

ORIGINAL ARTICLE

Mothers' perceptions of factors affecting their abilities to care for infants with allergy

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Aim. To identify mothers' perceptions of the supporting or straining factors involved in motherhood generally and in relation to child's atopic dermatitis and food allergy at the age of 1–2 years.

Background. The main person who cares for a child in the early years of life is usually the mother. Information on mothers' perceptions of factors affecting their resources to care for their healthy or allergic children is incomplete and needs to be identified.

Design. A descriptive qualitative study with semi-structured interviews.

Method. Altogether 32 interviews with mothers having a one-year-old healthy or allergic child and repeat interviews with mothers of allergic children aged two years were conducted. Deductive content analysis was applied, based on the concept of empowerment and an empowerment model for family nursing.

Results. A child's food allergy at the age of one year caused considerable strain for the mother, chiefly because the adoption of new foods into the child's diet was delayed, and waking at night because of itching related to atopic dermatitis. This delay was still causing the mother additional strain, when the child was two years old. Specific allergy-related strengthening factors were the mother's own knowledge, hope for an improvement, social support and work.

Conclusions. This qualitative study succeeded in identifying strain situations for mothers with one- and two-year-old allergic children. Such mothers should be recognised and provided with individual support by nurses and healthcare professionals to focus on the supporting factors.

Relevance to clinical practice. Mothers of allergic children should be recognised. An inquiry or questionnaire based on personal abilities and the family's internal and external capabilities may contribute to identifying these mothers. Mothers should be provided with individual encouragement and support from mother and child health clinics by focusing on factors felt to be strengthening ones.

Key words: allergy, content analysis, empowerment, healthcare professionals, mother, qualitative study

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Introduction

The main person who cares for a child in the early years of life is usually the mother. Caring for a child may be a

demanding task, because mothers need to adjust their functioning to the child's continuous physical and social development. This is particularly the case when an additional burden is created by a chronic disease affecting the child, such

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as food allergy and/or atopic dermatitis. The cumulative incidence of atopic dermatitis in birth cohort studies has been 13.4% at the age of one year (Illi *et al.* 2004) and ranged from 16% (Smidesang *et al.* 2008) to 21.5% (Illi *et al.* 2004) at the age of two years. In high-risk children, the incidence rises to 31 and 41%, respectively, with a peak prevalence at two years in boys and two and a half years in girls (Halkjær *et al.* 2006). Skin and gastrointestinal symptoms are also the manifestations of food allergy, with an incidence of 5.3% up to two years of age (Venter *et al.* 2008).

Atopic dermatitis may induce restlessness, irritability, sleeping disturbances and itching in a child (Arvola *et al.* 2000). The most important problem faced by parents in cases of severe atopic dermatitis with food allergy is adherence to the strict diet (Arvola *et al.* 2000). It causes mothers' increased burden of normal child care and additional housework (Elliott & Luker 1997). Mothers tend to describe themselves as more anxious and overprotective and to characterise their infants as difficult more frequently than do the mothers of healthy children (Pauli-Pott *et al.* 1999). Atopic dermatitis in a child has been shown to induce high levels of stress in mothers (Daud *et al.* 1993) compared with those looking after healthy children or children with insulin-dependent diabetes (Faught *et al.* 2007). These studies have approached allergies from a perspective, where the impact of the disease on the mothers or both the parents in causing extra work and a mental burden is described. However, mothers may experience the strain caused by child's allergy differently despite the similarity of symptoms. So, more detailed descriptions are needed to interpret how mothers experience and evaluate their own resources as mothers, and how these factors affecting their resources depend on child's age and disease.

Background

Parents' resourcefulness can be seen to derive from the balance between supporting and straining factors (Pelkonen & Hakulinen 2002), where a support can be defined as something providing immaterial assistance to a person, and strain as a difficulty that causes worry or emotional tension (Visual Thesaurus 2009). The empowerment model for family nursing is based on previous theory about the concept of empowerment and study of resources (Pelkonen & Hakulinen 2002). In this approach, a parent can empower him or herself or be empowered by something outside the family. Empowerment is seen as both an individual, personal process and a social process that is not transferable to another person (Siitonen 1999). In the empowerment model for family nursing, parent's strengths are divided into those

arising from personal abilities and the family's internal and external capabilities (Pelkonen & Hakulinen 2002). The personal abilities implied in the model include the mother's physical and psychological condition, level of education, sense of competence (Tarkka 2003), knowledge and the ability to identify unused capacities (Pelkonen & Hakulinen 2002). The internal family capabilities are interaction between family members, problem-solving abilities, way of life, housing and the family's economic situation, while the external capabilities are the support received from people outside the family and the availability of social services (Pelkonen & Hakulinen 2002). It has been shown that adequate social support seems to reduce mothers' stress (Saisto *et al.* 2008) and to promote the child's recovery from atopic eczema (Gustafsson *et al.* 2002). Our knowledge of the supporting and straining factors for mothers with one- or two-year-old children is incomplete, and similarly it is not known whether there exist allergy-related features that are perceived as supporting or straining. Such information is needed for health care to be effective and support for mothers to be successful in increasing the well-being of the whole family.

Aim

The aim of the study was to identify mothers' perceptions of the supporting or straining factors involved in motherhood generally and in relation to child's atopic dermatitis and food allergy at the age of one and two years.

Methods

Design

The data were collected in the context of on-going mother-infant follow-up study (Piirainen *et al.* 2006). Women from families at risk of child's allergy were recruited to this study and interviewed between 2005–2007.

Participants

The aim was to obtain a convenience sample of interviews with both the mothers of children with atopic dermatitis and/or food allergy and the mothers of healthy children of the same age and sex. The mothers were asked for permission for the interview during the child's clinical examination conducted by the physician at the age of one year. The researcher then contacted the mothers who had agreed to an interview. The interview was repeated when the child was two years of age if the allergy was still present. The inclusion criteria were

that mothers should have consented to be interviewed and that the child had atopic dermatitis and/or food allergy at the age of one year. The presence of atopic dermatitis was defined according to the criteria of Hanifin and Rajka (1980). The children were classified as healthy if they had no atopic dermatitis or food allergy. The method was 'purposive sampling', which aimed to find intensive and rich cases that offered strong examples of the phenomenon (Polit & Beck 2008). The eventual material consisted of eight interviews with mothers of one-year-old healthy children, 13 with mothers of children with atopic dermatitis and/or food allergy of the same age and 11 repeat interviews with the mothers of allergic children when they reached two years of age, altogether 32 interviews. One repeat interview was cancelled, because the child had recovered from the allergy and one because of illness in a family member. Data saturation was achieved earlier in the mothers with healthy children. As a result of the similarity in supporting and straining factors between the allergic and healthy children, the interviews with mothers of healthy children were not repeated at the age of two years.

Data collection and analysis

Semi-structured interviews were conducted with the mothers. They were thus being asked to describe supporting and straining factors and to assess the effect of the child's allergy as one or other of these. The questions posed were:

How would you evaluate (on the traditional school grading scale) your resources at the present moment? Explain why. What factors strain your resources as a mother most just now? What factors help you to manage?

The focus was on the facts and stories about their life situations recounted by the mothers. The researcher kept a notebook, where she wrote down her experiences, feelings, impressions of situations and thoughts after each interview. These notes, the taped interviews and preassessments of information on the child's allergic symptoms at the age of two years helped the researcher to return to the first interview before commencing the second. Separate preliminary interviews were carried out with three mothers from hospital outpatient department prior to the data collection to gain experience of the topics that would produce an appropriate focus in relation to the aims of the study. These interviews were not included in the final analysis.

The taped interviews were transcribed verbatim (350 pages) and subjected to deductive content analysis (Berelson 1952, Graneheim & Lundman 2004) focusing on their manifest textual content. This analytical process was guided,

and connections were made by means of the supporting and straining factors, with reference to the empowerment model for family nursing regarding the mother's personal abilities and the family's internal and external capabilities (Pelkonen 1994, Pelkonen & Hakulinen 2002). The meaning units that conformed to the initial aims of the research were reduced to condensed meaning units (Graneheim & Lundman 2004). These condensed meaning units were divided into two broad categories representing supporting and straining factors based on the mothers' descriptions (Fig. 1). Comparisons were made within these two categories in terms of similarities and differences, using the chosen model to guide this organisation of data. The interviews with the mothers of one-year-old-healthy children and with those of allergic children at the age of 1–2 years were analysed separately, so that they formed three separate clusters within the analysis model. The meaning units in the interviews with mothers of children with atopic dermatitis and food allergy that described the child's allergy as a supporting or straining factors were grouped separately for each age group according to the allergic symptoms (Fig. 2).

Rigour

The trustworthiness was considered throughout the study from the selection of participants, data collection and analysis to writing of a paper (Lincoln & Guba 1984, Graneheim & Lundman 2004, Elo & Kyngäs 2008). The data analysis began with the transcription of the interview followed by listening to the tapes. This active listening enabled the researcher to focus on what the mothers had said. The transcribed interviews were analysed with Exel, which enabled the researcher to move back and forth between the meaning units and condensed meaning units on the screen and to check that she had kept in touch with the original data. The categories were first constructed according to each mother's own description of the factors that gave her support and those that caused strain and then matched with the model. The researcher tried to be objective in this process of categorisation, and the findings were read through by an experienced nurse who had seen the families and had a long experience of allergic diseases.

Ethics

The research plan and the signed consent form were approved by the Ethical Committee of the Hospital District of South-West Finland. The researcher fully explained the nature of the research and the potential risks and benefits at the beginning of each interview as instructed in the advice on

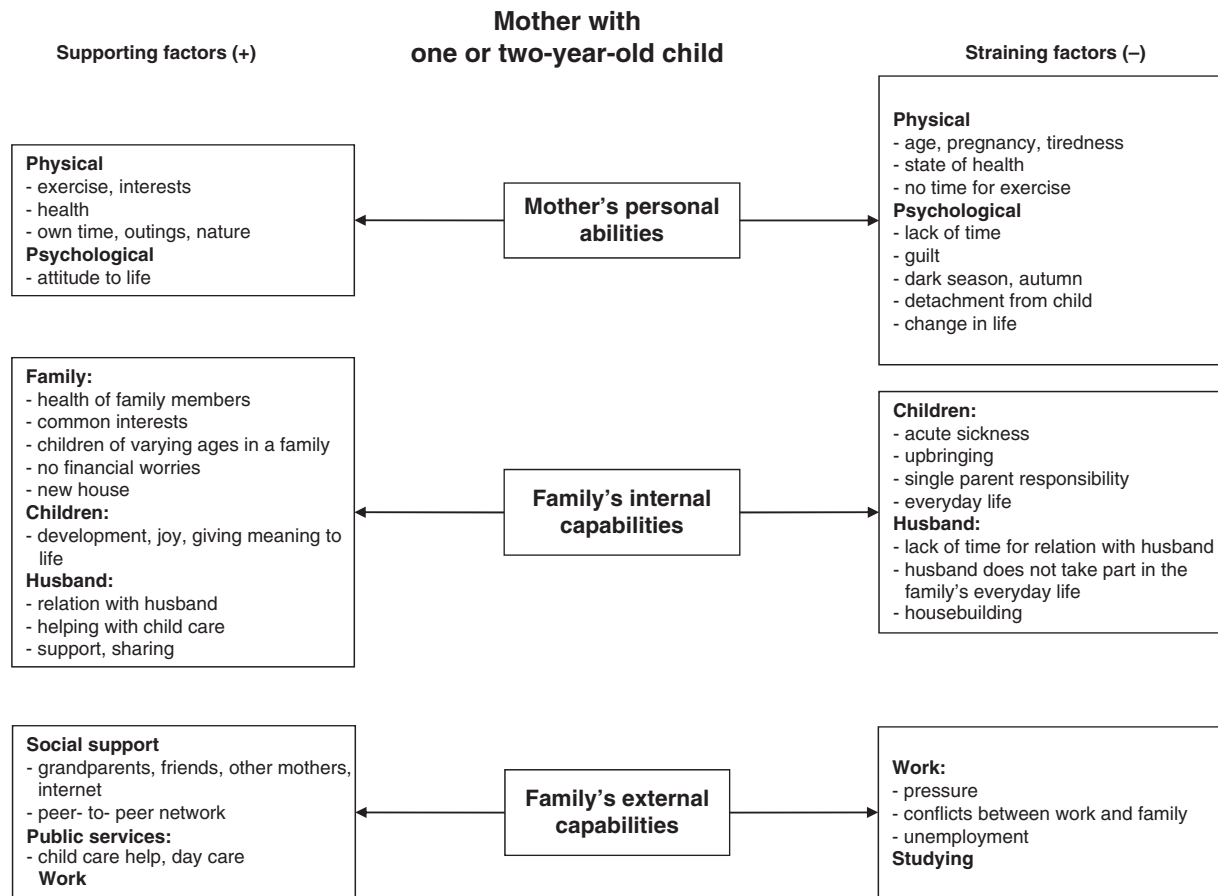


Figure 1 Mothers' perceptions of general supporting and straining factors.

the ethics of qualitative research published by Orb *et al.* (2001). They were informed that the participation was voluntary, and they could withdraw from the study at any time. A written and signed statement of informed consent was obtained from each mother before the first interview.

Results

The mean age of these Caucasian mothers ($n = 21$) when the child was aged one year was 33 years (range 26–41). All the mothers had educational qualifications, upper secondary school in 29% of cases and tertiary level in 67%. Most of them (71%) had allergies or asthma themselves, and nearly all (95%) were married or living in common law marriage. The number of children in the family was one in 19% of cases, two in 53% and four in 29%. Most of the mothers (71%) had decided to care for their children at home, when the maternity allowance ended at the child's age of nine to ten months. The children had mean ages of 13.5 months (range 12–15) and 27.2 months (range 24–29) when the interviews took place. The interview was usually held at the

mother's home, but two were held at the mother's place of work.

Mothers' perceptions of general supporting and straining factors

These factors were divided into three categories: mother's personal abilities and family's internal and external capabilities (Fig. 1). The same capabilities could be regarded as supporting or straining depending on their extent and the situation. The analyses were carried out in three groups, i.e. separately for mothers with one-year-old healthy and one- and two-year-old allergic children, but they covered the same elements and could be integrated into one single chart, as presented in Fig. 1. The figure described the supporting and straining factors, which are not described in detail in the text.

Mother's personal abilities

These resources were either physical or psychological in nature, where the physical characteristics included the age

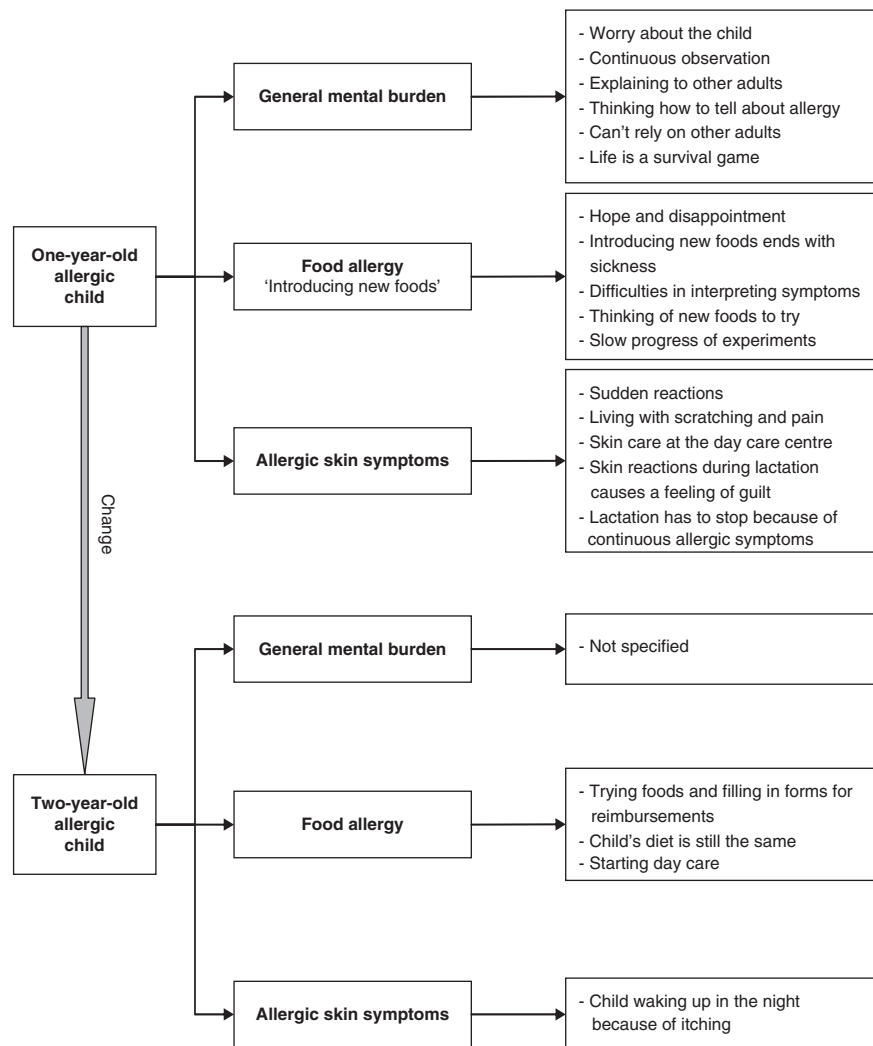


Figure 2 Child's allergy belonging to family's internal capability as a straining factor for mothers.

and state of health of the mother. A new pregnancy was a strain for mothers regardless of the age of any older sibling or of the child's possible allergy. Tiredness, which was a common feature of both the mothers with allergic children and those with healthy children of a similar age, was a result of the child's wakefulness at night, which was either occasional or continuous in nature. There was a powerful sense of a lack of time. There were too few hours available, and the thought of everything that remained to be done caused the mothers' stress, while they often mentioned that having time for themselves and for their own interests, such as Nordic walking, gymnastics, aerobic exercises, walking, reading, sewing or handicrafts, were general supporting factors. A sense of guilt was described as a part of motherhood: 'Mothers always suffer from a sense of guilt as to whether they are doing things right and whether everything has been

for the best. There is an awful feeling of uncertainty about being a mother and about what one is like as a mother.'

Some mothers gained energy from nature or little outings alone or with friends or their husband. A positive attitude towards life and a global outlook also gave the mothers support.

The family's internal capabilities

The family itself undeniably gave the mother support, and the health of the family and children was mentioned even by the mothers of one- and two-year-old allergic children. Every day of life with a little child was demanding, and acute sickness in a child caused an additional feeling of tiredness. One disease that was often mentioned was otitis, mainly in allergic children, and crying and tooth eruption were common in the healthy children at the age of one year. The mothers

described their children as sources of both support and strain. They provided the main content of the mothers' lives and gave them joy and pleasure in following their physical development:

You cast your line and catch one big fish and then you have the strength to talk about it for weeks on end, or else about other things. When you see the little ones learning new things or being full of enthusiasm about quite small things it gives you the strength to take a delight in small things, too.

The other children in the family, with their different age-related problems, were an added challenge for the mothers, but they also introduced some variation into the mother's daily life. Being a single parent was a heavy burden to bear, because there was no one else to take care of the children if the mother was sick. Similarly, the fact that the family were involved in building of a house of their own meant that the husband was absent for most of the time. Otherwise, the husband would be able to give the mother support by taking care of the children, helping with the housekeeping and sharing the problems related to the upbringing of the children and coping with the allergy symptoms. A well-functioning relationship between the couple helped the mother to cope and reduced her tiredness. In families with a one-year-old healthy child or a two-year-old allergic child, common interests such as swimming with the child or scouting were the ways of being together.

Family's external capabilities

Work played a dual role in the mothers' life. Going back to work from maternity leave created a challenge and aroused tensions between her family and her job. Particular strains arose from problems at work and possible unemployment, but otherwise work was experienced as a way of taking a break, getting away from home, experiencing success and having some time of one's own, especially for the mothers of allergic children. As one mother put it: 'That there should be something more to do than sit here making sand pies, reading books and driving trains day after day.' Other people such as friends, child care helpers, grandparents and other mothers were able to provide assistance in various ways, when child was one year old and allergic.

Child's allergy belonging to family's internal capability as a straining factor for mothers

The child at the age of one year

At the age of one year, child's allergy placed an unspecified mental burden on the mother, together with specific problems related to atopic dermatitis or food allergy (Fig. 2). The

mental burdens were partly everyday worries about the child and the need for continuous observation. This is the time when children need to have solid foods in their diet and to experience new tastes and have something to bite on. Most of the mothers were still at home and were taking care of the children by themselves, so that other adults caused a mental burden for them, particularly as they were tired of constantly having to explain about the allergy to other people. This had to be done in different ways for different people and varied with the changing allergy situation. Also, the mothers could not rely on other people who were asked to look after the child acting in the agreed way, which made it difficult to leave their child with anyone else.

Food allergy and the introduction of new foods into the child's diet arose as topics in the interviews. Trying new foods aroused the hope of finding them suitable and if they, too, caused symptoms and had to be avoided the disappointment was enormous. The mothers reported that it was especially depressing when this pattern went on and on:

It's hard going when you hope time after time and are disappointed. It's mentally very exhausting, apart from the fact that your child is suffering from the symptoms. You get the feeling of Oh, not again! Quite hopeless and at just the wrong time.

Sometimes a new food would have to be abandoned, when the child was taken ill and the mother was unable to tell whether the food as such had been tolerated or not. Stomach or intestinal symptoms were especially difficult to interpret:

It's pretty hard at the experimenting stage in particular. If someone were to say that here are five sorts of food and you have to give your child these for the next year, well, it would be easier in the end than having to live with the constant uncertainty of whether there's something in a particular food than disagrees with him or not and will he get ill or will we be able to go on a particular trip or not, or will he get an upset stomach again?

The mothers had to weigh up the severity of the symptoms against the advantage of adding a new foodstuff to the rather limited diet. It took time to introduce each new food item and the mothers also felt that thinking and planning what food to try next was difficult.

Skin problems related to atopic dermatitis caused sudden, unexpected reactions, and it was often hard to find the cause, which bothered the mothers. The continuous waking in the night and the resulting tiredness meant that the mothers who faced this burden did not care about little problems such as mild eczema any more. Also, the food eaten by the mother during breastfeeding caused skin symptoms in the child, which gave the mother a feeling of guilt. Sometimes the mothers had to stop breastfeeding because of these

symptoms, and this was annoying for those who would otherwise have wanted to go on breastfeeding.

Specific supporting factors related to allergy were the mother's own experience and knowledge of allergy and hope for an improvement in the child's allergic condition. Internal capabilities included a stable skin situation for the child and the achievement of allergen-free surroundings, while the external capabilities experienced included support from friends, grandparents and the mothers of other allergic children.

The child at the age of two years

As the child advanced from one to two years of age, the situation changed (Fig. 2). The causes of the mother's strain factors were still the food allergy and skin symptoms in atopic dermatitis. The child's diet usually included a wider variety of foodstuffs by this time, but if it had remained the same over the year without any significant change, this, too, tended to affect the mother negatively, in that her hope of some improvement in the situation had vanished. Filling in insurance forms time and again and trying to obtain reimbursements on special foods was also a source of stress for the mothers, and further difficulties had arisen if the child had started in day care, as this meant that the mother had to visit a physician to obtain a certificate of the child's allergies for the day care centre and to teach the staff of the centre how to manage with the child's food allergy, skin care and/or asthma care. Once all these preparations had been made, the mother's life was somewhat easier, but it was still possible at the age of two years for the child to awaken in the night because of itching.

The supporting factors were mainly personal psychological abilities, which were a hope for a better future, experience and knowledge of allergy and the experience that life includes something other than the child's allergy, e.g. through going back to work as an external capability attached to the family: 'One thing that keeps me sane is work. It gives me a different perspective that life does not just revolve around the one pimple on the child's cheek.' By the time the child was two years of age, the mother had learned to live with the allergic disease, which had become a part of everyday life:

Not that sort of hopeless feeling, as it was ... sort of ... then ... sort of ...with two of them having symptoms.

The need to discuss it with friends or the mothers of other allergic children had diminished.

Discussion

The main result of this qualitative interview study was that allergic disease in a child will exert a strain on the mother,

when the child is at the age of one year and new foods have to be introduced into the diet. This process can be delayed by atopic dermatitis or food allergy, so that the mother is unable to follow the suggested guidelines and may face a feeling of being unsuccessful. Although the mothers interviewed here learned to live with the allergy problem by the time the child reached the age of two years, their burden continued to be a serious one if the situation remained stable with continuing symptoms and delayed the introduction of new foods into the diet, which thus remained fairly monotonous while the child was aged between one and two years. Atopic dermatitis, which caused the child to wake up in the night because of itching, also meant a strain for the mothers.

Chamlin *et al.* (2004) categorised the effects of a child's atopic dermatitis on the parents into four domains: physical health, emotional health, physical functioning and social functioning. Physical health and emotional health were consistent with the general mental burden recognised here, including all the problems described earlier and with the same elements such as exhaustion/tiredness, sleep deprivation, disappointment, frustration and guilt. Guilt was reported here in connection with the duties of a mother and not in the sense of feeling personally responsible for the child's disorder. Employed mothers have been shown previously to develop feelings of guilt in situations that they interpret as implying a failure to meet up to their responsibilities (Elvin-Nowak 1999). During breastfeeding, however, mothers experience the feelings of guilt and personal responsibility for having caused the allergic symptoms in the child.

The supporting and straining factors formulated for the mothers of both the allergic and healthy children in this series included the same basic elements and belonged to motherhood in general, and the connecting categories, including the mother's personal abilities and the family's internal and external capabilities, were the same regardless of the child's age or allergy. The profile of motherhood constructed from dichotomies between factors such as children, the husband and the mother's work pointed to both supporting and strain factors, showing how the mothers of one- and two-year-old children live in momentary situations, where a feeling of strength can revert to strain owing to some sudden occurrence. The mothers of allergic children who experienced awakenings in the night because of the child's atopic eczema led a more intense everyday life, but the same elements were to be found.

These findings support those reported in earlier studies where mothers were happy with their baby but tired by the time the child was aged eight months (Symon *et al.* 2003). The mothers who suffered more stress felt much more tired

and had less personal time and more work-related problems (Symon *et al.* 2003), and the same work-related features were to be seen in the present results among the mothers who had returned to work. However, work was also the source of support for mothers in our study. The strains felt by families with small children have been classified into financial strains, intra-family strains, pregnancy and childbearing strains, work-family strains and illness, family resources (strengths), family accord, financial management, communication, personality issues, leisure activities and health practices (Olson *et al.* 1989). The supporting and straining factors for the mothers were classified in the present case from the empowerment perspective, although the same basic elements existed as in this earlier study with regard to parenting.

The concept of empowerment, which belongs to the chosen model, was adopted to describe the mothers' situations. The outcome was that the mothers were aware of their strengths, competences and capabilities and were able to maintain their own sense of power under the changing circumstances. The empowerment can be influenced by several factors, such as the mother's values, beliefs, will and motivation, and the experience and social support received from her spouse, friends, healthcare professionals and other mothers (Gibson 1995). Most of these factors were described by the mothers in the interviews as sources of support. The amount of experience of motherhood was relevant to these results, as there were one or two older mothers and some mothers with four children amongst the subjects. Nearly all the mothers were interviewed at home, which gave the interviewer an opportunity to monitor how they lived and see the children in their home surroundings. Interviewing was chosen as the research method to gain reliable information about the mothers' experiences. In the interview situations, the mothers were allowed to tell their stories freely. The researcher posed extra questions that were equivalent to the essential ones but worded differently to verify the reliability of the responses, because mothers can understand questions about supporting and straining factors as applying either to everyday life or to the child's allergy.

The researcher thus met all the families in similar life situations, which made it easier to distinguish the impact of a child's allergy on the mother and on family life in general from life in a family with healthy children, when the interviews were carried out on the child reaching the ages of one and two years. In earlier studies, the children's ages have varied (Chamlin *et al.* 2004). A child's physical and psychological development inevitably presents challenges for the mother, and the age similarity of children in the present study made the group of mothers more homogeneous.

Limitations of the study

The mothers interviewed were those who had expressed their willingness to participate. Some mothers also had previous experience of allergy treatment in connection with older siblings, so that a childhood allergy was not a new thing for them. A mother's own allergy and the experience of such seemed to be supporting factors for her. These factors may explain why the findings were positive. Because of these facts and the small sample size, the generalisability of the results should be made with caution, and the sample may not be representative. The results, however, succeeded to identify mothers' perceptions. Eleven mothers were interviewed twice, which adds to the reliability of the results. The interviewer's own age and experience as a mother may also have detracted from the objectivity of the study. The interviewer's occupation was concealed until after the interview was over, as it could have affected the mothers' stories as had been noticed in the three preliminary interviews.

Conclusions

The basic strengthening and straining factors were the same in mothers with healthy or allergic children. The results of this qualitative study identified straining situations for mother with one- and two-year-old allergic child, where allergic disease delayed the entering of new foods into the child's diet, so that the variety of foods in the diet was limited compared with that of age mates, or where itching and scratching because of eczema constantly disturbed the mother's sleep. These mothers and families should be noticed by measuring the supporting and strengthening factors either with inquiring or with questionnaire, where the empowerment model is used. Nurses and other healthcare professionals meeting these mothers could provide support by focusing on supporting factors. Further research is needed to determine whether this kind of support for mothers based on identification of straining situations is possible and does this support promote mothers' empowerment in the long run.

Relevance to clinical practice

Mothers of allergic children in these situations should be recognised by healthcare professionals either by an inquiry or by a questionnaire based on an empowerment model for family nursing. Mothers should be provided with individual encouragement and support from mother and child health clinics by focusing on factors felt to be supporting ones at the child's age of one or two years.

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Contributions

Study design: SA, KL, RS; data collection and analysis: SA, KL, RS, EP and manuscript preparation SA, KL, EP.

Conflict of interest

No conflict of interest.

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