

What do trainee hairdressers know about hand dermatitis?

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Hand dermatitis is an important cause of morbidity in hairdressers. We conducted a questionnaire survey of 121 trainee hairdressers from 2 hairdressing colleges in Burnley (UK). The questionnaire concerned the number and types of hairdressing procedures performed, previous and current medical history, awareness of risks to the skin from hairdressing, and knowledge of hand dermatitis prevention. 17% of the trainees suffered currently from hand dermatitis. This is likely to be due to the large amount of wet work done by apprentice hairdressers, particularly those who worked in salons. 2/3 of trainees were not aware that atopic eczema predisposed to hand dermatitis. Formal pre-school and pre-employment counselling was limited. Knowledge on hand care among trainees was not often translated into practice, with gloves being worn by only 9% when shampooing and 58% when perming. Prevention of hand dermatitis by education and pre-employment counselling is of fundamental importance.

Key words: hairdressers; hand dermatitis; pre-employment counselling; prevention. ©Blackwell Munksgaard, 2002. © Blackwell Munksgaard, 2002.

Accepted for publication 16 September 2002

Hairdressing carries a high risk of hand dermatitis (1). Some degree of dermatitis is found in nearly all hairdressers, especially early on in their careers from repetitive wet work. In a hairdressing salon, many of the high-risk procedures, such as hair shampooing, application of perm and tint chemicals and washing out of these chemicals, are often undertaken by apprentices. When an apprentice develops hand dermatitis, there is often little support from employers and dismissal may be feared.

Hairdressing is a highly mobile vocation with high staff turnover, hence the precise incidence and prevalence of hand dermatitis is difficult to determine. Prevalence rates of hand dermatitis range widely from 10 to 50% (2, 3). The prevalence in apprentice hairdressers appears to be higher, Cronin & Kullavanijaya noting that 30 of a series of 33 apprentices had hand dermatitis (4). Another study of apprentice hairdressers recorded an incidence of 145 per 1000 per year (5).

Most hairdressers enter vocational training at the age of 16–17 years. In the UK, there are 2 main pathways for entering training: by enrolling as a full-time college student, or by taking up an apprenticeship with a hairdressing salon. The full-time college student attends an 18-h week of

studies combining theory with practical sessions. The salon apprentice attends the college as a day-release student (usually 1 day a week), and works at a salon for the other 4 or 4 1/2 days.

The aim of this questionnaire-based survey was to determine the sources of pre-school and pre-employment counselling, the knowledge and actual practice of hand dermatitis prevention, and attitudes towards glove use in a group of trainee hairdressers.

Methods

2 hairdressing colleges in Burnley (UK) were invited to participate in this questionnaire survey. Pilot questionnaires were completed by 10 students from each college, the responses were analysed and the questionnaire altered as appropriate. The final questionnaire sought information concerning the number and types of hair procedures performed whilst an apprentice, previous and current medical history of hand dermatitis and atopic diseases, pre-school or pre-employment counselling, knowledge of risk factors for hand dermatitis, its prevention and treatment and any particular problems encountered with glove-wearing.

Table 1. Number of hair procedures performed.

	Number of shampoos per day	Number of dyeings per week	Number of perms per week
Full-time student	2	2	1
Salon apprentice	12	3	0
Night-class attendee	1	1	1

Table 2. Subjects' medical history

Medical history	Currently	Previously
Hand dermatitis	20 (17%)	18 (15%)
Atopic eczema	10 (8%)	9 (7%)
Asthma	15 (12%)	5 (4%)
Allergic rhinitis	24 (20%)	9 (7%)
Nickel allergy	51 (42%)	31 (26%)
Attend GP for hand dermatitis	8 (7%)	14 (12%)
Attend dermatologist for hand dermatitis	4 (3%)	3 (3%)

Students attending the 2 hairdressing colleges in September 2000 were recruited to the survey. There were 3 main groups of subjects: the majority were full-time students, some were salon apprentices who attend the college as day-release students, and a small minority attended night classes only. They were at varying stages of their course. At a suitable opportunity (usually just before or after a class), the students were invited to fill in the questionnaire while supervised by TCL or the hairdressing tutors. The purpose of the survey was explained and the anonymous nature of the questionnaire emphasized both verbally and by an accompanying letter. None of the students refused to fill in a questionnaire.

Results

A total of 121 questionnaires (117 from females, 4 from males) were completed, with approximately equal numbers of questionnaires from either college. The colleges were only 15 miles apart from each other, and the methods of teaching and level of education were similar in both groups of students. The median age of the respondents was 17 (range 16–49 years). The median age at which trainee hairdressers enter vocational training or employment was 16.5 years (range 13–48.5 years). The median number of months the hairdressers had been in training or in employment was 6 months (range 1–49 months). 67% were full time students, 25% were salon apprentices, and 8% were night-class attendees. The median numbers of hair procedures performed varied according to the different student groups (Table 1).

To establish the hairdressers' definition of hand dermatitis, they were asked to select from 4 signs of hand dermatitis. The responses were: chapping (74%), redness/itching/scaling between finger webs (93%), cracks/fissures (84%), and weeping/blistering (60%).

Medical history

We enquired if the student had currently or previously suffered from the following: hand dermatitis, atopic eczema, asthma, allergic rhinitis, or nickel allergy, and if they attended a general practitioner or dermatologist for hand dermatitis. The responses are shown in Table 2.

Pre-school/pre-employment counselling

76 (63%) students were unaware that a history of childhood eczema increased the risk of developing hand dermatitis. 5% of the students did not answer this question. Of the 19 trainees who either currently or previously suffered from atopic eczema, 12 knew about the increased risk and 14 suffered from hand dermatitis.

81 (67%) students previously recalled someone discussing the risks of hand dermatitis with them (in order of decreasing frequency): their own hairdresser (44%), friends and family (30%), tutor (11%), media (6%), general practitioner or dermatologist (6%), and career counsellor (3%).

Employment

90 (74%) students stated that they had been given instructions on hand care during their hairdressing course, 28 (23%) had not and 3 did not answer. When these figures are compared to the average number of months that the students had been in training, the group of students that had been instructed had been in training for 9.5 months compared to the uninstructed group for 9 months. Thus, lack of knowledge on hand care is unlikely to be due to being in an earlier stage of training.

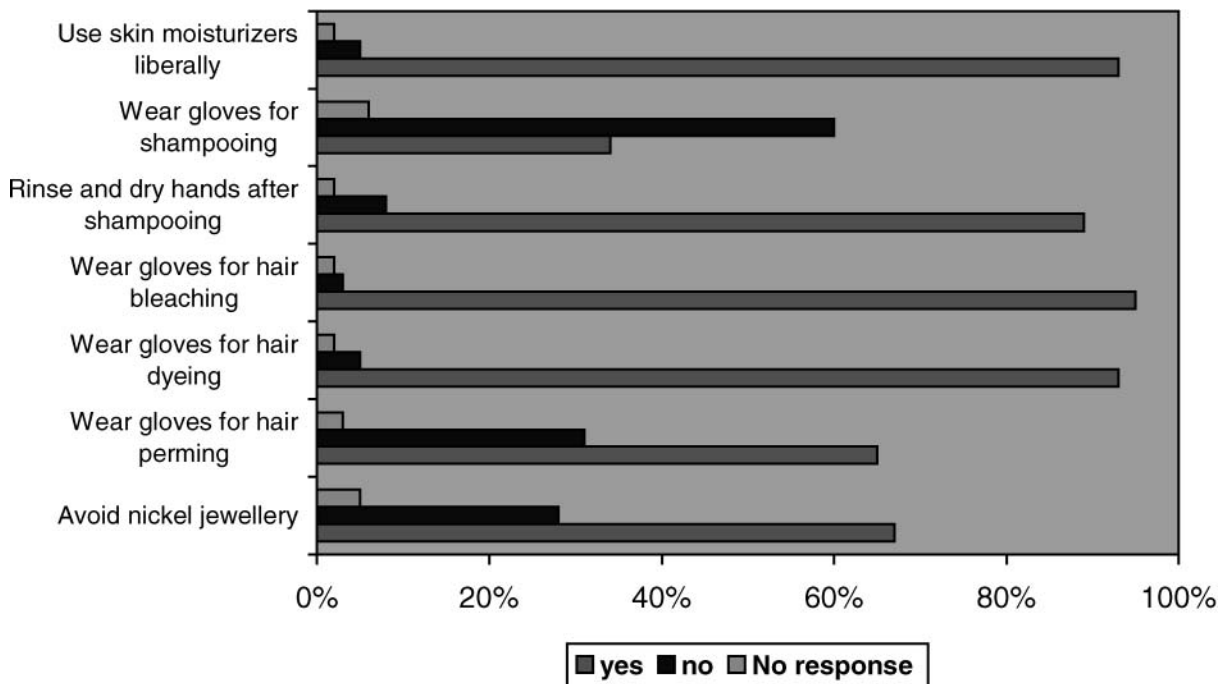


Fig. 1. Responses to 'Are you aware of the following advice for hand care?'

Hand care and hairdressing practice

6 (5%) students had lost time from work because of hand dermatitis. The number of days lost at work ranged from 2 to 15 days, including 2 students who required 8 days each of inpatient treatment.

Figure 1 shows the knowledge of the students regarding hand care, and Fig. 2 demonstrates whether this advice on hand care was translated into routine hairdressing practice. As some of the students had not yet performed more advanced procedures such as bleaching, dyeing, or perming, the figures for these procedures represent responses only from the students who had performed these techniques.

Free-text boxes were provided for the question, 'Do you feel that wearing gloves for certain hairdressing procedures hinders your work?'. 55% of the students answered this question. 44% felt that wearing gloves hindered their work, citing the reasons for the various hair procedures in Table 3. This was reflected in the low rate of glove wearing in shampooing (only 9%) and hair perming (58%)(Fig. 2).

69% of the students answered the question on the steps that may be taken to reverse the effects of hand dermatitis. Most suggested more than 1 measure, giving a total number of 113 responses. A 'no' answer was also included in our analysis. 44% of the answers were 'no', 23% 'use hand cream', 14% 'wear gloves', 10% 'seek medical advice', 9% 'rinse and dry hands thoroughly', 12% miscellaneous. None of the students mentioned avoiding nickel-containing jewellery.

Discussion

The hairdressing profession is characterized by a high turnover of workers. The high dropout rate may be due to hairdressers' personal circumstances, career changes, and health problems. Hand dermatitis may result in significant morbidity and not infrequently may necessitate a change of career. Epidemiological data of hairdressers' hand dermatitis is difficult to collate due to high turnover, low response rate, incomplete data, and selection bias. Our study design enabled a high response rate. However, response bias may be a problem and by stressing the anonymity of the study we minimized this.

In our sample of trainee hairdressers, nearly 1/5 of the trainees suffered currently from hand dermatitis. This concurs with other European studies (6, 7). A 1993 study involving 859 German apprentice hairdressers found that 23% suffered slight skin changes and 15% frank eczema (5). A Dutch group interviewed 1869 dropouts from hairdressing schools and 26% stated hand dermatitis as the reason for leaving (7). A German cohort study (8) followed 2352 hairdressing apprentices over 3 years. Only 1/2 the original cohort remained after 3 years, illustrating the high dropout rate during apprenticeship. Of the 1/2 that was contactable, 245 (10%) reported skin problems and 135 (6%) actually stopped training because of hand dermatitis. While the point prevalence increased over successive examinations, the incidence rate decreased, suggesting that

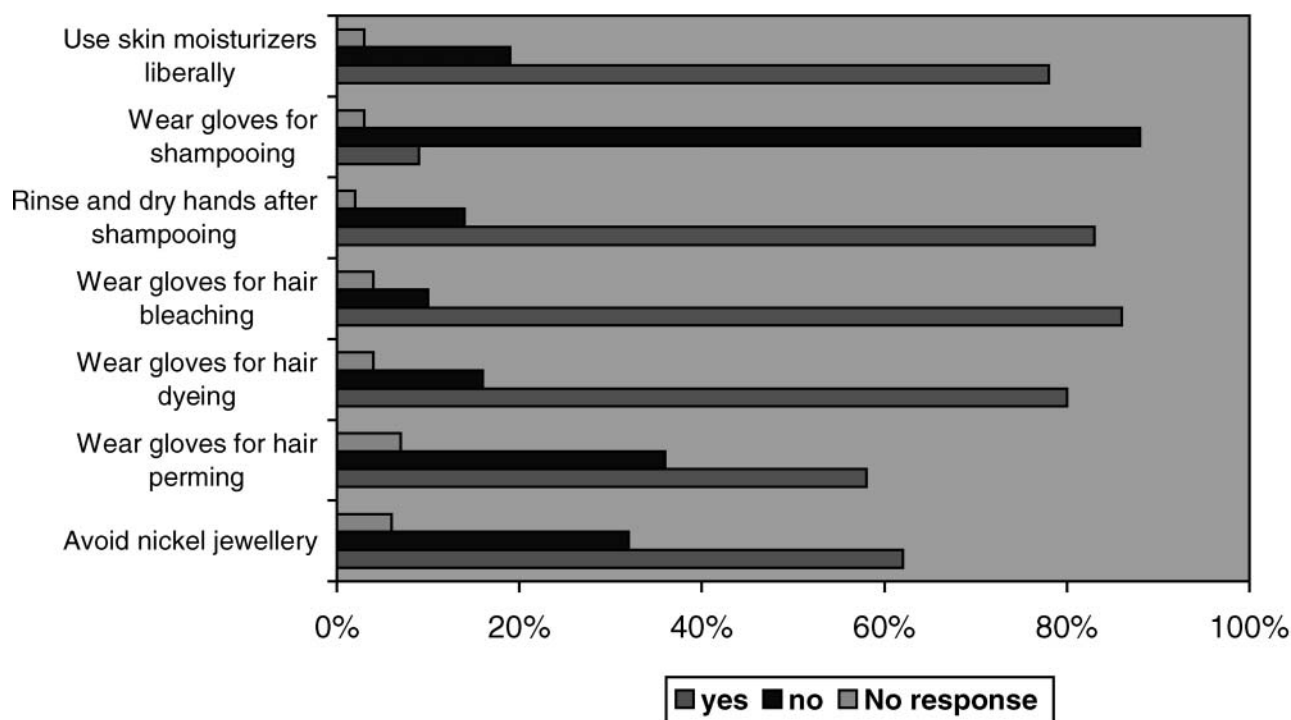


Fig. 2. Responses to 'Do you routinely follow this advice for hand care?'

the first year is particularly high risk. This is likely to be due to the amount of unprotected wet work undertaken by apprentices. It has previously been shown that wet work of >2 h per day is associated with a $2.3 \times$ risk of developing hand dermatitis (6). Salon apprentices are often responsible for much of the wet work, in particular, shampooing, washing out of hair chemicals, as well as general cleaning chores in the salon. In our sample, 40% of the salon apprentices suffered from hand dermatitis. Thus it is important that hairdressing trainees should be alert to the risk of hand dermatitis, and have good understanding of preventive measures, as there is good evidence that, with meticulous hand care and adequate treatment, early hand dermatitis can be reversed (2). In addition, a recent study suggested measuring the irritant threshold to sodium lauryl sulphate as a predictive test for nonatopic subjects at risk of developing occupational hand dermatitis (9).

Atopy is a risk factor for developing occupational hand dermatitis (10–15). In a 15-year study involving 3471 female Finnish hairdressers (12), the relative risk of hairdressers having to leave the profession compared with controls was higher if they had an atopic disease at the beginning of the study period. In particular, the relative risk was 3.5 if they had pre-employment hand eczema. The hairdressers' study of Uter *et al.* (6) found that a history of flexural eczema and hand eczema confers an increased risk of 1.7 and $2.5 \times$,

respectively, of developing hand dermatitis. In our relatively small sample, of the 19 subjects who currently/previously had suffered from atopic eczema, 14 also had hand dermatitis. In addition, 10/20 subjects with asthma had hand dermatitis, and 15/33 subjects with hay fever had hand dermatitis.

Though the role of nickel sensitization in hairdressers remains controversial (11), repeated occupational exposure to nickel in hairdressing instruments may contribute to hand dermatitis in nickel-sensitized hairdressers. Nickel allergy was found in 45% of 247 Austrian hairdressers, and 2/3 became sensitive during their apprenticeship (16). 65% of our sample of trainee hairdressers gave a history suggesting nickel allergy. This high incidence may be an overestimate as it was based on subject history only and not confirmed by patch testing.

What knowledge of hand dermatitis and its prevention is there amongst trainee hairdressers? First, only 60% considered 'weeping/blistering' to be hand dermatitis. Second, it was evident that actual prac-

Table 3. Reasons given by subjects for not wearing gloves

Hair procedure	Reasons given
Shampooing	Pulled clients' hair Cannot test water temperature Gloves do not fit
Dyeing	Gloves too slippery Rinsing colours pulled hair
Perming	Difficulty gripping/fastening perm rods

tice lagged behind knowledge, with many appreciating the need to protect hands during repetitive irritant activities as well as during exposure to potential allergens, but few actually practising glove use. Gloves were only infrequently worn in shampooing (9%), which was viewed as a low-risk procedure. However, it is likely that far more damage is done from repeated shampooing than from what they may have regarded as 'high-risk procedures' which were performed much less frequently. In addition, a high percentage of trainees did not wear gloves for 'high-risk' procedures, exposing themselves to allergens such as glyceryl thioglycolate (used in perming), *p*-phenylenediamine (dyeing), and ammonium persulfate (bleaching). These findings are similar to those in German trainee hairdressers (6). Appropriate gloves should be made easily available to encourage their use in practice. Van Der Walle (2) suggested the use of vinyl gloves as they are reasonably well fitting, do not cause traction on hair (a frequently encountered concern voiced by trainees), provide an adequate barrier to chemicals, and are economical.

In the UK, the hairdressing curriculum may include an optional section provided by the Royal Institute of Public Health. The emphasis is largely client-orientated, and includes detailed information on skin and hair structure. However, practical advice on prevention of hand dermatitis is relatively limited. Glove wearing is advised when handling hairdressing chemicals, and in shampooing only 'if the skin becomes dry and cracked'. Use of moisturizing creams is encouraged, but only 'as often as required' rather than as routine. Whilst the information was generally accurate, it was brief and lacked sufficient emphasis on the practical aspects of hand care.

Formal pre-school or pre-employment counselling is limited in the UK. Several countries have been successful in enforcing new legislation and intensifying preventive measures, which have brought about significant improvement in morbidity (17, 18). This initiative could be adopted in the UK.

In summary, hand dermatitis is an important cause of morbidity in hairdressers. Our survey showed that 17% of trainee hairdressers suffered from hand dermatitis. Glove wearing was infrequent and inadequate, particularly during shampooing. 63% trainees were unaware that a history of atopic dermatitis predisposed to hand dermatitis. Opportunities for formal pre-school and pre-employment counselling are limited. There should be greater emphasis on practical aspects of hand dermatitis prevention in the hairdressing curriculum.

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