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A salutary childbirth education program: Health promoting by design. A discussion paper

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ABSTRACT

Pregnancy is an ideal time to focus on health promotion. Many women and their partners attend childbirth education classes to prepare themselves for pregnancy, birth and parenting. However, rather than promoting health, these classes have been criticized for preparing women and their partners for a medicalized birth, which has become the norm in many well-resourced countries. This paper describes the development of a childbirth education program using the theory of salutogenesis. While much has been written about the theory, few have attempted to operationalize the theory for health service delivery, particularly in the maternity care context. The aim of the program was to move individuals participating in the program towards greater health on the health-ease/dis-ease continuum by increasing their sense of coherence, focusing on generalized resistance resources and strengthening the key components comprehensibility, manageability and meaningfulness. This paper describes the development of the program.

Introduction

Pregnancy as an important life transition is an ideal time to focus on health promotion. Authors have referred to this time as a "teachable moment" [1] which is a naturally occurring health event that motivates individuals to focus on their health. A focus on health promotion in pregnancy can impact not only the current pregnancy but can create a foundation for improved health as they move into the future as a family. Many women and their partners in Australia and other well-resourced countries attend structured childbirth education classes to prepare themselves for pregnancy, birth and parenting and this presents an ideal opportunity to use this "teachable moment". However, rather than promoting health, these classes have been criticized for preparing women and their partners for a medicalized birth [2] which has become the norm in many countries. This reflects the general orientation of contemporary maternity care which is steeped in the biomedical model of health care [underpinned by pathogenesis) with a focus on risk rather than health [3]. The theory of salutogenesis [4] provides a useful alternative to the biomedical approach though few have operationalized the theory in this clinical context. This paper fills this void by detailing the design of an innovative childbirth education curriculum underpinned by the theory of salutogenesis. The next important step in this program of work is to evaluate the program with attention to its impact on women's sense of coherence and this will be the focus of forthcoming publications.

Background

Childbirth education

Women have always been engaged informally in preparing themselves for childbirth, largely through their social connections with other women. Formal childbirth education programs are a more recent phenomenon. These gained in popularity in the 1960s with a focus on natural birth methods such as that advocated by Lamaze for example [5]. Since that time childbirth has become increasingly medicalized and the focus of childbirth education has shifted to prepare women for the medicalized childbirth she is more likely to experience [6,7]. Within the context of a highly medicalized maternity care culture Lothian [5] asserts that: "The childbirth educator's challenge is to change women's thinking and, in doing so, ultimately change birth". (p. 47). Few studies, however, have shown that childbirth education has been effective in promoting normal birth [8–12].

Research studies have examined the effect of childbirth education on a number of outcomes including clinical [8–11,13] and psychosocial [9,10,12–14]. Randomized controlled trials have had varying results. A

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Swedish study (n = 1087) comparing natural childbirth with standard childbirth education, found no effect on the use of epidural analgesia during labour, birth experience or parental stress in early parenthood [10]. A randomized controlled trial of the "Ready for Child" program in Denmark [13,15–17] (n = 1193) compared outcomes for women undergoing the intervention program with those having no childbirth education. Women in the intervention group, more often attended the maternity unit in active labour, used less epidural analgesia and experienced decreased levels of worry. The intervention group also reported a more positive birthing experience in long term follow up. While women in the intervention group had higher level of confidence in breast feeding, at one year after birth there were no differences found in women's reports of duration of full or any breastfeeding. There were also no differences between groups in self-efficacy score or breastfeeding problems. A small study in Australia (n = 176) incorporating complementary therapies into the experimental childbirth education program, demonstrated reduced rates of epidural use, augmentation of labour, caesarean section, perineal trauma, neonatal resuscitation and a shorter length of second stage of labour [11].

Observational studies have had similarly variable results. A prospective observational study in Spain (n = 616) found that women who had attended childbirth education had lower levels of anxiety than other Spanish women but no differences in any other outcomes [9]. A large retrospective study in the USA (n = 14,630) found that women who had attended childbirth education and, or had a birth plan had increased odds of vaginal birth compared to those who didn't [8]. Studies into childbirth education are complicated by lack of standardization in curricula and observational studies by selection bias. Larger studies [8,10,15] suggest that the comparator is also important with effects found when the intervention is compared to a control group comprising no childbirth education program.

Salutogenesis

Much of healthcare is focused on pathology; the science of the causes and effects of diseases. In maternity care most of the time spent delivering care focuses on disease. In a typical antenatal clinic appointment for example a medical history establishes the risk profile for a variety of diseases, blood pressure is checked for hypertension, fundal height for growth retardation, ultrasound for fetal abnormalities, urinalysis for signs of infection, diabetes or pre-eclampsia, and blood work to detect anaemia, diabetes, or antibodies. Dietary and lifestyle advice focuses on avoidance of disease such as fetal alcohol syndrome, toxoplasmosis, and listeriosis. This approach asks, "what creates illness" while a salutogenic approach asks, "what creates health"? We suggest that a focus on the latter, is better placed to move individuals towards health (i.e. promote health) over their lifespan than a focus on disease.

The theory of salutogenesis was developed by Aaron Antonovsky, an Israeli sociologist who studied the way people respond to stress. In his studies, some participants had lived through extremely stressful life experiences including the Holocaust and he was fascinated by the resilience some people demonstrated. People who can manage stress in a positive way have a high sense of coherence. Antonovsky describes this as an orientation to life that expresses the feeling of being confident that the stressors in life are predictable and explicable (comprehensibility), they have the resources available to meet the demands of these stressors (manageability) and that the challenge is worthy of investment (meaningfulness) [4]. Antonovsky developed a questionnaire to measure sense of coherence encompassing the three elements; comprehensibility, manageability and meaningfulness [18]. Another important concept in the theory of salutogenesis is that of resistance resources (RRs). These prerequisites to the development of sense of coherence can be intrinsic (e.g. personality traits, knowledge), extrinsic (e.g. housing, money, environmental conditions), generalized or specific [19]. In the development of sense of coherence, it is important that individuals not only have and can identify RRs, but also that they have the capacity to use them. Antonovsky's theory includes the belief that health is situated on a continuum from health-ease to dis-ease. Stressors (such as an illness or a significant life event) can lead to tension and depending on how that is managed, leads to breakdown and pathology or a movement towards health.

Salutogenesis and maternity

The midwifery orientation to childbearing implicitly supports a salutogenic approach with a focus on wellness and health promotion [20]. A small European study drawing on interviews with twenty-seven midwives in Switzerland, Austria and Germany provides some support to this [21]. This study found that the practice of these midwives was implicitly underpinned by components of sense of coherence; comprehensibility, manageability and meaningfulness. Few studies in the maternity context, explicitly draw on salutogenic theory [22,23]. Authors of a paper reporting outcomes of a childbirth education program (Ready for Child) in Denmark [13] state, "The intervention sought to create a sense of coherence by taking its starting point in the experiences of the becoming parents….." (p. 785). They go on to describe the way participants were asked to bring a doll to the sessions describing this activity as an icebreaker, a vehicle to connect participants with the postpartum time and as a useful support for learning about breastfeeding. As a salutogenic intervention we can presume that these activities relate to sense of coherence and its components, though this is not made explicit in the article.

Criticising research in the maternity context for its focus on pathology, Smith, Daly [24] conducted a systematic review to identify salutogenically focused outcomes in intrapartum research. Confirming the orientation towards pathology they identified 49 non-salutogenically-focused outcome measures (for example measures of morbidity and mortality) and sixteen salutogenically focused outcomes (for example measures of wellbeing and physiology).

Two scoping reviews have recently sought to identify research focusing on sense of coherence [22] and salutogenic theory [23] in the maternity context. Ferguson et al. [19] identified 15 studies using sense of coherence, finding that women with strong sense of coherence were more likely to engage in healthy behaviours (less likely to smoke for example), seek useful support and have greater emotional health with less depression, anxiety and stress. Women with strong sense of coherence were also more likely to experience uncomplicated birth, birth at home and identify normal birth as their preferred mode of birth. Following on from this scoping review our research into sense of coherence and childbirth outcomes [25] demonstrated that women with a strong sense of coherence had half the rate of caesarean section compared to women with a weak sense of coherence. What is more, women with a strong sense of coherence were more satisfied with their labour and birth, regardless of the mode of birth. This was the catalyst for our development of a childbirth education program explicitly informed by salutogenic theory with the intention of increasing women's sense of coherence.

In their review of studies drawing on salutogenic theory, Perez-Botella, Downe [23] identified eight studies that used salutogenic theory in maternity care research. They criticized this body of work for a continuing focus on risk and pathology, indicating a need for greater integration of the theory in the research context. None of the studies included in this review or elsewhere that we have been able to identify, have described how they have operationalized salutogenic theory as part of a health care intervention in the maternity setting.

Salutogenesis has been operationalized in several other health care contexts including cancer care, youth counselling, prevention of burnout in nurses [26], mental health and aged care. In the mental health context Langeland, Wahl [27] used the theory to develop a therapy which aimed to increase participant's sense of coherence and coping. In a small randomized controlled trial (n = 96) the intervention was found to be successful in significantly increasing sense of coherence

Table 1
Salutogenic strategies from the childbirth literature.

Reference	Methods	Salutogenic factors identified	Implications for salutary childbirth education
Meier Magistretti et al. [21]	Twenty-seven interviews with midwives in three European countries to examine how they frame a health orientation in their midwifery practice.	"Sense of comprehensibility as a dynamic and interactive cycle of comprehensive understanding and explanations. Sense of meaningfulness as the trust in either the innate power of birth or as the will to realise a targeted aim. Sense of manageability as the ability to be with the woman while managing contrasts and conflicts of current paradigms in professional contexts".	• Knowledge acquisition as a process; engage in discussion, debate and information sharing • Build trust in ability of women to give birth
Aune et al. [29]	Interviews with 12 first time Norwegian mothers about internal factors and those in environment that are important for a normal birth and positive birth experience.	A safe environment and good social network contributed to sense of trust and emotional strength. A positive attitude toward birth and use of acquired coping strategies. A natural vision for childbirth. Stability in everyday life with predictability and personal control. Information during pregnancy such as childbirth education and talking to others especially those close to them. Close and trusting relationships within their network, especially with family and partner. Positive attitude to childbirth, faith in their body and trust in their strength. A focus on the baby beyond labour and birth. A belief that giving birth has meaning. Developing coping strategies and drawing on previous experiences. Acknowledging innate qualities that contribute to positive experiences.	• Identification and development of strong social networks • Promote a positive attitude toward birth • Identification of acquired coping strategies that may be translated to childbirth challenges. • Development of strategies to promote personal control • Facilitate access to good quality information • Development of close and trusting relationships • Develop trust in the woman's body and abilities • Focus on the period beyond birth • Draw on personal experiences to identify and develop coping strategies • Identify intrinsic resources
Randen et al. [30]	Interviews with six women in Norway to explore first time pregnant women's experiences of pregnancy and expectations for birth within salutogenic framework	Previous history, experiences and family experiences, shaped their understanding of birth. Social networks and shared experiences with other women helped them become informed and gain peer support. Childbirth education also plays a part in access to information. Problem solving about the birth and focusing on the baby was helpful.	• Acknowledge the factors shaping understanding of birth • Facilitate development of social and peer support networks • Develop skills in problem solving • Focus on the baby not the birth
Ahlborg et al. [31]	Longitudinal study with first time parents using questionnaires when baby 6 months, 4 years and 8 years of age	Social support can be of significance for parents of young children to be able to experience health.	• Identify and develop social supports
Kronborg et al. [13]	Randomised control trial with 1193 nulliparous women in Denmark comparing structured antenatal education training with usual practice	May be useful to start with focus on becoming parents. Hands-on experience with doll connected participants with the postnatal time and provided an "instrumental" guide. Focus on information sharing especially in relation to importance of breastfeeding. Addressed potential difficulties.	• Focus on postnatal time • Information sharing may help establish meaningfulness • Usefulness of addressing potential challenges
Thomson and Dykes [32]	In-depth interviews with 15 women in UK to explore their experiences, opinions and perceptions of infant feeding interpreting the data using Antonovsky's theory of Sense of Coherence	Comprehensibility improved with predictability of information and provision of support and guidance. Need for accurate and consistent information from health care providers Birth experience may influence woman's sense of ability to manage breastfeeding. Health professionals must be cognisant of effects of difficult birth and prepare women for potential problems impacting initiation of breast feeding. External resources (family, friends and social networks) are important and helpful and should be included in childbirth education and more broadly in marketing campaigns. Meaningfulness is important as this provides drive and motivation towards breastfeeding.	• Consistency and accuracy in information from health care providers • Provide support and guidance in acquisition of information and processes of decision making • Explore impact of unplanned events • Focus on resources available to participants in short and longer term • Establish what is meaningful to participants
Abrahamsson and Ejlertsson [33]	Questionnaire with 356 women in pregnancy and short follow up interview with 337 women after baby born in Sweden to assess theoretical relevance of using a salutogenic, instead of a pathogenic, perspective to prevent smoking during pregnancy	Supporting women to increase their knowledge of smoking for example, can increase comprehensibility. Manageability can be influenced by helping women find resources to manage internal and external challenges. Pregnancy is a time when meaningfulness may be high. May be useful to empower women so that they feel able to make decisions and take responsibility for own health behaviours.	• Support participants to acquire knowledge • Support participants to identify resources to help manage their own challenges • Maximise the health promotion potential of this important time • Focus on building confidence and capacity of participants

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Table 1 (*continued*)

Reference	Methods	Salutogenic factors identified	Implications for salutary childbirth education
			• Promote sense of personal responsibility

from baseline especially in the manageability component and in improving coping [27]. In the aged care sector Tan, Chan [28] used salutogenic theory to develop a 12-week Resource Enhancement and Activation Program for older community members in Singapore. In a feasibility study the intervention showed improvement in sense of coherence and quality of life measures. While there is a dearth of literature providing guidance for the development of salutogenic interventions in the maternity care context, these studies show that salutogenic theory can be operationalized as a healthcare intervention and that they have promise for improving the sense of coherence of participants.

Operationalizing salutogenesis for childbirth education

This Salutary Childbirth Education program was a joint initiative of midwives in academia and clinical practice. The program was to replace an existing childbirth education program which needed renewal. Drawing on their experience in childbirth education and acknowledging the limitations of what was possible within a publicly funded healthcare system, the authors collaboratively worked with the theory of salutogenesis and contemporary literature, to design the program.

The principal aim of the program was to increase the sense of coherence of participants and central to this aim, the assumption that sense of coherence in an individual is dynamic rather than static. Operationalizing theory is often understood in terms of quantification (creation or measurement of constructs relating to the theory) but can be understood more broadly, as a process of transforming theory into something of practical value (Comin 2001). We use the term in the sense of this latter explanation. Antonovsky (1996, p. 16) himself made a useful contribution here suggesting that the central question at the core of health promotion programs should be;

> What can be done in this—factory, geographic community, age or ethnic or gender group, chronic or even acute hospital population,… to strengthen the sense of comprehensibility, manageability and meaningfulness of the persons who constitute it?

This was the question that guided the design of the Salutary Childbirth Education program.

The Salutary Childbirth Education program was designed to build the capacity of women/couples for a positive pregnancy, birth and early parenting experience. The program aims to:

- Encourage women/couples to make informed decisions relating to pregnancy, birth and early parenting – including breastfeeding
- Promote practices and choices known to impact positively on health
- Assist women/couples to identify their own needs and develop resources to support them in pregnancy, birth and early parenting
- Move women/couples further towards the health end of the dis-ease – health-ease continuum
- Increase the satisfaction and confidence of women/couples for pregnancy, birth and early parenting – including breastfeeding.

The program aims to achieve this by increasing an individual's sense of coherence by focusing on generalized resistance resources and strengthening the key components: comprehensibility, manageability and meaningfulness.

The authors (DD, SF, JN, CF) with a combined total of more than one hundred years' experience in midwifery, and substantial experience in education at the tertiary level (DD, SF), childbirth education (JN, CF) and in salutogenic theory (DD, SF) were well equipped to design the program. This entailed a meeting whereby the general principles of the program were agreed. These included the incorporation of adult learning principles, an evidence based approach, a salutogenic orientation and the need for cost neutrality. These principles then guided the development of the curriculum. Further we conducted literature reviews searching for evidence of successful strategies used in childbirth education and salutogenic strategies used in the maternity care context [13,21,29–33]. Table 1 shows the literature that proved useful in this process. A full day workshop followed (with all authors) and at its conclusion, the program aims and objectives, structure and the main areas of focus for each session were agreed. This included incorporating strategies that were gleaned from the literature i.e. mindfulness exercises, acupressure and massage techniques [11]. Over the next months the authors worked with a consultant who was an experienced midwife and expert in designing education programs for women and their partners based on facilitation and adult learning principles, to develop the specific learning strategies for each session. Each strategy aimed to strengthen at least one of the components of sense of coherence or generalised resistance resources. In an iterative process with input from the authors and consultant, a detailed program was developed.

Table 2 shows the salutogenic principles and related objectives for participants.

The program consists of four, two and a half -hour, face to face group sessions with a general focus for each session following the

Table 2
Salutogenic principles and program objectives.

Salutogenic principles		Program objectives
Salutogenic orientation		• Focus on wellness and factors that enhance participant's health
Sense of coherence	Manageability	Participants; • have enhanced problem solving skills • feel that they have the capacity to meet the challenges of pregnancy, birth and early parenting
	Comprehensibility	• understand the physiology of pregnancy, birth and the newborn • make informed choices that are appropriate for them and their baby
	Meaningfulness	• clarify their own values, motivations, needs and desires
Generalized resistance resources		• recognize their own knowledge and skills and those within the group • identify the resources available to them and develop additional resources to support them in pregnancy, birth and early parenting • realize potential resources • form social networks that continue beyond participation in the program

chronology of pregnancy to parenting. The curriculum focuses on process rather than content and there are no PowerPoint presentations or other didactic style sessions but facilitated activities generating discussion. Midwives leading each session are facilitators, educated in the principles of salutogenesis, rather than teachers and those attending are positioned as active participants engaged in exploration and knowledge generation.

The following paragraphs describe and provide examples of the ways in which the program addresses the key elements of salutogenic orientation, sense of coherence and resistance resources.

Salutogenic orientation

Mittelmark MB [34] describes a salutogenic orientation as an; "… *orientation* focusing attention on the study of the origins of health and assets for health, contra the origins of disease and risk factors". In the context of childbirth education this means shifting focus from complications or diseases of pregnancy to health and factors that contribute to health. A salutogenic orientation is reflected in the four sessions which were carefully named: "growing babies, growing families", "a labour of love", "ways of birth" and "healthy families". Furthermore Pelikan [35] emphasizes that adaptation to potential stressors is a universal experience and that we are all located somewhere along the health/dis-ease continuum thus dichotomising people into healthy and ill is unhelpful.

The salutary childbirth education program is aimed at all pregnant women/couples and frames pregnancy and birth as normal physiological processes. Pregnancy discomforts (for example nausea) or complications (for example gestational diabetes) are not ignored, though the salutogenic focus means that emphasis is placed on the body's physiological adjustment to pregnancy rather than the disorder. For example, facilitators take the opportunity to highlight the important role of hormones of pregnancy when nausea is raised by a group or the metabolic changes that occur in pregnancy and how this impacts insulin resistance, in any discussion of diabetes. In labour rather than provide a menu of pain relief options, the focus is on how we can best support the physiological processes of a labouring body. At birth rather than focus on resuscitation of the newborn, the focus is on supporting the newborn's transition to life outside the womb. In all topics, facilitators help focus discussion on things individuals can do to promote health regardless of where they might be situated on the health/dis-ease continuum. While a non-judgmental attitude is employed the program unashamedly promotes practices and choices known to positively impact health.

Sense of coherence

As described, sense of coherence incorporates several elements including comprehensibility, manageability and meaningfulness. Antonovsky [4] believed that sense of coherence as a whole, influenced movement on the health/dis-ease continuum (rather than components). However, when considering ways of operationalizing the theory with the aim to move individuals further towards the health end of the continuum, it was important for us to consider all elements individually.

Manageability

Manageability is one dimension of sense of coherence. It is understood as the behavioural dimension and reflects the degree to which an individual feels that they have the resources enabling them to meet the demands of their situation [18]. The salutary childbirth education program is not focused on content and does not presume to provide women/couples with the resources necessary for meeting the demands of childbirth and parenting. The program uses active learning strategies which aim to promote personal responsibility and independence; assisting women/couples to identify the resources they have for managing pregnancy and childbirth and facilitating their identification of new resources. An example of an activity that aims to increase sense of coherence focusing on the manageability component is "research". This is an activity for women/couples to undertake between sessions. The focus of the "research" relates to a topic arising from the session for example; community resources to support early parenting and breastfeeding. Results of the "research" activity are shared at the beginning of each session so that participants develop a store of useful resources (e.g. local community support groups) and an enhanced understanding of their own capacity to identify and access resources. Another activity focused on manageability is the presentation of a case study (in a woman's own words), of her positive experience following emergency caesarean section. This activity acknowledges that sometimes labour and birth do not go as planned but aims to assist participants to identify the strategies that may assist them to have a positive experience (ways to help them *manage*). In the case study it included the woman having immediate skin to skin contact with her baby.

Comprehensibility

Comprehensibility is the cognitive component of sense of coherence, relating to the extent to which individuals perceive stimuli as understandable, ordered and predictable rather than chaotic [18]. It is easy for pregnant women/couples to be overwhelmed with increasing amounts of information and misinformation relating to childbirth available in various media. The aim of the salutary childbirth education program is to assist participants to navigate this by improving their ability to identify good quality information and facilitating the development of their knowledge relating to pregnancy, birth, parenting and maternity care so that events or phenomena might be understood and sometimes anticipated. In the salutary childbirth education program an example of an activity that focuses on the comprehensibility component of sense of coherence is the activity "What's happening with my body, mind and emotions"? In this activity empty cups are labelled with a range of mind, body and emotional changes relating to pregnancy (both positive and negative). Participants are provided with a full cup (of buttons, beans for example) and are asked to apportion these into the empty cups as desired. The relative fullness of each cup then represents the degree to which this pregnancy change (e.g. labile emotions) is pertinent to the group. The facilitated discussion that follows draws on the group's knowledge and experiences to understand the changes brought about by pregnancy and strategies for managing these. Facilitators use this opportunity to positively reframe these pregnancy changes by explaining the physiology producing the change and highlighting how this is often useful and important to pregnancy. Knowledge of the role of progesterone in pregnancy for example assists participants to understand its important role in maintaining a healthy pregnancy and how it might bring about some unwanted effects (varicose veins for example). Understanding the underlying physiology may help participants make sense of (find order in) the physical, emotional and psychological changes brought about by pregnancy.

Meaningfulness

Meaningfulness is the motivational dimension of sense of coherence with motivation coming from the emotional meaning attached to aspects of life and its challenges [36]. In childbearing this may be related to ways in which women/ couples are engaged, committed and connected to their experience. Meanings attached to childbirth and parenting are varied and individual, and these may be underpinned by different personal values. Some women/couples may experience childbirth as spiritual while others may exult in the physical challenge, finding meaning in natural childbirth. The salutary childbirth education program aims to assist participants to clarify their own values, motivations, needs and desires relating to pregnancy, birth and parenting. It is particularly important for couples to do this work so that areas of alignment or conflict can be addressed. An example of an activity in the salutary childbirth education program that focuses on this dimension of sense of coherence is the activity "take a stand". In this activity the

room is divided in two with one side of the room labelled "agree' and the other "disagree". The facilitator then reads a series of statements and participants are asked to move to the appropriate side of the room. Statements might include; "pain medication in labour should be a last resort", "parenting is an instinctive skill", and "babies should sleep in their own room". Facilitated discussion helps participants to identify the meaning attached to childbirth and parenting which is shaping their decision making and motivations.

Resistance resources

Resistance resources are another important element of the theory of salutogenesis and are key to the development of a strong sense of coherence. These may be intrinsic (e.g. genetic, psychological disposition), extrinsic (e.g. money, social support), generalized or specialized. Generalized resistance resources are those available in a wide range of circumstances while specialized resistance resources may be used in certain circumstances [18]. We use the umbrella term "resistance resources" here to refer to all these variants. Antonovsky identified that generalized resistance resources were characteristics of a person, group or community [4] though we focus on those of the person in our salutary childbirth education program. Resistance resources and sense of coherence have a reciprocal relationship in that an individual's resistance resources contribute to their sense of coherence and their sense of coherence may contribute to their use of resistance resources for managing life's stressors [37]. An example of an activity in our childbirth education program that aims to increase sense of coherence focusing on the resistance resources component is the "resource tree". In this activity women/couples are asked to identify and illustrate (using the metaphor of the tree) the intrinsic (e.g. adaptability) and extrinsic (e.g. family support) resources available to them for childbearing and to consider where their resources could be enhanced (e.g. a supportive peer group). Participants share their ideas with the group which serves to further enhance their appreciation of the resources needed/available to them. In this way the expertise and knowledge of the group is emphasized demonstrating their capacity for knowing, which is an important shift away from the expert as a "knower" in the didactic classroom. Activities throughout the program support the participant to identify, anticipate and access resources to support their journey through childbirth to parenthood.

Discussion

Scholars and practitioners in midwifery have long since identified the potential of salutogenesis for midwifery [38] yet to date, few have operationalized the theory in the development of a therapeutic intervention in this context. There is good evidence associating strong sense of coherence with improved health and health behaviours [22] including our own longitudinal study [39] which found that women with a strong sense of coherence had half the rate of caesarean section compared to women with a weak sense of coherence. This body of evidence provides a strong basis for the development of an intervention which aims to strengthen a woman's sense of coherence in the antenatal time. Literature is lacking in regards to detailed information about the operationalization of this theory and further work also needs to include evaluation that includes salutogenic outcomes.

One of the few studies to operationalize salutogenesis is [40] in the context of mental health. They developed a "talk therapy" intervention program with the aim of increasing the sense of coherence of participants. The similarities of this program and our salutary childbirth education program include the aim to increase participants consciousness of and confidence in identifying and accessing a range of resources (internal and external) to support wellbeing, attention to what provides meaning to the participant, "homework" which extends the group work and positions the individual as active rather than passive and acknowledgement that participants are expert in their own lives and thus professionals are positioned as "dialogue partners" or in our case "facilitators" rather than experts. This program demonstrated effectiveness in improving the sense of coherence of participants [27].

While Antonovsky [4] believed sense of coherence to be relatively stable over adulthood, researchers have since found that it is more malleable. For example, in large Scandinavia studies sense of coherence was found to increase with age [18], though studies including long-term follow up are few. Our longitudinal study into sense of coherence in a pregnant population found that sense of coherence was increased from the antenatal to postnatal time if women were satisfied with their childbirth experience [39]. The follow up period in this study was short at eight weeks and we do not know whether improvement in sense of coherence was maintained in this cohort over the longer term. A forthcoming evaluation of the salutary childbirth education program will help us understand the impact of the program on sense of coherence.

Pelikan [35] points to the difficultly of integrating salutogenesis into healthcare as contemporary healthcare is steeped in a pathogenic paradigm. Nowhere is this truer than maternity care which increasingly focuses attention on dis-ease and risk. Change, Pelikan asserts, can only partly be achieved by "an add-on of new routines" and also "partly has to be done… by re-orienting core processes of health care". This salutary childbirth education program represents an "add-on" in Pelikan's sense, and we should be cautious about the potential impact of this program given that the remainder of women's experiences in maternity care may come from a pathogenic perspective. Nonetheless, we are optimistic that as midwives gain experience in the Salutogenic approach it will begin to impact practices beyond childbirth education.

Conclusion

Pregnancy is an important life transition and childbirth education provides an ideal opportunity to focus on health promotion. The theory of salutogenesis provides a useful framework for this undertaking. We have designed a childbirth education program using salutogenic principles with the aim of moving individuals participating in the program towards greater health on the health-ease/dis-ease continuum. This demonstrates that salutogenic theory can be operationalized in the context of the design of a childbirth education program. The next important step in this project is to evaluate the program's efficacy.

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Appendix A. Supplementary material

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