

Nurse-led clinics reduce severity of childhood atopic eczema: a review of the literature

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Summary

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Conflicts of interest

None declared.

Background The increasing prevalence and impact of atopic eczema in children in Western countries such as Australia substantiate the need to evaluate the current management of this illness. It has been well documented that the most important aspects in the management of atopic eczema are to allow adequate time for education and demonstration of treatments. However, current models of healthcare funding restrict the opportunity for patient education during medical consultation times. The contribution of nursing to patient care through nurse-led clinics has significant potential in the management of many common chronic illnesses, although atopic eczema has received minimal attention by researchers to date.

Objectives To discuss the current clinical management of atopic eczema, and to identify the evidence surrounding the benefits of nurse-led clinics in managing patients with chronic illnesses.

Methods Systematic searches were undertaken using the Cochrane Library, MedLine, PubMed and CINAHL from 1995 to 2005. Manual searches of references of retrieved articles identified two additional key studies from 1990 and 1993 which were also included in the review.

Results In total, 22 relevant publications were identified. These included both primary research and descriptive studies that covered the medical management of eczema, patient education and improved patient outcomes. The evidence emerging from the literature indicates that the current management of eczema through doctor-led clinics could be improved, with doctors often lacking the time to offer sufficient patient education to manage chronic illnesses effectively. The literature supports the efficacy of nurse-led clinics in the management of chronic illnesses. The benefits of nurse-led clinics include increased patient satisfaction, longer consultations resulting in improved patient education and similar health outcomes when compared with care from a doctor. No studies were identified comparing nurse-led and doctor-led clinics in the management of eczema.

Conclusions The most effective way to manage atopic eczema is to provide adequate time for education and demonstration of treatments, which the literature suggests can be achieved through nurse-led clinics. The literature review supports an investigation researching the outcomes of a nurse-led clinic on reducing the severity of eczema in children.

Atopic eczema is a chronic inflammatory skin condition affecting up to 30% of children in Western countries. It has been well documented that eczema severity affects both the well-being of the child and the quality of family life. Although there is no cure for atopic eczema, most patients will obtain optimal control of their condition with good adherence to treatment. Patient education is one of the keys to successful

management of atopic eczema and includes allowing adequate time for explanation and discussion about the nature of eczema and the need for appropriate skin care and applications. The current structure of Western healthcare systems means that many doctors do not have the time to meet the educational needs of people managing eczema. Although nurse-led clinics have resulted in improved quality of care,

better management and enhanced patient outcomes in the management of other chronic illnesses, no studies have evaluated the outcomes of a nurse-led clinic in reducing the severity of eczema in children. Nurse-led services are not simply replacing the doctor with a nurse; they are nurse-led in the sense of nursing being the lead therapy, with nursing adding an enhanced quality of care, which improves the process of giving care, and in turn the outcome of the care.¹

This review was conducted in order to evaluate the current management of children with atopic eczema, to explore the impact of nurse-led clinics on patient outcomes, and to identify areas for further research. The aim of the review was to discuss the literature surrounding the benefits of nurse-led clinics in managing patients with chronic illnesses, and the need to examine the place of nurse-led clinics in managing atopic eczema.

Materials and methods

The databases were searched using a combination of key words that included atopic eczema, atopic dermatitis, dermatology clinics/consultations, chronic disease self-management, eczema management, nurse-led, nurse practitioner, dermatology nurse and eczema severity using the Cochrane Library, MedLine, PubMed and CINAHL. The searches were restricted to human studies and publications written in English for the period 1995–2005. In addition, two key studies from 1990 and 1993 were identified in manual searches of references of retrieved articles and were also included in the review.

The search was limited to primary research involving randomized controlled trials (RCTs) and quasiexperimental trials. We located a total of 141 articles. However, many of these were not research based and provided only descriptive accounts of nursing roles, chronic illness interventions, and treatments for eczema and so were excluded. Twenty-two publications met our inclusion criteria. Fourteen were primary research. The remaining eight papers included systematic reviews and descriptive studies, but were included in the review as they compared nurse-led and doctor-led clinics and discussed eczema management.

Results

The studies were both evidence based and descriptive and identified the following themes, which will be discussed: medical management of eczema, patient education and improved patient outcomes.

Medical management of eczema

Although there is no cure for atopic eczema, with good adherence to management most patients can expect to respond well to treatment and obtain optimal control of their eczema.^{2,3} The traditional way of managing atopic eczema in a hospital setting is through a dermatologist-led clinic that commonly offers pharmacological treatments. A questionnaire

designed to ascertain expectations and patient satisfaction of the initial consultation with general practitioners and hospital doctors was sent to all members of the National Eczema Society in the U.K.⁴ Results demonstrated that 17% of patients' expectations of the initial consultation with the general practitioner were not met, 65% were partly met, and only 12% were completely met. Similarly, of the 2638 patients who had seen a hospital specialist, the expectations of 18% were not at all met, 62% partly met and only 19% completely met.⁴ These results suggest that the current management of eczema through doctor-led clinics could be improved.

Service outcome was examined by a preconsultation and a 6-week postconsultation patient questionnaire in 29 hospital dermatology departments randomly selected from an original sample of 187 centres across the U.K.⁵ The outcome measures were quality of life as measured by quality of life indices, self-reported improvement in sleep loss and in skin disease, and return to school or work.⁵ Although improvements were seen, none met the working standards of service outcomes on a national basis. The authors stated that the results of this baseline audit suggested that the outcome of patients with eczema following secondary care consultation may not be as good as some doctors believe.

The challenge is to evaluate an alternative intervention in the management of eczema and to compare patient outcomes to the current service of a dermatologist-led clinic. There are no identified studies that have measured patient outcomes comparing a nurse-led clinic with a doctor-led clinic in the management of eczema in children; however, several studies have evaluated the effectiveness of providing an additional nursing intervention to standard medical care in reducing severity of eczema^{6,7} (see Table 1 for a summary of study designs).

An RCT by Broberg *et al.*⁶ evaluated a single 'nurse's lesson' of active training and information in the treatment of atopic eczema when compared with a standard medical consultation. The study was based in Sweden with a small sample of 50 consecutive patients aged 4 months–6 years 2 months from a hospital outpatient clinic. Group A received routine information given by a doctor during the medical visit, and group B also visited a trained nurse to receive further information on eczema treatment and practical training in controlling atopic eczema.⁶ At the initial visit the mean total eczema score according to the severity grading instrument was 21.3 for group A and 26.4 for group B. One month later the score for group A decreased to 10.8 and that for group B to 6.9. The decrease in total eczema scores from the first to the third visit was significantly greater ($P < 0.05$) in group B than in group A.⁶ The eczema severity tool used was not a known severity index and validation of the tool was not discussed, reducing the validity of the results. The authors suggested that routine information from doctors is not enough and that patient outcomes can be further improved by giving patients more information and time.⁶

A longitudinal cohort study by Cork *et al.*⁷ employed a similar education session with 51 children with atopic

Table 1 Summary of studies measuring severity of eczema after attending a nurse-led clinic

Author	Purpose	Setting	Sample	Age of respondents	Study design	Measurement	Nurse intervention	Follow up	Strengths/weaknesses
Broberg <i>et al.</i> ⁶	To evaluate if extra active training and information given at a single session ('nurse's lesson') could improve the therapeutic result in the treatment of eczema compared with standard medical consultations	Outpatient clinic, Sweden	Atopic eczema, 50 consecutive patients	4 months–6 years 2 months	RCT	Eczema score based on severity and distribution of lesions	An additional education session after the initial visit to the doctor	Monthly intervals for 3 months	Control group Unknown severity tool No data on reliability or validity of tool Consecutive sample Open study Small sample Validated severity tool No control group
Cork <i>et al.</i> ⁷	To determine the effect of education and demonstration of topical therapies by specialist dermatology nurses	Outpatient clinic, U.K.	Atopic eczema, 50 new referrals	2 weeks–14 years	Longitudinal cohort study	Therapy utilization and severity of eczema (SASSAD)	Explanation and demonstration of topical treatments after seeing the dermatologist and follow-up education	1 year; initial follow up at 3 weeks increasing to 6- and 8-week intervals	

RCT, randomized controlled trial; SASSAD, Six Area, Six Sign Atopic Dermatitis⁸ severity index.

eczema attending a paediatric dermatology outpatient clinic in the U.K. However, this study also included a demonstration by the nurse on how to apply the emollients, topical steroids and wet dressings on the child. There was no comparison group in this study. At baseline, 86% of parents recalled receiving no explanation of the cause of eczema and 96% recalled receiving no demonstration of how to apply any topical treatments for their child's eczema.⁷ Using the Six Area, Six Sign Atopic Dermatitis⁸ severity index the mean severity score fell from 42.9 at the initial visit to 4.6 at the final visit 6 months later. The parents' mean assessment of itching fell from 7.1 to 1.1, sleep from 5.6 to 0.3 and irritability from 5.3 to 0.3. The mean weekly emollient use increased from 54.3 g at baseline to 426 g at the final visit. At the second visit at 3 weeks, 95% of the children were being treated with three types of emollient (moisturizer, bath oil and soap substitute). The use of wet dressings increased from 7.8% to 33%.⁷

The study by Cork *et al.*⁷ found that education and demonstration altered therapy utilization and clinical outcomes, with education allowing the child or parent to take charge of managing the eczema. The authors concluded that the most important interventions in the management of eczema were to spend time to listen and explain the causes and management of eczema, and to demonstrate how to apply topical therapies.⁷

Whatever the treatment, poor adherence is a major cause of treatment failure in atopic eczema.⁹ The difficulties in managing a chronic illness such as atopic eczema are well recognized in the literature. Treatment regimens for chronic illnesses are often complex and require the patient, parent or carer to implement treatments at home for extended periods.¹⁰ Chronic illness management requires long-term self-care,^{3,11} and as atopic eczema is predominately a disease of early childhood, parental participation is critical in the management of eczema treatments.⁶

Patient education

Patient education promotes self-care, treatment adherence and helps the patient cope more effectively with their illness.^{3,10} Nicol³ states that patient education is the key to obtaining successful outcomes in the management of eczema. Cork *et al.*⁷ found that after the intervention by the advanced practice nurse, the patients received at least 2 h of listening, explanation and demonstration of therapies, in contrast with 6 min available for the average general practitioner consultation. A control group was not used in the study by Cork *et al.*⁷ and therefore the authors were not able to determine if consultation time was correlated to patient outcomes. In Australia, the average medical consultation time is 12 min,¹² with Campbell *et al.*¹³ and Østbye *et al.*¹⁴ arguing that longer appointment times would provide better chronic illness management. In Western countries with predominantly doctor-led services, the needs of patients with atopic eczema cannot be effectively met. The contribution of nursing to patient care

through providing nurse-led services has been reported to have significant potential.¹

Improved patient outcomes

Many studies support the efficacy of nurse-led clinics in the management of chronic illnesses (see Table 2 for a summary of study designs). Chronic illnesses cannot be cured and control of symptoms is a key goal in their management. A systematic review by Horrocks *et al.*¹⁵ was carried out to determine whether nurse practitioners could provide care at the first point of contact equivalent to doctors in a primary care setting. Patients were more satisfied with care by a nurse practitioner, no difference in health status was found, and nurse practitioners had longer consultations,¹⁵ which could lead to increased patient education. Nurse practitioners also scored better on communication than the doctors, which could result in patients having a greater understanding of their illness and treatments leading to increased adherence and self-care. According to Horrocks *et al.*¹⁵ and a systematic review by Laurant *et al.*,¹⁶ nurse practitioners can provide care that leads to increased patient satisfaction and similar health outcomes when compared with care from a doctor. Certainly with the increased prevalence of chronic illnesses, nurse-led interventions can play a significant role in symptom management and alleviate some of the pressure on healthcare systems straining to meet the needs of the chronically ill.

An RCT by Kinnersley *et al.*¹⁷ sought to ascertain any differences between care from nurse practitioners and that from general practitioners for 1368 patients seeking 'same day' consultations in primary care in the U.K. They found that patients who consulted nurse practitioners were generally more satisfied with their care.¹⁷ According to Renzi *et al.*,¹⁸ it is well known that poor patient satisfaction can lead to poor compliance and consequently a poor outcome of treatment. A key advantage of nurse-led clinics is the length of time between the advanced practice nurse and patient/carer and patients reported being provided with more information.¹⁷ According to Lubkin and Larsen,¹⁰ this increased amount of information allows the patient to assume a greater role in their management and ensures self-care. Significantly, more patients who consulted a nurse practitioner reported that they had been told the cause of their illness, the likely duration of their illness, how to relieve their symptoms, how they could reduce the chance of recurrence and what to do if the problem persisted.¹⁷ Leung *et al.*¹⁹ stated that this knowledge is essential for a patient to achieve effective control of their eczema.

RCTs conducted in U.K. hospital outpatient settings^{20–23} comparing nurse-led clinics and consultant-led clinics in management of chronic illnesses also found that patients were significantly more satisfied with the nurse-led clinics, which were perceived to provide a greater amount of information that enhanced patient outcomes and well-being, in comparison with those who received medical care. These studies were limited to nurse-led follow-up clinics. In the RCT by Hill²² the consultant rheumatologist saw an average of 17 patients

Table 2 Summary of studies comparing nurse-led and doctor-led clinics

Author	Purpose	Setting	Sample	Age of patients	Study design	Measurement	Nurse intervention
Denver <i>et al.</i> ²⁰	To compare the effectiveness of a nurse-led hypertension clinic with conventional primary care	Outpatient clinic, U.K.	Uncontrolled hypertension in patients with type 2 diabetes, 120 patients	Adults	RCT	Management of hypertension	Follow-up care
Fathfull <i>et al.</i> ²¹	To evaluate nurse-led follow up compared with conventional medical care	Outpatient clinic, U.K.	Following radiotherapy for prostate and bladder cancer, 115 patients	Adult men	RCT	Patient morbidity and satisfaction	Follow-up care
Hill ²²	To assess patient satisfaction with the care given in a nurse-led clinic compared with a consultant rheumatologist's clinic	Outpatient clinic, U.K.	Rheumatoid arthritis, 70 patients	22–75 years	RCT	Satisfaction with care	Follow-up care
Horrocks <i>et al.</i> ¹⁵	To determine whether nurse practitioners can provide care at first point of contact equivalent to doctors	Primary care, developed countries	Undifferentiated health problems; 11 RCTs and 23 prospective observational studies	Adults and children	Systematic review	Patient satisfaction, health status, costs, process of care	Providing first point of contact for patients
Kinnersley <i>et al.</i> ¹⁷	To ascertain any differences between care from nurse practitioners and general practitioners	Primary care, U.K.	'Same day' consultations, 1368 patients	Adults and children	RCT	Patient satisfaction, resolution of symptoms and concerns, care provided, information provided to patients, patients' intentions for seeking future care	Providing first point of contact for patients
Laurant <i>et al.</i> ¹⁶	To evaluate the impact of doctor–nurse substitution	Primary care, included English and Dutch language publications	Urgent consultations and chronic conditions, 25 articles, RCTs, controlled before-and-after studies, interrupted time series	Adults and children	Systematic review	Patient outcomes, process of care, resource utilization	Assumed responsibility for first contact care and/or ongoing management
New <i>et al.</i> ²³	To determine the effectiveness of nurse-led clinics compared with standard care	Outpatient clinic, U.K.	Hypertension and/or raised total cholesterol in patients with diabetes, 1407 patients	Adults	RCT	Improvement in the achievement of hypertension and cholesterol targets	An additional education/counselling session and follow-up care

RCT, randomized controlled trial.

per 4-h outpatient clinic compared with the eight seen by the nurse. This difference allowed more time for the patients in the nurse-led clinic to receive increased education, resulting in a better understanding of their condition and management of symptoms and in turn greater satisfaction with care.

Nurse-led outpatient appointments in the study by Faithfull *et al.*²¹ were twice as long as the doctors' appointments and were based on exploring the patient's understanding of their diagnosis of prostate or bladder cancer, symptoms of their illness and radiotherapy and the meaning of their illness. In contrast, the medical care consisted of assessment of toxicity, symptom management and monitoring of progress through treatment. According to Lubkin and Larsen¹⁰ a disease-specific focus or cure-oriented model is not practical for long-term care. The main issue in chronic illness is management rather than a search for remedial results.¹⁰ Outside of the U.K., there is very little work on comparing nurse-led and doctor-led clinics for improvement of patient outcomes. Also, despite the known benefits of nurse-led clinics, no studies were identified comparing patient outcomes after attending a nurse-led clinic and doctor-led clinic, where the nurse assumed responsibility for first contact with the patient, in the management of eczema.

Discussion

With the increasing prevalence of atopic eczema in children and its impact on the quality of life of both the child and the family, optimal management of this chronic illness is paramount. According to the literature the most effective way to manage atopic eczema is to provide time for education and demonstration of a comprehensive range of treatments. This management cannot be achieved alone in dermatologist-led clinics due to time constraints placed on doctors. Nurse-led clinics have been shown to allow increased time to be spent with patients, resulting in greater patient education, adherence to treatments and increased satisfaction with care. Studies identified comparing patient outcomes of nurse-led and doctor-led clinics in outpatient settings were limited to nurses who provided follow-up care rather than first contact for patients. These studies tended to be mainly conducted in the U.K. No studies were identified comparing nurse-led and doctor-led clinics in the management of eczema in children.

Overall, the study quality was moderate. The research comparing nurse-led and doctor-led clinics, although limited, employed both objective and subjective outcome measures. The studies were appropriately carried out as RCTs as they were testing the effect of an intervention. Participants in all groups were followed up and data collected in the same way. The sample size was below the power calculation in the majority of the trials, therefore limiting the ability of the studies to detect a clinically important difference. The randomization process varied among the trials, and blinding was lacking, increasing the chance of selection and confounding bias, impacting on the validity of the results. Baseline characteristics of the intervention and control groups were presented

clearly in all papers, with both groups similar in all studies. Follow up was reasonable with data collected for an average of 6 months. Generalizations of the findings were limited to the context of the study settings.

In conclusion, the literature review supports an investigation researching the outcomes of a nurse-led clinic on reducing the severity of eczema in infants, children and adolescents when compared with a dermatologist-led clinic in order to identify the most appropriate way to manage atopic eczema in children. An RCT would be the most appropriate research design to evaluate a nurse-led intervention. Severity of eczema should be measured using a validated severity index with preintervention and postintervention severity scores of patients attending a nurse-led clinic compared with severity scores of patients attending a dermatologist-led clinic.

References

- 1 McMahon R. Therapeutic nursing: theory, issues and practice. In: *Nursing as Therapy* (McMahon R, Pearson A, eds), 2nd edn. Cheltenham: Stanley Thornes, 1998; 1–20.
- 2 McHenry PM, Williams HC, Bingham EA. Fortnightly review: management of atopic eczema. *BMJ* 1995; **310**:843–7.
- 3 Nicol N. Managing atopic dermatitis in children and adults. *Nurse Pract* 2000; **25**:58–69.
- 4 Long C, Funnell C, Collard A, Finlay A. What do members of the National Eczema Society really want? *Clin Exp Dermatol* 1993; **18**:516–22.
- 5 Shum K, Lawton S, Williams H *et al.* The British Association of Dermatologists audit of atopic eczema management in secondary care. Phase 3: audit of service outcome. *Br J Dermatol* 2000; **142**:721–7.
- 6 Broberg A, Kalimo K, Lindblad B, Swanbeck G. Parental education in the treatment of childhood atopic eczema. *Acta Derm Venereol (Stockh)* 1990; **70**:495–9.
- 7 Cork MJ, Britton J, Butler L *et al.* Comparison of parent knowledge, therapy utilization and severity of atopic eczema before and after explanation and demonstration of topical therapies by a specialist dermatology nurse. *Br J Dermatol* 2003; **149**:582–9.
- 8 Berth-Jones J. Six Area, Six Sign Atopic Dermatitis (SASSAD) severity score: a simple system for monitoring disease activity in atopic dermatitis. *Br J Dermatol* 1996; **135** (Suppl. 48):25–30.
- 9 Hoare C, Li Wan Po A, Williams H. Systematic review of treatments of atopic eczema. *Health Technol Assess* 2000; **4**:1–191.
- 10 Lubkin I, Larsen P. *Chronic Illness: Impact and Interventions*. Boston: Jones and Bartlett, 2002.
- 11 Ersser S, Latter S, Surridge H *et al.* Psychological and Educational Interventions for Atopic Eczema in Children (Protocol). *The Cochrane Library* 2003. Available at: <http://212.49.218.200/newgenMB/ASP/Document.asp?docNo=2753> (accessed on 17 September 2003).
- 12 Sayer G, Britt H, Horn F *et al.* *Measures of Health and Health Care Delivery in General Practice in Australia*. Westmead, NSW: University of Sydney and Australian Institute of Health and Welfare, 2000.
- 13 Campbell SM, Hann M, Hacker J *et al.* Identifying predictors of high quality care in English general practice: observational study. *BMJ* 2001; **323**:784–7.
- 14 Østbye T, Yarnall K, Krause K *et al.* Is there time for management of patients with chronic diseases in primary care? *Ann Fam Med* 2005; **3**:209–14.
- 15 Horrocks S, Anderson E, Salisbury C. Systematic review of whether nurse practitioners working in primary care can provide equivalent care to doctors. *BMJ* 2002; **324**:819–23.

- 16 Laurant M, Reeves D, Hermens R *et al.* Substitution of Doctors by Nurses in Primary Care. *The Cochrane Library* 2005. Available at: <http://www.mrw.interscience.wiley.com/cochrane/clsysrev/articles/CD001271/frame.html> (accessed on 13 October 2005).
- 17 Kinnersley P, Anderson E, Parry K *et al.* Randomised controlled trial of nurse practitioner versus general practitioner care for patients requesting same day consultations in primary care. *BMJ* 2000; **320**:1043–8.
- 18 Renzi C, Abeni D, Picardi A *et al.* Factors associated with patient satisfaction with care among dermatological outpatients. *Br J Dermatol* 2001; **145**:617–23.
- 19 Leung D, Nicklas R, Li J *et al.* Disease management of atopic dermatitis: an updated practice parameter. *Ann Allergy Asthma Immunol* 2004; **93**:S1–21.
- 20 Denver E, Barnard M, Woolfson R, Earle K. Management of uncontrolled hypertension in a nurse-led clinic compared with conventional care for patients with type 2 diabetes. *Diabetes Care* 2003; **26**:2256–60.
- 21 Faithfull S, Corner J, Meyer L *et al.* Evaluation of nurse-led follow up for patients undergoing pelvic radiotherapy. *Br J Cancer* 2001; **85**:1853–64.
- 22 Hill J. Patient satisfaction in a nurse-led rheumatology clinic. *J Adv Nurs* 1997; **25**:347–54.
- 23 New J, Mason J, Freemantle N *et al.* Specialist nurse-led intervention to treat and control hypertension and hyperlipidemia in diabetes: a randomized controlled trial. *Diabetes Care* 2003; **26**:2250–5.