

NOTES

A Survey of Work-Related Skin Diseases in Different Occupations in Poland

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Occupational skin disorders, in particular inflammations, dryness and erythema, in 80% of cases affect the skin of hands. The most frequent diagnosis, in over 90% of cases of occupational skin diseases, points to an irritant or allergic contact dermatitis. Our aim was to study the prevalence of self-reported skin symptoms on hands and forearms in different populations. The study was conducted on 581 healthcare workers, 61 hair stylists, 149 beauticians, 90 food services workers, 90 cleaners, 181 metal factory workers and 69 textile workers. Healthcare workers had greatest exposure. Eighty-six percent of dentists, 67% of midwives, 51% of nurses and 41% of physicians reported skin disorders. Problems with latex gloves were declared by 30% of healthcare workers. Thirty-four percent of food services workers, 24% of textile workers, 30% of metal factory workers, 21% of hair stylists and beauticians, and 64% of cleaners reported skin manifestations during the time of employment, which they thought could be work-related.

occupational skin diseases contact dermatitis prevalence of contact dermatitis

1. INTRODUCTION

In many developed countries, including European Union (EU) states, occupational skin diseases (OSDs) are the second most common occupational diseases, following musculoskeletal disorders (MSDs) [1]. Most work-related dermatoses (over 95%) are subtypes of contact dermatitis (CD) [2]. Skin contact with irritants and/or allergens is the main cause of CD. The probability and severity of a reaction depend on the type and intensity of exposure. The appearance and course of dermatoses vary depending on multiple external and internal factors. OSDs, in particular

inflammations, dryness, redness, erythema and scaling, in 80% of cases affect the skin of hands, the most common point of contact with occupational hazards. OSDs affect workers of all ages in a variety of work settings.

Sometimes these dermatoses are under-reported because their association with the workplace is not recognized, but generally CD is attributable to specific agents for occupations at increased risk [3]. Many occupations are generally known to carry a risk of skin damage. Examples are jobs with frequent immersion of hands, and skin contact with substances such as oil, grease, solvents, paints, etc.

This paper was prepared on the basis of the results of a research task carried out within the scope of the first stage of the National Programme "Improvement of safety and working conditions" partly supported in 2008–2010—within the scope of state services—by the Ministry of Labour and Social Policy. The Central Institute for Labour Protection – National Research Institute was the Programme's main co-ordinator.

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Irritant CD, a response of the skin to a variety of external stimuli, is a very common disease among hair stylists, less so among beauticians. The main causes of CD are water, irritants/allergens used in professional hair products for cleaning, permanent waving solutions, colouring, bleaching, conditioning, styling or contact with metal (nickel) in the form of scissors and styling instruments [4, 5]. Skin irritants are capable of causing cell damage if applied to the skin for sufficient time and in sufficient concentration.

Irritant skin changes are often observed in healthcare workers, physicians, nurses, midwives, dentists, laboratory technicians and others. CD is generally caused by frequent hand washing (in water), gloves, soaps, aggressive disinfectants or detergents, drugs, epoxies and resins and nickel, which is present in the metal parts of medical instruments [6, 7, 8, 9, 10, 11].

Chefs, cooks, bakers and food service workers are subject to several types of skin diseases. The main agents causing CD are foods and flour, soaps, wet work, rubber and nickel [12, 13].

Hair stylists, food handlers, cleaners and healthcare personnel are occupations involved in so-called wet work, which increases proneness to occupational irritant CD due to frequent, repetitive exposure to water (a mild irritant), extract stratum corneum lipids, leading to chapping and fissuring. Wet work has been defined as skin exposed to liquids longer than 2 h per day or very frequent washing of the hands (>20 times/day or less if the cleaning procedure is more aggressive) [1, 10].

Extended duration and frequency of exposure to wet work is the main cause of occupational CD among employees in the cleaning industry [14]. Soaps, rubber, surfactants, nickel, fragrances and beauty products are irritating agents, too.

Dermatoses are the second most common group of occupational diseases of mechanics (after hearing loss) and metal factory workers. The main causes of CD in these occupations are petroleum products, epoxies and resins, solvents, cutting oils and fluids, lubricants, coolants, preservatives, nickel, soaps, water and detergents [3, 15, 16].

Textile factory workers may experience irritant dermatitis induced by nickel, linseed oil,

appret, dyes, and fibers or dust of wool, flax and synthetic fibres [1].

Dermatologists in the UK conducted a study to examine the impact of occupational CD on the quality of life. The results showed that occupational CD induced problems associated with work, relationships, daily activities and leisure [17]. This means that the real costs of occupational CD to the community should be expressed in both human and financial terms.

To date one of the best estimates of the prevalence of work-related skin diseases comes from a survey for 2001–02. It provides an estimated prevalence of self-reported work-related skin diseases of 39000 workers for Great Britain. An estimated average of 3900 new cases of work-related skin diseases were diagnosed each year between 2000 and 2002 by dermatologists and occupational physicians through the EPI-DERM (Occupational Skin Surveillance) and OPRA (Occupational Physicians Reporting Activity) voluntary surveillance schemes [18].

OSDs are common in the population and are of interest from a public health perspective. According to the European risk observatory report EN 6 there is an urgent need to recognize the range, causes and mechanisms of occupational skin disorders and diseases, and the need to prevent them [2]. Effective prevention of skin diseases including technical solutions (hand and skin protection measures), organizational changes, substitution of hazardous substances and automatization is required to minimize exposure of the skin to hazardous agents.

The aim of our project was to estimate the scale of occupational skin diseases and disorders in different occupations in Poland.

2. SUBJECTS AND METHODS

Data were collected between January and September 2007. The study was conducted in Poland on

- 581 healthcare workers, in five hospitals;
- 181 metal factory workers in a metal plant and in two railway works;
- 91 food services workers in 52 small and middle-sized enterprises (SMEs);

- 69 textile workers in 45 SMEs;
- 210 hair stylists and beauticians in SMEs;
- 90 cleaners in SMEs.

Verbal consent from each participant was obtained.

We compiled and used a questionnaire for collecting self-reported data on assessing skin condition, partly based on the Nordic Occupational Skin Questionnaire NOSQ-2002¹ developed by a Nordic group for OSD research and prevention of hand dermatoses in practice [19]. This questionnaire, still used in projects in Nordic countries and elsewhere, recommends using self-reports on the condition of the skin of hands and/or forearms for estimating the scale of CD in populations.

So for collecting data on the prevalence of OSDs a questionnaire based on workers' self-reported diagnoses, seemed to be a good tool.

Our questionnaire was a shorter, modified version of NOSQ. The information collected from self-reported estimation, primarily depends on the definition of signs or symptoms of a disease and these were specified.

Survey questions:

1. Occupation/workplace
2. Do you have skin problems on hands or forearms: YES/NO
3. If YES, point the manifestation: inflammations, dryness, redness, erythema, itching, scaling, others
4. Do you know potential irritant factors present at the workplace?
5. Do you use latex gloves?
6. Do you apply skin protection measures—barrier creams/gels before work?

The obtained data were a basis for a study on the prevalence of self-reported symptoms on hands and forearms of skin diseases in populations representing different occupations.

3. RESULTS

Figures 1–7 illustrate the results of investigating the prevalence of OSDs on hands and forearms in the healthcare sector, metal industry, food services, textile factories, hair stylists and beauticians, and cleaners.

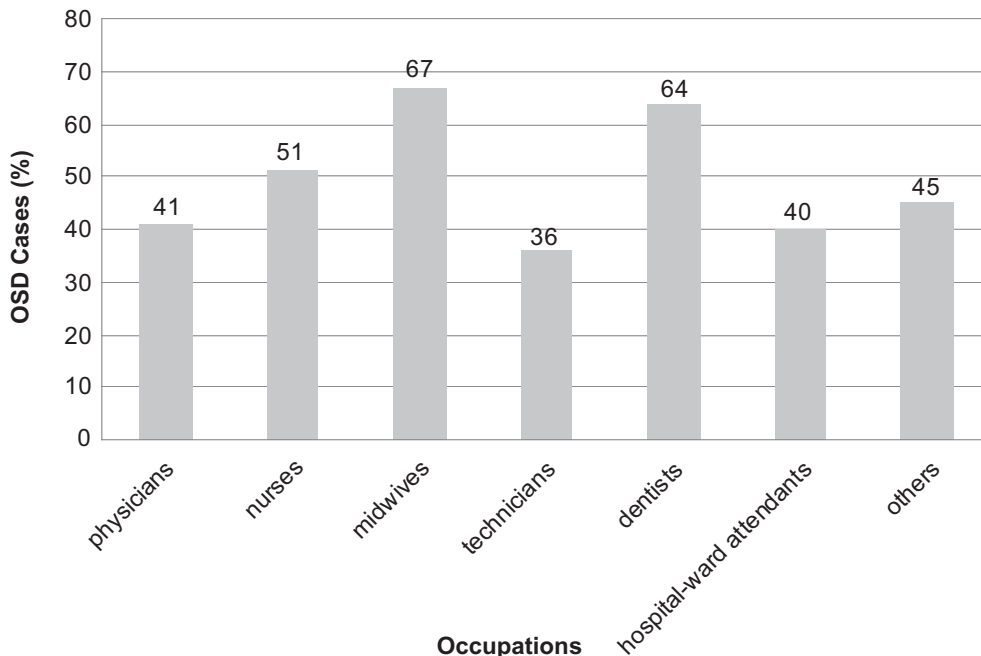


Figure 1. Prevalence of occupational skin diseases (OSDs) among healthcare workers.

¹ Retrieved December 9, 2010, from: http://www.norden.org/en/publications/publications/2002-518/at_download/publicationfile

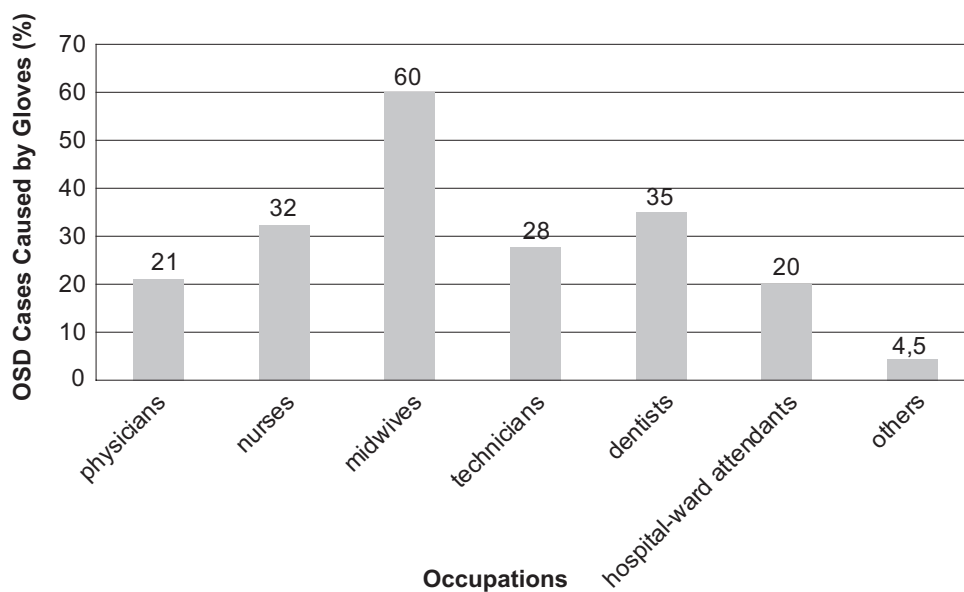


Figure 2. Prevalence of occupational skin diseases (OSDs) caused by protective gloves among health service workers.

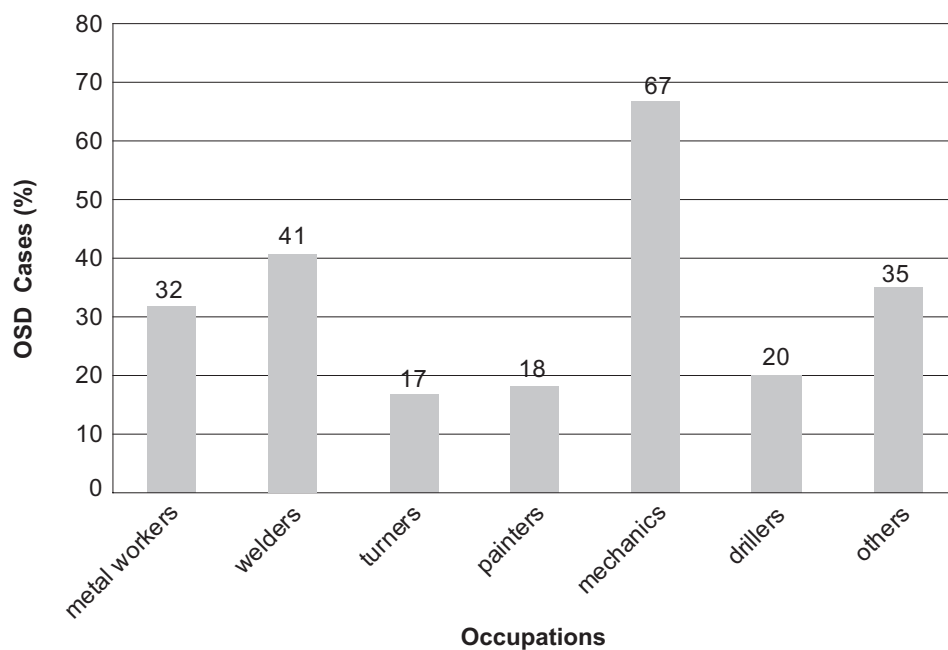


Figure 3. Prevalence of occupational skin diseases (OSDs) among metal factory workers.

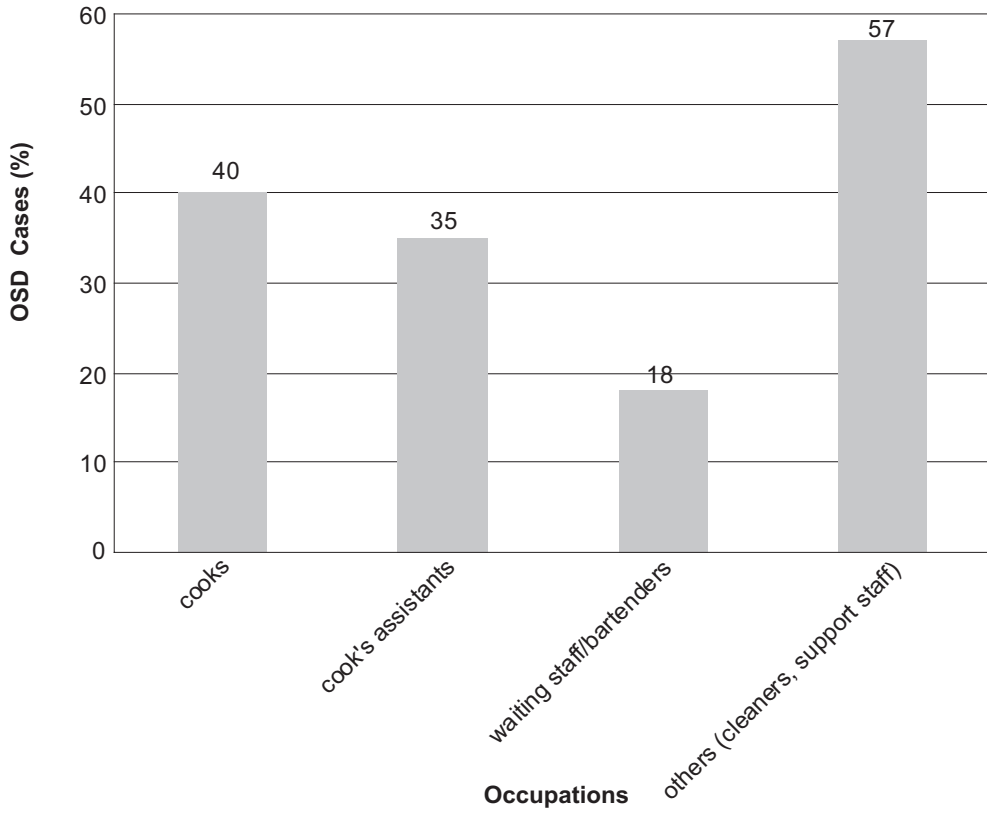


Figure 4. Prevalence of occupational skin diseases (OSDs) among food service workers.

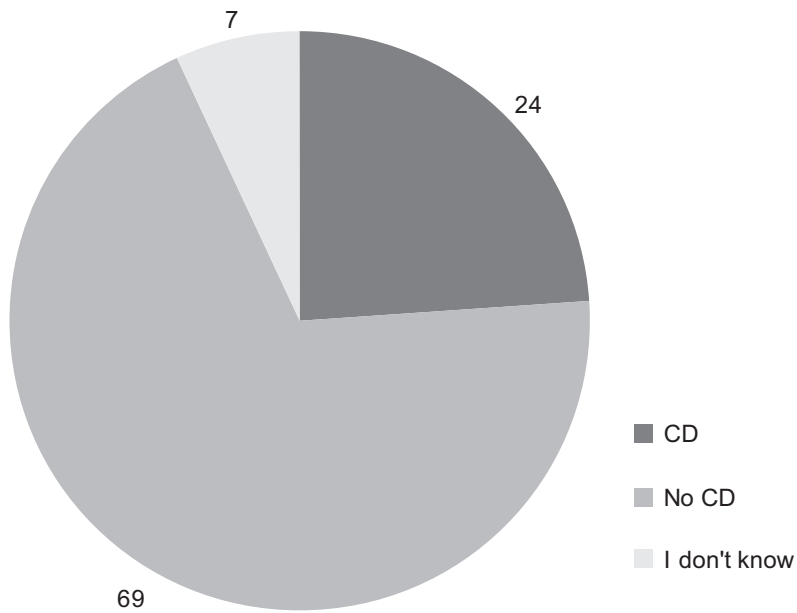


Figure 5. Work-related cases of contact dermatitis (CD) among textile factory workers.

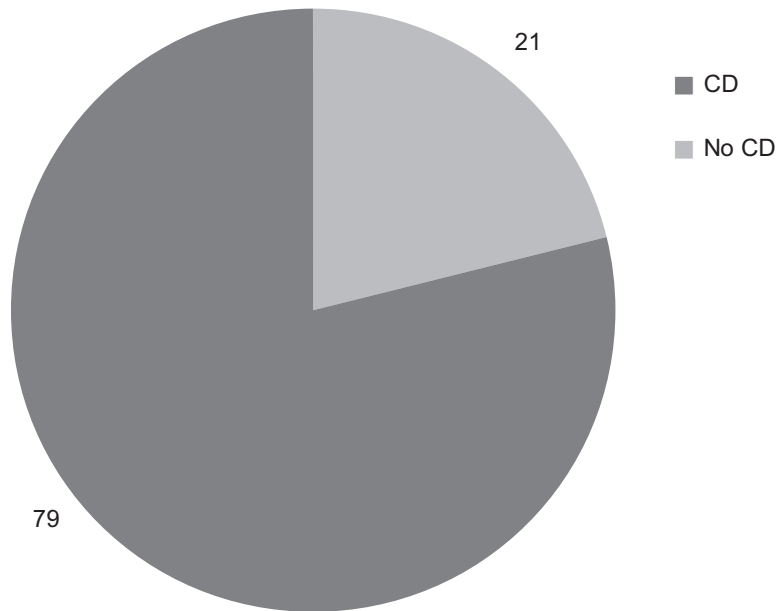


Figure 6. Work-related cases of contact dermatitis (CD) among hair stylists and beauticians.

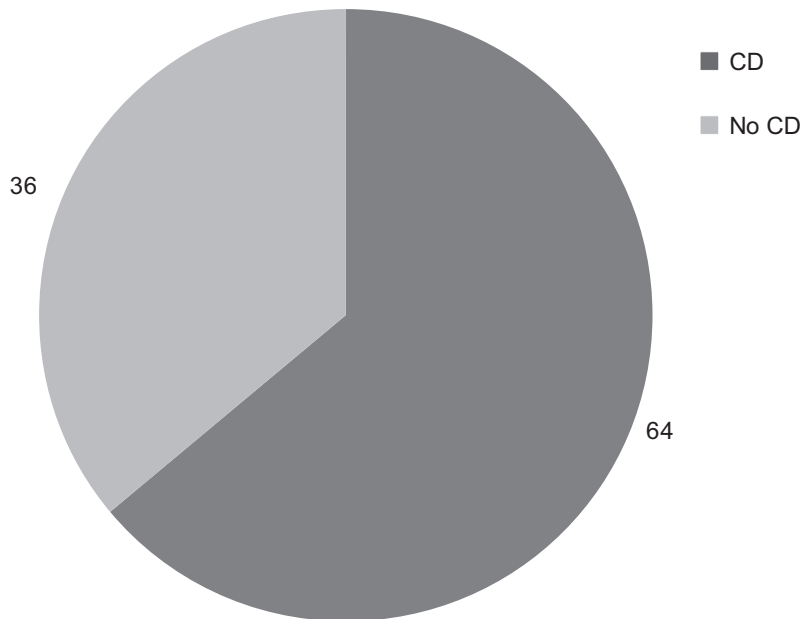


Figure 7. Work-related cases of contact dermatitis (CD) among cleaners.

Information in the questionnaires showed that in the healthcare sector the average prevalence of hand CD was ~40% (238 of 581 respondents). We found the prevalence of CD caused by latex gloves to be from 60% of cases for midwives to 20% for hospital-ward attendants. Wet work and gloves were the irritant agents most often reported. According to this survey mechanics,

welders and metal-workers were occupations in the metal industry, for which the prevalence of OSDs exceeded 30%. Cutting oil, lubricants, petroleum products and solvents were listed as irritants. About 40% of food service workers reported OSDs. Sixty-four percent of cleaners reported work-related skin problems, which were induced by cleaning agents and wet

work. Among textile factory workers and, unexpectedly, hair stylists and beauticians over 20% of respondents reported OSDs. Wet work and hairdressing chemicals were the main agents that caused CD.

4. DISCUSSION AND CONCLUSIONS

There are few available data about assessing prevalence of skin diseases in different occupations in Poland. We expected the problem of OSDs to be rather neglected especially since in Poland dermatoses are the fifth most common occupational disease. Our survey showed that healthcare workers were the most exposed occupational group. Sixty-seven percent of midwives, 64% of dentists, 51% of nurses and 41% of physicians reported skin disorders. About 30% of healthcare workers reported problems with latex gloves. About 30% of metal factory workers, 40% of food services workers, 24% of textile factory workers, 21% of hair stylists and beauticians and 64% of cleaners reported skin manifestations during their time of employment, which they thought could be work-related.

Dryness, redness, scaling and itching were the main skin symptoms of OSDs. Only in a few cases did the workers mention that they used skin protection measures, creams they thought were barrier creams.

This survey proved that working conditions caused OSDs in workers in different occupations on a considerable scale. Especially since according to NOSQ experts underestimation of the data obtained from the questionnaires can be expected.

Skin can be protected at exposed workplaces if protection measures and programmes are applied sufficiently and consistently. This is sometimes difficult. Various studies have shown that success in preventing OSDs is possible with intervention measures, which include training in skin protection. However, knowledge alone does not automatically lead to a change in attitudes, and this in turn may not automatically lead to a change in behaviour. Generating health protection behaviour is in fact a very complex

process. Typical goals, contents and methods should be given for practical training which would allow head, heart and hand learning [20].

To appreciate the problem that skin diseases affect people of all ages and in all areas of life various prevention campaigns took place in the EU in 2007–2008. The objective of “It’s in your hands” in the UK was to significantly reduce the incidence of work-related dermatitis. A healthy-skin campaign “Your skin. The most important 2 m² in your life” was organized in Germany, France, Spain and Italy. Their goal was to reach the greatest possible number of people and to motivate them to give greater consideration to how they treat their skin. Pre- and post-campaign surveys in the wider population on skin protection were organized, too.

We would like to raise interest in work-related dermatitis and to initiate a comprehensive analysis of the prevalence of OSDs in Poland by dermatologists and occupational physicians. Medical diagnosis and confirmation of occupational skin disorders and diseases require assessment by healthcare professionals. It is necessary, as part of early detection, to carry out regular skin checks to identify cases of dermatitis and ensure that these controls are working.

The main aim should be to prevent the occurrence of OSDs on the basis of accurate risk assessment, and to use and maintain appropriate control measures, information, instruction and training in the form of, e.g., a programme promoting skin protection. Effective prevention of skin diseases requires a combination of technical methods (gloves and skin protection measures, organizational changes), substitution of substances with skin-damaging properties and automatization to minimize the skin’s exposure to risk factors. These activities will result in a decrease in psychological and financial losses caused by treatment, absenteeism and disability pensions.

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