

A behaviour change package to prevent hand dermatitis in nurses working in health care: the SCIN cluster RCT

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Scientific summary

The SCIN cluster RCT

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Scientific summary

Background

Hand dermatitis can be a serious health problem in health professionals. Although a range of skin-care strategies and policy directives have been developed in recent years to minimise the risk, their clinical effectiveness and cost-effectiveness remain unclear. Evidence suggests that an intervention based on the theory of planned behaviour and implementation intentions could lead to enhanced hand-care behaviours.

Objective

The Skin Care Intervention in Nurses (SCIN) trial tested the hypothesis that a behaviour change intervention to improve hand care, based on the theory of planned behaviour and implementation intentions, coupled with provision of hand moisturisers, could produce a clinically useful reduction in the prevalence of hand dermatitis, when compared with standard care, among nurses working in the UK NHS who are particularly at risk. The secondary aims of the SCIN trial were to assess the impact of the intervention on participants' beliefs and behaviour regarding hand care and the cost-effectiveness of the intervention in comparison with normal care.

Design

A cluster randomised controlled trial with primary and secondary outcome measures.

Methods

A cluster randomised controlled trial was conducted at 35 NHS hospital trusts/health boards/university sites across the UK. The study recruited first-year student nurses with a history of atopic tendency and nurses working in either intensive care units or special-care baby units. Nurses at 'intervention light' sites were managed in accordance with what was considered current best practice, with provision of an advice leaflet about optimal hand care to prevent hand dermatitis and encouragement to contact their occupational health department early if hand dermatitis occurred. Nurses at 'intervention plus' sites were additionally encouraged to use a behaviour change package to improve hand care together with ongoing active reinforcement of its messages and enhanced provision of moisturising cream. The behaviour change package targeted attitudes, subjective norms, perceived behavioural control and action-planning for several hand dermatitis prevention behaviours. It was delivered to participants via an e-mail link to an online web-based package. If this was not possible for technical reasons, a paper-based magazine version of the behaviour change package was posted to participants. A number of approaches were used to remind participants at intervention plus sites to access the behaviour change package during the 12-month study period. These included provision of a leaflet containing the behaviour change package web address when sending out the 1-month post-baseline questionnaires; text and e-mail reminders of the behaviour change package web address; posters, including the behaviour change package web address, displayed in prominent areas in critical care units; and verbal reminders during mandatory hand-care training.

The impact of the interventions was compared using information collected from a series of questionnaires administered during the trial and through standardised photographs of the hands collected at baseline and after 12 months' follow-up. In addition, relevant data were collected for a cost-benefit analysis and process evaluation.

Results

The intention-to-treat analysis of the primary outcome showed that the reduction in the prevalence of hand dermatitis between the intervention light and intervention plus groups was not statistically significant (student nurses: odds ratio 1.25, 95% confidence interval 0.59 to 2.69; intensive care unit nurses: odds ratio 1.41, 95% confidence interval 0.81 to 2.44). With respect to health beliefs associated with hand dermatitis, the study found that there were similar scores for student nurses in the intervention light arm between baseline and follow-up. In contrast, student nurses in the intervention plus arm had higher health beliefs scores at follow-up than at baseline, although this change was not statistically significant. For intensive care unit nurses, changes in levels of health beliefs from baseline to follow-up were smaller and similar for nurses in the intervention light and intervention plus arms. Both groups of nurse participants had high levels of baseline beliefs about the benefits of using hand moisturisers before and after work and during their breaks. In relation to changes in health behaviour scores, the study found that most of the hand dermatitis prevention behaviours at follow-up were higher for participants in the intervention plus arm than for participants in the intervention light arm, with important differences observed for frequency of use of hand moisturising cream before, during and after shifts among intensive care unit/special-care baby unit nurses. The intervention was inexpensive to deliver. The mean intervention costs were £14 for student nurses and £13 for intensive care unit nurses.

Conclusions

There was no evidence that the risk of developing dermatitis in the intervention light group was greater than the intervention plus group. However, the study makes an important contribution to the existing literature and evidence relating to behaviour change associated with hand dermatitis prevention in at-risk nurses. An important finding was that the nurse participants had high levels of baseline beliefs about the importance of using hand moisturisers before, during and after work. Future research should focus on how workplace culture can be changed in order for that knowledge to be put into action in the face of busy shifts.

Implications for health care

1. As the intervention did not result in a statistically significant reduction in hand dermatitis, the study was unable to recommend that the intervention is nationally rolled out across the wider NHS environment.
2. However, the results could be presented to individual NHS trusts to allow them to decide if and how the intervention could be adopted locally, as the intervention is cheap to deliver. Options include offering access to the behaviour change package and a personal supply of hand moisturisers at the time of mandatory hand-hygiene training or routine surveillance for hand dermatitis or at student nurse induction programmes. The Royal College of Nursing has endorsed the web-based behaviour change package as current best practice and has made it available to its membership via its website.
3. The success of any future initiative that aims to change health-care workers' beliefs, attitudes and behaviours on good hand care should involve strong leadership and support from management and infection control teams.

Trial registration

This trial is registered as ISRCTN53303171.

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This report

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