Pregnancy and Diabetes: How Women Handle the Challenges

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ABSTRACT

In order to optimize the possibilities for the birth of a healthy child, pregnant women with type 1 diabetes mellitus (type 1 DM) work hard to achieve normoglycemia. In the research presented here, pregnant, diabetic women's experiences of dealing with life circumstances are summarized as a construct of duality: ''to master or to be enslaved.'' The overall experience of challenges and managing is understood to depend on the individual woman's identity, attitude, and resources including health professionals and social environment. Health professionals in antenatal care have a special responsibility to give care that not only optimizes the biological possibility for a healthy child to be born but also supports the woman with type 1 DM to master the situation and, thus, promote her health, well-being, and motherhood.

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INTRODUCTION

Pregnant women with diabetes mellitus type 1 (type 1 DM)—or insulin-dependent diabetes mellitus—constitute the largest high-risk group with a chronic disease during pregnancy. They make up 0.2–0.4 % of pregnant women in many western countries (Linn & Bretzel, 1997) and 0.41% in Sweden (National Board of Health and Welfare, personal communication, February 3, 2004). The health outcomes for these women and their children have improved remarkably during recent decades. This is mainly due to increased glycaemic control obtained by frequent self-glucose monitoring, effective insulin therapy, and a strict lifestyle including dietary regulation and physical activity. Even so, the frequency of complications for mother and child is still at a high level, including congenital malformations, intrauterine growth acceleration (and sometimes restriction), perinatal mortality and morbidity, and pregnancy complications such as preeclampsia, fetal asphyxia, and technical interventions during childbirth (Platt et al., 2002). Thus, pregnancy with type 1 DM is fraught with challenges.

Pregnant women are especially vulnerable when at high risk (Berg, Lundgren, & Lindmark, 2003). Compared to women with a normal pregnancy, high-risk pregnant women are more anxious, worried, and ambivalent about their pregnancies (Gupton, Heaman, & Cheung, 2001; Hatmaker & Kemp, 1998); have lower self-esteem and greater uncertainty (Gray, 2001; Kemp & Page, 1987; Stainton, McNeil, & Harvey, 1992); and have fewer positive expectations (Heaman, Beaton, Gupton, & Sloan,

1992). Pregnant women with type 1 DM have a higher level of emotional stress (York, Brown, Persily, & Jacobsen, 1996), as well as greater anxiety and hostility during pregnancy (Langer, N., & Langer, O., 1998) compared to nondiabetic, pregnant women. Also, their risk of hypoglycaemia is elevated (Rosenn & Miodovnik, 2000; Walkinshaw, 2000).

High-risk pregnant women are not a homogeneous group in dealing with the challenges they face. They represent adverse conditions in which even closely related conditions present varying emotions. For example, women with gestational diabetes and women with preexisting diabetes present different mood profiles (Langer, N., & Langer, O., 2000).

A paucity of qualitative studies describes experiences of pregnancy and type 1 DM and how women deal with the resulting challenges. One such study describes how, for the unborn child's sake, pregnant women are controlled by blood-glucose levels (Berg & Honkasalo, 2000). Blood glucose is experienced as a personified object benefiting and constantly reminding the mother of the coming child. The child makes demands from the very beginning of pregnancy. The woman is objectified, feeling a loss of control and an awareness of having an unwell, high-risk body. She also expresses exaggerated responsibility, including constant worry, pressure, and self-blame (Berg & Honkasalo, 2000).

In order to provide quality care with perinatal support, increased knowledge about life conditions for women with type 1 DM is required. The objective of the present study was to describe how women with type 1 DM experience and handle their challenges during pregnancy.

Edmund Husserl (1859–1938) was the principal founder of phenomenology and, thus, one of the most influential philosophers of the 20th century. He posited that all science and research have their origins in the natural attitude. He described "lifeworld" as an epistemological idea and outlined a lifeworld theory that became a new basis for all philosophy and human-science research. For more information on Husserl, log on to http://plato.stanford.edu/entries/husserl/

METHOD

The present study used a lifeworld perspective, based on Edmund Husserl's (1936/1970) phenomenological philosophy. Lifeworld includes the everyday world of experience. The method used in this research was based on Dahlberg, Drew, and Nyström (2001) and on Giorgi (1989, 1997), in which the overall aim is to increase the understanding of a human being's existence and everyday world of experience prior to positing any theories. The first criterion is a pure description of the specific experience. The second step is a phenomenological reduction, a criterion of objectivity based on openness. The final criterion is the search for content and meaning, with the aim of formulating a general structure of the studied phenomenon.

Participants

The study was carried out in a university hospital in the western region of Sweden. In order to describe a general structure of the phenomenon, the researcher invited a convenient sample of primiparous and multiparous women with type 1 DM and a good knowledge of the Swedish language to participate. All of the women had various durations of diabetes and vascular complications and had enrolled at an antenatal care unit for high-risk women. The first study included 14 women and focused on the overall experience (Berg & Honkasalo, 2000). A secondary analysis of the data was performed for this report, focusing on how the women handled their life conditions. Four new interviews were performed in order to update the data, focusing directly on how the women handled their life conditions. Participants included 18 pregnant women (10 primiparous and 8 multiparous) aged between 25 and 38 years (with a mean age of 28 years). Four of the women had elementary school education, eight had completed upper secondary education level, and six had studied at the university level. All but one were employed, some part-time. Two of the women were single. See Table 1 for an overview of the study's participants. The

TABLE 1
Interviewed Persons: Age, Diabetes Duration (with Vascular Complications), Parity, and Time for Interviews

IP No.	Age	Diabetes Duration	Parity	Interviews (Gestational Weeks)
1	26	21	0	19, 24, 37
2	38	11	0	14, 22, 39, pp**
3	29	25	I	16, 22, 39, pp**
4	29	19	I	14, 26, 37, pp**
5	28	24	I	14, 25, pp**
6	27	25*	0	11, 27, pp**
7	25	11	0	12, 23, 37, pp**
8	27	17	0	11, 26, pp**
9	30	21	II	14, 26, 34
10	28	17	I	14, 27, 37
11	25	12	0	14, 25, 36
12	33	31*	I	15, 25, 37
13	28	24*	0	12, 24, 29
14	25	11	0	32
15	27	15	I	35
16	26	12	0	37
17	29	5	0	38
18	29	>20	II	35

IP = interviewed person.
*Diabetes with severe vascular complications
**pp = within one week postpartum

mean HbA_{1C} at the beginning of pregnancy for this group was 6.8%.

Interviews

Altogether, 48 open interviews with one open question were performed and recorded. Forty-four interviews with the original 14 women occurred during 1997–1998, and four interviews with the additional four women occurred in 2003. The duration of the interviews varied from 45 to 120 minutes. The women interviewed in 1997–1998 were asked to describe their daily life and other experiences during pregnancy. The women interviewed in 2003 were only asked to describe how they handled daily life during pregnancy. During the interview, the researcher posed follow-up questions such as, ''What do you mean?'' and ''Can you explain more?'' and ''How did you feel?''

Rigor

Rigor and criterion of validity in phenomenological research are ensured by the researcher's openness to hearing the viewpoint of subjects who are interviewed. Openness is obtained through the researcher's suspension of preunderstandings, including a self-critical stance and reflection. Openness to hearing the responses to a research question requires data to be collected in such a way that the basic question about the phenomenon can be fully answered. During the analysis, openness means being present to what is given, including awareness of how the phenomenon reveals or conceals itself (Dahlberg et al., 2001). The researcher is a midwife with experience in caring for childbearing women with type 1 DM. A critical stance to preunderstandings was strived for during the entire research procedure.

Ethical Considerations

Ethical approval and permission to undertake the study were obtained from the local ethics committee. Consent to conduct and record the interview was obtained from each woman, with the assurance that all information would be treated confidentially and that the woman could withdraw at any stage.

Data Analysis

A procedure described by Dahlberg and colleagues (2001), based on Giorgi's (1989, 1997) phenomenological method, was used. The goal was to define an essential structure of the phenomenon. All 48 interviews were transcribed into text and read through to gain a sense of entirety. The text was then reread several times to search for meaning units. These units were then divided into clusters and transformed through denomination with more abstract words. The entire text and parts of the text were considered by frequently returning to the text as a whole. Finally, the essential structure of the phenomenon was culled, named, and described, then organized into three constituent concepts with identified subconcepts (see Table 2). In order to guarantee validity, another researcher was recruited to jointly follow the analysis process, including a critical reading of the results.

RESULTS

The essential structure of the phenomenon is summarized as ''to master or to be enslaved.'' It includes three major constituents, each containing a duality with a positive and a negative dimension: Meaningfulness/Meaninglessness, Reconciliation/Conflict, and Shared Control/Unwillingly Controlled. The constituents and their subcategories (elements) are described below. Quotations from the 18 women, who were given fictitious names, are presented.

Meaningfulness/Meaninglessness

The constituent meaningfulness/meaninglessness is made up of three dual elements: acceptance/

TABLE 2
Pregnancy and Diabetes: How Women Experience and Handle the Challenges

The Essential Structure: To Master or To Be Enslaved	
Constituent	Elements
1. Meaningfulness/ Meaninglessness	• Acceptance/Ambivalence • Hope/Hopelessness • Confirmed Normality/Fortified Malaise
2. Reconciliation/Conflict	• Acceptance/Opposition • Self-Understanding/Lack of Self-Understanding • Rejoice in the Present/ Suppressed Joy
3. Shared Control/Unwillingly Controlled	• Responsibility/Surrendered Responsibility • Health-Care Staff as a Supportive Resource or as a Controlling Factor • Relatives and Employers Who Provide Support or Increase the Pressure

ambivalence, hope/hopelessness, and confirmed normality/fortified malaise.

Acceptance/Ambivalence. The element acceptance/ambivalence describes how women behave in relation to, and react to, the new pregnancy and, thus, to the child. From early pregnancy, the child is very much present. A reminder of its existence especially occurs whenever blood glucose is monitored. This is both a source of motivation and a constraint in efforts to achieve normal blood-glucose levels:

> *As soon as one sees a poor value, you know that there is another person being affected. That is what probably results in anxiety, but at the same time it is a challenge. . . .I know that I must do what I can for it to be healthy.* (Paula)

> *I don't have the right to decide otherwise because the baby is inside me. It's just that. . .I have no choice. The choice has already been made.* (Karin)

The women's struggle to achieve normal blood-glucose levels continued no matter what the circumstances, including severe morning sickness or separation from the child's father. Those with more ambivalence toward their child demonstrated greater difficulty in forcing themselves to achieve good blood-glucose levels. The ambivalence was also present when the strict lifestyle became "too much" or did not result in satisfactory blood-glucose levels. As Gabriella described it, "A feeling that this is an insurmountable situation in checking my blood sugar. How can I cope with thinking about everything I eat?" The women expressed a need to explain their ambivalence, as described by Fanny when talking about her midwife:

> *She explained what happens in my body, et cetera, but very little about me as a person, what happens in my head. Very little about what I actually think about being pregnant and whether it was planned. How I felt about it. . . .One can still be ambivalent—did I really want this to happen?*

Hope/Hopelessness. The women constantly worried about the child and its health. At the same time, they expressed hope. The multiparous women with a positive outcome of earlier childbearing seemed to find it easier to be hopeful. Sara, who was expecting her third child, noted, "I know now that I can have healthy children despite having diabetes. . . . I know that I can influence it." Despite this hopeful attitude, or perhaps hidden behind it, a feeling of doubt was more or less simultaneously present. As Paula said, "Something could go wrong for somebody and that somebody will probably be me. This is confirmed by the statistics."

Confirmed normality/Fortified malaise. Pregnancy confirms normality, which, for the women in this study, meant to be like other women without diabetes. Signs such as a continuous normal course of pregnancy, a normal vaginal birth, and the birth of a child with normal weight confirmed the feeling of normality. For women with severe diabetes, pregnancy and birth were a particularly magical experience:

> *For me, it is magical to be pregnant and to go through a delivery. . . .Being a mother is so fantastic. . ., being pregnant fills every second of my consciousness. . ., both when asleep and when awake. . . .Being pregnant is evidence that I am normal.* (Lena)

The reverse side of this element, fortified malaise (i.e., a feeling of being ill) was emphasized in all the special routines required, such as experiencing frequent contacts with the antenatal care unit, controlling blood glucose levels, receiving ultrasound examinations, being on sick leave from work, and being hospitalized in special ward units. All of these activities contributed to a feeling of being more a diabetic person than a mother-to-be:

> *There is a lot of discussion about blood sugar and diabetes, but very little about children. I thought this was extremely boring.* (Olivia)

> *The negative aspect was that of being special-special. It had the opposite effect on me. The feeling of being sick came back. So far, everything had gone so well and now it was just waiting for the big disappointment, because something had to happen. The delivery feels like one big complication and the baby is probably huge.* (Gabriella)

The women expressed a feeling of being different and outsiders. This feeling was fortified when comparing the experience with that of pregnant, nondiabetic women:

> *My friends couldn't understand it, going for controls so early. Being pregnant without diabetes*

was nothing. Friends complaining about their simple pregnancy problems just don't understand what problems are. (Olivia)

Reconciliation/Conflict

The second constituent describes how reconciliation or conflict may characterize the woman's life situation. It deals with acceptance and counteraction of the disease and of self-understanding or lack of self-understanding. It also deals with whether the woman dares to rejoice in the present, daily life, or whether she suppresses the joy until pregnancy and birth have resulted in a healthy, newborn child.

Acceptance/Opposition. Acceptance was an adaptation to a demanding lifestyle. Olivia described, ''One had no idea about how it would be, how difficult or how easy it would be.'' Life responsibilities had to be changed. Gabriella, who was overloaded with work demands, needed a certificate from her physician in order to confirm her need for ''normal'' working conditions with the necessary breaks. For others, taking sick leave from work was the only solution.

In some way, every woman managed to adjust to the required lifestyle. This was clearly demonstrated in a decreased level of HbA_{1C}. The mean value for the group at the beginning of pregnancy was 6.8%, compared with 4.9% as the last noted value before giving birth. In the process toward acceptance of the conditions required, an unfinished critical reaction relating to diabetes could occur:

I felt depressed that there was something wrong with me. A renewed crisis occurred relating to my disease. It's still there because I haven't processed my disease. . . .It's a very unhappy situation to have a disease like this, but I did not allow it to be so when I was 12 to 13 years old. (Gabriella)

When the demanding lifestyle was accepted as a natural part of life, a feeling of harmony may have been achieved. Ultimately, this seemed to be a question of being reconciled with the diabetes disease and its demanding conditions. As Rosa described, ''You live with the disease as part of the fullness of life. . . .I have diabetes because it is part of my life. And now I am pregnant.'' Lena added, ''I must accept my disease and make the best of the situation.''

Some women never reached reconciliation with their condition. Instead, they struggled against the prescribed lifestyle. Ingrid demonstrated this perspective. It was as if she had decided that adaptation to strict routines would never give positive results. She wanted her life to be uncomplicated and not dictated by routines. She wanted to take the day as it came. Ingrid's joy of life disappeared with the strict routines: ''Blood sugar lives its own life. . ., it doesn't matter what I do—I hardly dare move. . . . I haven't tried to find a solution because I don't think there is one.''

Self-understanding/Lack of self-understanding. During pregnancy, especially at the beginning, a woman's body behaves in a different and more incomprehensible manner. Blood-glucose values may be unexplainable and may rapidly decrease or increase to uncontrollable values. Some women maintained a lack of self-understanding, including body reactions, during the whole course. Ingrid said, ''It makes no difference what one changes because the blood glucose seems to have a life of its own anyway.'' However, for most women, their body's new reactions gradually became increasingly more comprehensible:

I have learnt so much about my body that I should have known much earlier. Now I know quite a lot about differences in the response of blood sugar to different foods. In spite of having diabetes for 10 years, I have never learnt as much as now. . .with food and by increasing or decreasing the insulin doses. (Beata)

This understanding seemed to deal with self-understanding and reconciliation with the woman's whole self. Part of this was accepting that blood-glucose values can never be perfect, although that should be something for which the women strive. Nancy stated, ''I have worked on not having too much self-criticism. I know that I have done the best I can and that sometimes I cannot control everything.'' Acceptance was expressed as a process that requires time and personal maturation. Olivia, expecting her second child, demonstrated this point of view:

When I became pregnant for the first time, I didn't realize the implications. So, before my second child, I understood that it required a certain mental awareness before starting this once again. . . .It largely concerns knowing one's own limits and weaknesses.

HbA_{1C} measures glycosylated hemoglobin and is a test that represents the average blood-glucose level over the previous 4–6 weeks. High HbA_{1C} levels are associated with miscarriage and birth defects. For more information on HbA_{1C} levels, log on to http://www1.va.gov/health/diabetes/HbA1c.html

Rejoice in the present/Suppressed joy. Dreams and plans for the child's arrival were rare or absent in several of the women's descriptions. A woman's decision not to rejoice in advance was another finding understood as a strategy that made it easier to manage the birth of an unhealthy child. As Sara stated, ''One doesn't dare to be too happy in advance, not before everything is seen to be okay, when the baby is born and you can see that it is a healthy child.''

Constricted joy and an ambivalent feeling for the child seemed to be connected. Fanny never dared believe that there was a living child inside her. During the first ultrasound examination, she thought:

> *This isn't mine. They're running a film at the same time. . . .I was really afraid that something would happen or that something would go wrong, and I think I did so for that reason. . . .If I don't bother about it, then it won't hurt so much if something goes wrong.*

Maria never dared to rejoice and ''feel pregnant.'' She was not used to expressing her deep feelings for others, not even for her partner, and was filled with both great worry and great loneliness. At the end of her pregnancy, Maria declared:

> *Mentally, I have hardly known that I was pregnant. I never really entered into pregnancy. . . .It has only been blood sugar. Even though I feel that it kicks a bit and I can see it on the ultrasound monitor, I find it difficult to get it into my head that I'm pregnant.*

Some ways to enable the expression of joy were demonstrated. Olivia confirmed her growing motherhood by writing down her thoughts: ''I started to write a diary. But it only concerned my pregnancy. I never mentioned a word about diabetes or controls. At last I could just feel pregnant.'' To share feelings and thoughts with somebody reduced worry and created possibilities to rejoice:

> *We must not build up a lot around it in case something should go wrong, but should try to be happy about the situation as it is. To try to push the diabetes aside and just be pregnant. I feel an inner security. Oh! It feels great throughout my whole body.* (Nancy)

The frequent check-ups at the antenatal care unit also reduced the worry and allowed expressions of joy.

Worry expressed by relatives was transferred to the women, who handled this in different ways. Malin described, ''My mother is also worried and so I don't tell her too much. Then I must cope with her worries too.'' Similarly, Fanny noted, ''If something went wrong, they would be so unbelievably unhappy that I wouldn't get any support from them, and that's why I have chosen not to talk about it.''

Shared Control/Unwillingly Controlled

The third constituent, expressing a woman's sense of having control or of being unwillingly controlled, includes three paired elements: responsibility/surrendered responsibility; health-care staff as a supportive resource or as a controlling factor; and relatives and employers who support or increase the pressure.

Responsibility/Surrendered responsibility. The women expressed both a need to be responsible for their situation and a need to surrender the responsibility to health professionals. Part of this need was the degree of control over the disease, where checking blood glucose levels was an important resource:

> *It is me who is steering the diabetes and not the diabetes steering me. . . .It's me who is in control. It is me who has responsibility for this. . . .I don't feel like a slave. Being able to measure blood sugar is a benefit. It gives me control. What would it have been otherwise?* (Nancy)

Health-care staff as a supportive resource or as a controlling factor. To obtain the all-important goal of giving birth to a healthy child, the women needed the care of health professionals skilled in diabetes and childbearing. The health professionals' knowledge, continuous information, and coaching and sensitivity in relation to each woman and her needs formed the basis for the women's sense of control. The opposite, being controlled by health professionals, was experienced when the health professionals demanded the right to control and govern the woman:

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You have to demonstrate how you have looked after yourself and how you live. Sometimes one may feel that, no, I don't want to go there and take a lot of samples—I just want to skip the lot. If it's working well, you can be proud to show your blood sugar book. But if it's not so good, then you would prefer to have left it at home. You need to have help to realize that you are pregnant and what is happening and that one can get this thing about samples out of one's head. (Maria)

Relatives and employers who provide support or increase the pressure. Support from the child's father was an important element in the women's sense of control. Participants believed the father should be at hand and listen. As Rosa stated, ''Support is being there. When, for example, I am worried, then he says that everything is okay, it will be okay.'' However, a variation occurred in how much the women wanted the father to participate in their disease. Some of the women wanted to take care of it themselves, whereas others wanted to discuss blood-glucose levels and choice of insulin dose. The partner's lack of involvement in the disease might have been interpreted as a lack of commitment for the child. Paula described, ''Some days, he doesn't even look in my book and then I can get super-frustrated. . .because it's his child, too. If he cares and sees what my values were, then he cares for the child, too.''

Due to the risk of low blood-glucose levels and insulin coma, some of the women were totally dependent on support from others. They might even have been obliged to never sleep alone during the night. If, in such a situation, the partner chose his own interests, such as work or travelling, a sense of deep disappointment, loneliness, and even violation occurred in some of the women. As Lena noted, ''It is difficult enough at this age not being able to be alone.''

The acceptance and rejoicing of the woman's parents in the pregnancy was one way of expressing support, whereas worry contributed to increased feelings of pressure. Such was the case when Karin's father expressed worry about her being pregnant. Supportive action from an employer was often obtained through changed assignments and time schedules in order to promote good and necessary routines. Irritability over recurrent absence because of visits to the antenatal care unit increased the feeling of pressure. As Karin said, ''My boss is irritated because I'm away such a lot. It feels as if they have already counted me out.''

When the pregnant, diabetic woman mastered her challenges and life conditions, a feeling of well-being was present.

The General Structure: To Master or To Be Enslaved by Life Conditions

The essential meaning in how the women handled life conditions is summarized as ''to master or to be enslaved.'' It includes three constituents, each with a duality containing a positive and a negative dimension. This contradiction was present in all the women, although for some there was a domination of negative dimensions and for others a domination of the positive.

The women's resources included health professionals and a social environment (i.e., husband/partner, parents, other close relatives, friends, and employer). When the pregnant, diabetic woman mastered her challenges and life conditions, a feeling of well-being was present. It included feelings of meaningfulness, reconciliation, and shared control. The situation was meaningful when the pregnancy and the child were accepted and when hope and a feeling of being normal dominated. Reconciliation included acceptance of having a chronic disease requiring special routines during pregnancy. It also included self-understanding and an ability to rejoice in the present. Shared control included taking responsibility and being coached by health professionals, relatives, and employers.

When enslavement dominated life conditions, a feeling of ill-being was present, including feelings of meaninglessness, conflict, and being involuntarily controlled. Meaninglessness was expressed through ambivalence toward the pregnancy, the child, and the lifestyle, and included a feeling of hopelessness and fortified malaise. Conflict was expressed as a counteraction of the disease, a lack of self-understanding, and repressed joy. The woman felt involuntarily controlled when health professionals acted as a controlling factor and her relatives and/or employer caused increased worry or pressure through their actions.

DISCUSSION

Phenomenological lifeworld research gives a comprehensive description of phenomena. Although the reported study was performed on a small group and in one specific western culture, some lessons may be drawn upon to improve understanding of how women handle their life conditions during pregnancy when having type 1 DM. This study's

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Aaron Antonovsky introduced the construct ''sense of coherence'' (SOC) to describe a way of seeing the world, which is presumed to engender and enhance health. SOC is posited to come from making sense of the countless stressors that bombard one's life and, thus, perceiving oneself to be under one's own control or the control of those one trusts. Resources such as social support, knowledge, and shelter contribute to SOC. For more information, log on to http://jech.bmjjournals.com/cgi/content/extract/59/6/511

findings show that life is contradictory for the women, filled with multidimensional and opposite feelings, and orientated toward either mastery or enslavement. Interpreting this in relation to Aaron Antonovsky's (1987) theory of salutogenesis, in which human life is described as a continuum orientation toward health or ill health, mastery is equivalent to health and enslavement to ill health.

Comparing the findings with research among nonpregnant people with diabetes reveals interesting similarities. Living with diabetes has been described as a transformational experience (Paterson, Thorne, Crawford, & Tarko, 1999). Adapting to and managing diabetes has been described as achieving and maintaining balance in various aspects, such as between the demands of diabetes management and the need to live a healthy, ''normal'' life. Learning to achieve this balance involves assuming control by knowing one's body, learning how to manage diabetes, and fostering supportive, collaborative relationships (Paterson, Thorne, & Devis, 1998). In the present findings, the need to live a ''normal life,'' like other pregnant women, was obvious. The women fluctuated and thus, ''balanced'' between even greater extremities, as expressed in the metaphor ''to master or to be enslaved.''

One constituent of the phenomenon is meaningfulness/meaninglessness. Meaningfulness is essential for health and well-being, whereas meaninglessness is associated with ill health. Antonovsky (1987) stated that meaningfulness is the crucial and motivational salutogenetic component placing one's world and its resources at one's disposal.

The women with type 1 DM had difficulty daring to hope. Thoughts and plans for the future and the child's arrival were rare or absent. This behavior seemed to be a kind of defense against the threat of sorrow and the uncertainty of whether they could even have a child, let alone a healthy child. Dreams and plans are important components for mothers-to-be in their transition to motherhood (Stern & Bruschweiler-Stern, 1998). Life conditions characterized by uncertainty are shown to be positively correlated with stress and negatively correlated with planning and hoping (Chen, S., & Chen, C., 2000). According to the Danish philosopher K. E. Logstrup (1968/1994), hope is one of four essential and supreme motivational powers of life nurtured in human relations (the other powers being trust, open conversation, and mercy). Interpreting Logstrup in the context of caring for women with DM type 1, professional caregivers could nurture the pregnant woman's inherent hope when, in a trustful relationship, they are open to her feelings. This, together with affirmation of the woman as a ''normal'' mother-to-be, could perhaps pave the way for healthy dreams and plans for the coming child.

Another bipolar constituent is reconciliation and conflict. Living with type 1 DM has been described by nonpregnant, diabetic women as a process of integration (Hernandez, 1996). Living with a chronic illness has been described as a process of reconstituting identity where the illness can be discounted, kept separate from the rest of the biography, well integrated, or located somewhere in between (Corbin & Strauss, 1988). According to the present findings, the process of integration and reconstitution of self seems to accelerate during pregnancy. Living with a chronic disease is often connected with chronic sorrow, including an experience of significant loss (Eakes, Burke, & Hainsworth, 1998). Having a chronic disease, such as diabetes, during pregnancy seems to trigger a woman's experience of sorrow and loss and of not being like other ''normal'' pregnant women. According to Eriksson (1994), reconciliation with one's circumstances of life is part of health. In the present findings, reconciliation with having diabetes is connected with the ability for self-understanding. It is also connected with the understanding that, although obtaining perfect blood-glucose levels is impossible, one has the same chance as women without diabetes of having a healthy child. Reconciliation with one's life conditions appears to be of vital importance for a woman's mastering of life conditions and challenges during pregnancy. However, as demonstrated by the present findings, it is necessary to stress that there are always women who will never become reconciled with their diabetes and, thus, never accept the strict lifestyle demanded by a pregnancy in connection with type 1 DM.

The third bipolar constituent is shared control/unwillingly controlled. This study's findings make it clear that life for pregnant women with DM type 1, as for all humans, is based on relationships (Logstrup, 1968/1994). Life is intersubjective (Merleau-Ponty, 1945/1995) and, thus, social support is of great importance. Shared control includes a woman's need and desire to take responsibility

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and to be coached or supported by health professionals, relatives, and employers. Women are involuntarily controlled when health professionals act as a controlling factor, relatives deny support or increase worry, and an employer increases pressure through various actions. Gallant (2003) found that a modest, positive relationship exists between social support and chronic-illness management, especially for diabetes. This relationship was also apparent in the present qualitative study. It is obvious that women with type 1 DM are in an extremely exposed situation during pregnancy and need a lot of support. Responsibility for the child, who acts as a demanding subject through the measured blood-glucose levels (Berg & Honkasalo, 2000), becomes a yoke and, thus, contributes to feelings of enslavement. The finding that all of the women in this study managed to decrease their level of HbA_{1C} points to the enormous power embedded in motherhood.

CONCLUSION AND IMPLICATIONS FOR PERINATAL EDUCATION

Although the study was performed in Sweden and health care varies globally, the findings may be useful even in other contexts and can offer valuable assistance for developing evidence-based care and guidance in the field of childbirth education. Pregnant women with type 1 DM were found to be extremely vulnerable, and their transition from woman to mother was largely influenced by living conditions demanded by their disease. Behaviors of health professionals—such as nurses, midwives, and physicians—and of relatives, friends, and employers influenced the women. Therefore, healthcare professionals and perinatal educators may wish to reflect over their own behavior and strive to act in a manner that promotes the woman's mastery rather than enslavement. The overall goal should be to support the pregnant woman's desire to live a life best suited for both the child's health and her own well-being. This includes an open, caring relationship where the individual woman is understood and supported, empowered to strive for normoglycemia, and encouraged to be reconciled with her disease. It also includes informing her partner and other significant persons about her need for support.

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THOUGHTS ON CHANGE

The art of progress is to preserve order amid change and to preserve change amid order.

– Alfred North Whitehead

In describing today's accelerating changes, the media fire blips of unrelated information at us. Experts bury us under mountains of narrowly specialized monographs. Popular forecasters present lists of unrelated trends, without any model to show us their interconnections or the forces likely to reverse them. As a result, change itself comes to be seen as anarchic, even lunatic.

– Alvin Toffler

They say that time changes things, but you actually have to change them yourself.

– Andy Warhol