness of risk related to a higher perceived susceptibility to, and severity of, the disease (Rosenstock et al., 1988), and better knowledge about GD in Swedish women (Hjelm et al., 1999, 2003).

The Swedish women also showed an internal locus of control (Rotter, 1966), as they saw possibilities of influencing their health compared with the Middle-Eastern women, who expressed more of an external locus of control (e.g. explaining the causes of the disease in terms of the influence of supernatural factors); the Middle-Eastern-born women did not discuss their own role in health-related behaviours (Rotter, 1966) to the same extent.

Dissimilarities in health-related behaviours and risk awareness might also be related to the degree of self-efficacy perceived (Rosenstock et al., 1988) by the participants. Being brought up in a culture based on hierarchical relationships in the Middle East, learning to obey authorities and to follow rules (Hofstede, 1984) might have lowered the self-efficacy in the individual (Oettingen, 1995) and fostered the compliant behaviour demonstrated by the Middle-Eastern-born women in this study. The Swedish culture, in contrast, encourages independent behaviour (Hofstede, 1984) and increased levels of self-efficacy (Oettingen, 1995). Most of the Middle-Eastern women claimed to be practising Muslims, and this may have influenced the compliant behaviour observed in the study, as Islamic doctrine requires the adherence of rules and urges health-promoting activities (Gatrad, 1994; Samuelsson, 2001). The degree of self-efficacy might also be related to migrational experiences and the influence of previous or present post-traumatic stress disorders, the diagnosis of the disease, the immigrant status (Hjelm et al., 2003) and different attitudes to pregnancy in different cultures (Callister et al., 1996).

The Swedish-born women more frequently searched for help and advice from health-care staff, expressed their beliefs about health and illness in medical terms, were more often given sick leave and used medications against complications related to pregnancy to a greater extent than women from the Middle East; Middle-Eastern women said they experienced more pregnancy-related problems. The health problems in foreign-born women might be related to the presence of post-traumatic stress disorder related to migrational experiences, and acted as confounding factors in the experience of ill-health, previously discussed in studies of Arabic-speaking migrant women with diabetes mellitus living in Sweden (Hjelm et al., 2003). Pregnant women from Somalia suffered more intense and severe vomiting and nausea when living in Sweden than in their home country, and this was related to psychosocial stressors experienced in the new country (Essén et al., 2000). Lower risk awareness and knowledge concerning pregnancy was also found in these women (Essén et al., 2000; Essén et al., 2002). This is possibly related to the fact that the perception of pregnancy as something natural or pathological differ between cultures (Callister et al., 1996). Another influencing factor might be that Swedish women were mainly nulliparous, whereas those from the Middle East were multiparous. Arab women are said to be proud to be healthy during pregnancy and do not believe in unnecessary medical care unless they have complications (Zurayk et al., 1997). Arab–American women commonly seek prenatal knowledge from relatives and friends (Laffery et al., 1989). Many immigrant women come from cultures where women are nurtured, valued and supported by other women during their pregnancies and, in their new home country, they are often socially isolated within an alien health system and separated from their normal birth and postpartum practices (Barclay and Kent, 1998; Essén et al., 2000). In many western countries, the scope of medicine has increased dramatically in this century, now including life events, such as pregnancy and childbirth, that were previously viewed as normal. Today, childbirth is perceived as an illness that needs to be controlled and monitored in order to prevent poor outcomes (Purkiss, 1998).

In this investigation, Swedish women had more strained living conditions, being more often gainfully employed and exposed to work-related stress, and thus needed treatment for pregnancy-related complications (pathological perspective) in order to manage their work, compared with Middle-Eastern women who were mostly unemployed or housewives. Some of the Middle-Eastern women in this study did fast during Ramadan, despite being pregnant and advised by the physician not to fast. According to the Koran, pregnant women are not obliged to fast (Gatrad, 1994). The reasons stated by the women related to physical and, particularly, mental well-being, and the fundamentals of the religion were strictly followed; the rationale behind the decision to fast during pregnancy (Gatrad, 1994) may be the belief that extra blessings will be granted to mother and baby. Thus, it is important to recognise that, from the lay perspective (Helman, 2000), supernatural forces and religion may have a stronger influence than professional advice.

Irrespective of cultural background, participants defined health from a pathogenetic perspective (Antonovsky, 1987). Fears were often related to the health and well-being of the baby, as previously described (Bondas, 2000; Berg, 2002), because the mother feels a moral commitment and exaggerated responsibility towards the baby. Many women from the Middle East did not know the cause of GD, and reported the influence of supernatural factors (e.g. punishment by God, evil spirits), compared with the Swedish women who expressed themselves in medical terms and discussed the influence of heredity and hormonal changes related to pregnancy. Neither did the Middle-Eastern women know how long the disease would last, but healthcare staff had informed them that it would end after birth; Swedish women claimed that they did not know, and discussed the increased risk of developing diabetes mellitus in the future. This suggests that awareness had been raised in both groups, possibly increasing levels of stress (Berg, 2002); it also illustrates higher perceived susceptibility to, and severity of, the disease (Rosenstock et al., 1988) among Swedish women. However, as most of the Middle-Eastern group claimed to be practising Muslims, whose religious doctrine urges health-promotion activities (Samuelsson, 2001), this group is possibly receptive to information, such as the importance of exercise, which few knew anything about. This represents, as in the pregnancy, a window of opportunity for health-care providers to change lifestyle patterns to habits that are healthier for the individual as well as society (Jovanovic, 1998), and thus opens opportunities for education about the future risk of developing Type 2 diabetes mellitus and its prevention.

Implications

All the women, irrespective of origin, worried about their baby's health and well-being, and strove for a healthy lifestyle, albeit with different health behaviours: actively seeking information or passively adapting to advice received. Thus, in caring for women with GD, it is important to assess individual beliefs about health, illness and risk awareness, and to meet individual needs. In some cases, the need is to reduce the person's anxiety, whereas, in others, the focus should be on increasing the person's health awareness. Furthermore, it is important for all medical staff to recognise pregnancy as a time to develop and implement health education aimed at promoting health (Jovanovic, 1998) in a long-term and life-long perspective, for both the woman and her baby. Hence, the information given needs to emphasise the potential risk of developing Type 2 diabetes mellitus in the future (Persson and Hansson, 1998; Gabbe, 2003), and the importance of weight control, dietary habits and exercise to prevent this (Gabbe, 2003) rather than lulling individuals into a false sense of security about the possibility of recovering from GD after birth. Information needs to be based on facts, delivered in a non-threatening way; the individual's own capacity and the increased tendency to lifestyle changes and health awareness during pregnancy (Berg, 2002; Bondas, 2000) should be used in a positive manner for both mother and baby.

When caring for immigrant women, migrational background, the presence of post-traumatic stress disorder and perception of pregnancy-related complications (natural/pathological) need to be considered to reach the goal of well-balanced glycaemic control. Many respondents spontaneously expressed positive feelings, sharing their experiences and reducing their burden of both being pregnant and having GD, and also gaining increased knowledge from the interviews. This indicated, as was further supported by some participants, the need and desire to develop possibilities to discuss the disease more thoroughly. This could be organised either by personal contacts with people who have had GD, participating in discussions or self-help groups consisting of women with GD, or more individual discussions with the health-care staff at the clinic. The model chosen should be individually judged. This kind of support could help women reduce levels of stress, which could improve glycaemic control and the health of the mother and baby (Persson and Hansson, 1998).

Conclusion

Beliefs about health and illness differ, but may influence a person's awareness of risk and level of self-care practice. In this study, Swedish women seemed to initiate a battle against the disease and took a long-term approach to combatting the disease, whereas women from the Middle East seemed to adapt to GD, and perceived it and other pregnancy-related health problems as a natural part of their life.

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References

ADA American Diabetes Association, 2003. Gestational diabetes mellitus 2003. Diabetes Care 26, 103–105.

Antonovsky, A., 1987. Unraveling the mystery of health. Jossey-Bass, San Francisco.

Bandura, A., 1995. Exercise of personal and collective efficacy in changing societies. In: Bandura, A. (Ed.), Self-Efficacy in changing societies. Cambridge University Press, New York.

Barclay, L., Kent, D., 1998. Recent immigration and the misery of motherhood: a discussion of pertinent issues. Midwifery 14, 4–9.

Berg, M., 2002. Genuine caring in caring for the genuine (doctoral dissertation). Acta Universitatis Upsaliensis. Comprehensive Summaries of Uppsala Dissertations from the Faculty of Medicine 1146.

Berger, P., Luckmann, T., 1991. The social construction of reality: a treatise in the sociology of knowledge. Penguin Books, London.

Berry, J.W., 1997. Immigration, acculturation, and adaptation. Applied Psychology: an International Review 46, 5–68.

Bondas, T., 2000. Expecting a baby. A nursing science study of women's perinatal experiences (doctoral dissertation) [in Swedish]. Åbo Akademi University Press, Åbo.

Callister, L.C., Vehviläinen-Julkunen, K., Lauri, S., 1996. Cultural perceptions of childbirth: a cross-cultural comparison of childbearing women. Journal of Holistic Nursing 14, 66–78.

Charmaz, K., 1991. Good days, bad days: the self in chronic illness and time. Rutgers University Press, New Brunswick, New Jersey.

Dornhorst, A., Paterson, C.M., Nicholls, J.S., et al., 1992. High prevalence of gestational diabetes in women from ethnic minority groups. Diabetic Medicine 9, 820–825.

Essén, B., Bödker, B., Sjöberg, N.-O., et al., 2002. Are some perinatal deaths in immigrant groups linked to suboptimal perinatal care services? Perinatal audit of infants to women from Africa's Horn delivered in Sweden, 1990–96. British Journal of Obstetrics and Gynaecology 109, 677–682.

Essén, B., Johnsdotter, S., Hovelius, B., et al., 2000. Qualitative study of pregnancy and child-birth experiences in Somalian women resident in Sweden. British Journal of Obstetrics and Gynaecology 107, 1507–1512.

Flick, U., 1998. An introduction to qualitative research. Sage Publications, London.

Gabbe, S.G., Graves, C., 2003. Management of diabetes mellitus complicating pregnancy. Obstetrics and Gynaecology 102, 857–868.

Gatrad, A.R., 1994. Attitudes and beliefs of Muslim mothers towards pregnancy and infancy. Archives of Disease in Childhood 71, 170–174.

Habermas, J., 1984. The theory of communicative action vol 1: reason and rationalization of society. Polity Press, Cambridge.

Habermas, J., 1987. The theory of communicative action vol 2: the critique of functionalist reason. Polity Press, Cambridge.

Helman, C., 2000. Culture, health and illness. Butterworth & Co (Publishers), Ltd., London.

Hjelm, K., Bard, K., Nyberg, P., et al., 2003. Religious and cultural distance in beliefs about health and illness in women with diabetes mellitus of different origin living in Sweden. International Journal of Nursing Studies 40, 627–643.

Hjelm, K., Isacsson, Å., Apelqvist, J., 1998. Health care professionals' perceptions of beliefs about health and illness in migrants with diabetes mellitus. Practical Diabetes International 15, 233–237.

Hjelm, K., Nyberg, P., Apelqvist, J., 1999. Beliefs about health and illness essential for self-care practice: a comparison of migrant Yugoslavian and Swedish diabetic females. Journal of Advanced Nursing 30, 1147–1159.

Hjelm, K., Nyberg, P., Apelqvist, J., 2002. The diabetic foot—multidisciplinary management from the patient's perspective. Clinical Effectiveness in Nursing 6, 66–77.

Hofstede, G., 1984. Culture's consequences: international differences in work-related values. Sage Publications, London.

Jerusalem, M., Mittag, W., 1995. Self-efficacy in stressful life transitions. In: Bandura, A. (Ed.), Self-efficacy in changing societies. Cambridge University Press, New York.

Jovanovic, L., 1998. American Diabetes Association's fourth international workshop-conference on gestational diabetes mellitus: summary and discussion. Diabetes Care 21 (suppl 2) B131-136.

Kleinman, A., 1980. Patients and healers in the context of culture. University of California Press, London.

Laffery, S.C., Meleis, A., Lipson, J.G., et al., 1989. Assessing Arab–American health care needs. Social Science and Medicine 29, 877–883.

Lawson, E.J., Rajaram, S., 1994. A transformed pregnancy: the psychosocial consequences of gestational diabetes. Sociology of Health and Illness 16, 536–562.

Lund, C., Ohlsson, R., 1994. From import of labour migrants to immigration of refugees [in Swedish]. SNS Förlag, Stockholm.

Lundgren, I., Wahlberg, V., 1999. The experience of pregnancy. The Journal of Perinatal Education 8, 13–20.

Miles, M.B., Huberman, A.M., 1994. An expanded sourcebook: qualitative data analysis, 2nd edn. Sage Publications, London.

Oettingen, G., 1995. Cross-cultural perspectives on self-efficacy. In: Bandura, A. (Ed.), Self-efficacy in changing societies. Cambridge University Press, New York.

Persson, B., Hansson, U., 1998. Neonatal morbidity in gestational diabetes mellitus. Diabetes Care 21 (suppl 2) B79-84.

Purkiss, J., 1998. The medicalisation of childbirth. MIDIRS – Midwifery Digest 8, 110–112.

Rosenstock, I.M., Strecher, V.J., Becker, M.H., 1988. Social learning theory and the health belief model. Health Education Quarterly 11, 403–418.

Rotter, J.B., 1966. Generalized expectancies for internal versus external control of reinforcement. Psychological Monographs 80 (Whole No. 609).

Samuelsson, J., 2001. Islamic medicine [in Swedish]. Lund, Studentlitteratur.

Small, R., Yelland, J., Lumley, J., 1999a. Cross-cultural research: trying to do it better. Australian and New Zealand Journal of Public Health 23, 385–389.

Small, R., Liamputtong, P., Yelland, J., et al., 1999b. Mothers in a new country: the role of culture and communication in Vietnamese, Turkish and Filipino women's experiences of giving birth in Australia. Women and Health 28, 77–101.

Trad, P.V., 1991. Adaptation to developmental transformations during various phases of motherhood. Journal of the American Academy of Psychoanalysis 19, 403–421.

Yue, D.K., Molyneaux, L.M., Ross, G.P., et al., 1996. Why does ethnicity affect prevalence of gestational diabetes? The underwater volcano theory. Diabetic Medicine 13, 748–752.

Zurayk, H., Sholkamy, H., Younis, N., et al., 1997. Women's health problems in the Arab world: a holistic policy perspective. International Journal of Gynecology and Obstetrics 58, 13–21.