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CLINICAL REPORT

Self-reported Dermatological Problems and Preferences for Health: An Epidemiological Survey

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Patient preferences for health can be assessed and expressed in quantitative terms known as health state utilities. In this epidemiological study, we demonstrate the importance of dermatological problems for health state utilities. A cross-sectional survey including 5,404 individuals aged 20–84 years was conducted in the County of Uppland, Sweden. Information on dermatological problems and use of prescription-only topical drugs was obtained by self-report. Dermatological problems were reported by 20.5%. A rating scale used to assess utilities showed that persons reporting dermatological problems had lower health state utilities than those not reporting such problems ($p < 0.001$). Persons using prescription-only topical drugs had lower health state utilities than others with dermatological problems. Dermatological problems had an independent and statistically significant effect on health state utilities when age, sex, somatic and psychiatric co-morbidity, and pain were included in the multivariate analysis. It is shown that skin disorders are a considerable problem in the population and results in a significant decrease in health state utilities. ***Key words: dermatology; epidemiology; rating scale; skin disorders; utilities.***

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Skin problems are common in the population and comprise a wide variety of diagnosis ranging from purely cosmetic conditions to tumours and genetic or inflammatory skin diseases (1–3). Many of the diseases seen in dermatology are chronic and lifelong. Although a substantial proportion of the population suffer from skin conditions, we still have little information on how these affect the everyday lives of the individuals concerned (1, 4).

During recent years there has been increased interest in the quality of life of various populations. Instruments have been developed to evaluate physical, mental and social aspects of health-related quality of life (HRQoL) (5–9). However, few epidemiological studies have been carried out on the effects of dermatological problems on HRQoL. In 1995, an epidemiological survey was conducted on a sample of the general population in the county of Uppland, Sweden, aiming to study different aspects of health, including the use of health services, use of drugs and HRQoL. Results from this survey showed that skin disorders constitute a substantial problem in the population and cause significant decreases in HRQoL (10).

HRQoL is measured with multidimensional instruments/questionnaires. During recent decades there has also been an increased interest in one-dimensional measurements of quality of life, i.e. health state utilities. Utilities are quantitative expressions of preference for potential health status (11). They usually fall on a scale between 0 (typically representing death) and 1 (typically representing full health), and can be used in decision-making. An understanding of health state utilities and cost-utility analyses is important when setting priorities in health care services. Health state utilities have been analysed in a study of patients with different levels of severity of psoriasis selected from a medical centre (11), and in a study on patients with psoriasis and atopic eczema (9). Health state utilities have also been used to evaluate dermatological problems in clinical trials (12). However, studies using these methods on dermatological problems in the general population are few.

The main aim of the present study was to analyse the health state utilities of persons with dermatological problems from an epidemiological perspective. A second aim was to study the importance of dermatological problems on health state utilities in relation to somatic and psychiatric co-morbidity and pain. A third aim was to analyse differences in health state utilities among persons with dermatological problems by age and gender and possible differences in health state utilities between users of prescription-only topical drugs and those not using prescription drugs.

PARTICIPANTS AND METHODS

This study is based on a postal questionnaire sent to a random sample of 8,000 persons aged between 20 and 84 years from the population registry of the county of Uppland, Sweden, in October–December 1995. Uppland County

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comprises a university city, smaller towns and agricultural areas. It had a population of approximately 290,000 inhabitants in 1995 and 5,404 (68%) answered the questionnaire. The majority of non-respondents did not give any reason for not responding; 132 stated that they did not want to participate ($n=132$). A comparison between the study population and the total population of Uppsala County showed that the distribution of gender, age, marital status and educational level was similar (13).

The Swedish Survey of Living Conditions was used to determine the questions on drug use, health care utilization, diseases and medical complaints, recall periods and socio-demographic variables. This is a validated survey allowing comparability between studies (14–16). Information on medical problems was obtained by self-report of certain chronic diseases and medical problems experienced during the 2 weeks prior to filling out the questionnaire. The question was phrased: "Have you today any of the following diseases or complaints?" followed by a list of diseases including skin problems (such as eczema, psoriasis). This deviates from the question used in the Swedish Survey of Living Conditions, which is: "Do you suffer from eczema or skin rash". The question on medications used was phrased: "Have you, during the last two weeks, used any of the following medicines?", followed by a list of prescription-only drugs, over-the-counter (OTC) drugs, and herbal remedies. Persons reporting dermatological problems and using prescription-only topical drugs were identified. Hypertension and heart disease, diabetes, ulcer, asthma and allergy were studied as somatic co-morbidity, and depression, anxiety and sleeping problems as psychiatric co-morbidity. Pain (backache, ache in arms and legs and shoulder ache) was also studied.

Health state utilities were assessed with the rating scale (RS), which is a vertically calibrated visual-analogue scale with labelled anchors of death (at 0) and full health (at 1). The respondents were asked to mark with an arrow the point on the scale that they felt best illustrated their current health state and the answers were converted to health state utilities from zero to one. Of those who answered the questionnaire, 225 persons (4.4%) did not answer the RS question.

The statistical analyses were carried out using the Statistical Analysis System (SAS) statistics program (17). In the linear regression analysis, the algorithm of the PROC REG procedure in SAS was used. Utilities for various medical problems were analysed controlling for age and sex. In the linear regression analyses the age group 55–64 years was taken as the reference group. In analysing the importance of dermatological problems the linear regression analyses were carried out in three steps. In the first step (Model 1), the importance of dermatological problems was analysed along with gender and age. In the second step (Model 2), somatic morbidity was added to Model 1. Finally, in a third step (Model 3), psychiatric morbidity and pain were added to Model 2. Linear regression analyses were also used to analyse differences in health state utilities between those using prescription-only topical drugs, those with dermatological problems who were not using prescription-only topical drugs and others in the population.

RESULTS

Dermatological problems were reported by 20.5% of the population and tended to be more common among women than among men, 23.3% and 17.3%, respectively (Table I). A prescription-only topical drug had been used by 7.1% of the population during the 2 weeks prior to answering the questionnaire. Use of prescription-only topical drugs was more common among women than among men (8.9% versus 5.0%).

Table I. *Number of persons in the study population and percentage of self-reported dermatological problems (SRDP) in relation to age and gender*

	Men		Women		Total	
Age	*n*	% SRDP	*n*	% SRDP	*n*	% SRDP
20–34 years	710	19.3	955	27.5	1665	24.0
35–44 years	494	16.2	545	23.5	1039	20.0
45–54 years	543	16.2	583	19.4	1126	17.9
55–64 years	339	18.3	337	20.2	676	19.2
64–75 years	256	15.6	303	21.1	559	18.6
75–84 years	135	16.3	204	21.1	339	19.1
Total	2477	17.3	2927	23.3	5404	20.5

The presence of self-reported dermatological problems was associated with a decrease in health state utilities. Persons with dermatological problems reported significantly lower health state utilities (0.807) than those not reporting such problems (0.836) ($p<0.001$) (Table II). The decrease in health state utilities associated with dermatological problems was significant for both men and women ($p<0.001$). The decrease in health state utilities associated with dermatological problems was also apparent when analysed according to age.

Table III gives health state utilities for various medical problems in the study population. The lowest utilities were found for persons reporting depression (0.647). In the linear regression analysis, dermatological problems scored 0.813. The analysis of persons using prescription drugs for their dermatological problems resulted in a utility of 0.793.

The results of the linear regression analyses regarding the impact of dermatological problems showed that, when controlling for age and sex, persons with dermatological problems report lower utilities ($p<0.001$)

Table II. *Mean utilities (Rating Scale) among persons with or without self-reported dermatological problems (SRDP), by age and gender*

	Men SRDP		Women SRDP		Total SRDP	
Age	Yes	No	Yes	No	Yes	No
20–34 years	0.863	0.875	0.843	0.856	0.850	0.865
35–44 years	0.841	0.856	0.807	0.856*	0.820	0.851**
45–54 years	0.824	0.855	0.811	0.850*	0.817	0.852**
55–64 years	0.794	0.828	0.760	0.801*	0.776	0.817*
64–75 years	0.730	0.802*	0.719	0.764	0.724	0.783**
75–84 years	0.695	0.716	0.591	0.687*	0.629	0.699*
Total	0.821	0.845**	0.798	0.828***	0.807	0.836***

*$p<0.05$, **$p<0.01$, ***$p<0.001$.

Table III. *Health state utilities for persons reporting various medical problems. Results from linear regression analyses of data from a population living in the county of Uppland, Sweden, controlling for age and sex (55–64 years used as reference group)*

Medical problems	Utilities*
Allergy	0.814
Anxiety	0.714
Asthma	0.779
Back pain	0.774
Depression	0.647
Diabetes	0.727
Dermatological problems	0.813
Dermatological problems, prescription drugs	0.793
Headache	0.745
Sleeping problems	0.738
Gastric ulcer	0.736

*Rating scale: visual analogue scale with labelled anchors of death (at 0) and full health (at 1).

compared to persons not having dermatological problems (Model 1). When somatic morbidity was included in the regression analysis, the impact of dermatological problems on health state utilities was statistically significant ($p<0.001$). When psychiatric morbidity and pain were added to the model, the importance of dermatological problems was smaller but still statistically significant ($p<0.01$).

The results of the linear regression analyses regarding the impact on health state utilities of using topical drugs showed that, when controlling for age and sex, persons with dermatological problems who did not use prescription drugs scored lower on utilities than persons without such problems ($p<0.01$), while persons who used prescription-only topical drugs scored even lower ($p<0.001$) (Model 1). These differences were statistically significant also when somatic morbidity was added to the model ($p<0.01$ and $p<0.001$, respectively). When psychiatric problems and pain were added to the model, the corresponding differences were still significant for the group not using prescription drugs ($p<0.05$), but not for those using prescription-only topical drugs.

DISCUSSION

In this study we found that dermatological problems are associated with a decrease in health state utilities. In an earlier study on dermatological problems and health-related quality of life (HRQoL) using the Short Form-36 (SF-36) instrument, we found that dermatological problems were associated with a decrease in all eight dimensions analysed: physical function, role limitation because of physical health, bodily pain, general health perceptions, vitality, social functioning, role limitation because of emotional health problems and mental health (10).

In this study, analysis of health state utilities indicated that dermatological problems were strongly associated with psychiatric problems. A high prevalence (25.2%) of psychiatric co-morbidity was previously demonstrated in one study in dermatological outpatients, particularly among patients with acne, pruritus, urticaria, alopecia and herpes virus (18). Similar results have been seen in other studies (19–21). We also found that dermatological problems were still statistically significantly associated with a decrease in health state utilities after controlling for psychiatric co-morbidity.

The study also shows that a large proportion of the population reported dermatological problems and use of topical dermatological drugs.

The prevalence or incidence of skin diseases in the population is known only to a minor extent (2). In a community-based study from England (22), the prevalence of any form of skin disorder was reported to be 55%, and that 22.5% needed medical care. In a Swedish population-based survey, skin symptoms were reported by 25% of the participants (females 27%, males 23%) (23). In 1967, Hellgren (3) presented population-based prevalence data for common skin diseases. More recent studies (cf. 10) have focused on hand eczema, atopic dermatitis, psoriasis, basal cell carcinoma and leg ulcers. A national Swedish population survey including participants aged 16–64 years was performed in 1996/97. Of these, 17% reported eczema or skin rashes (14% among men and 19% among women) (24). Considering the data in these publications, it is plausible that the prevalence estimates of dermatological problems obtained in the present questionnaire to a major extent represent true dermatological disease.

We have presented results from a cross-sectional, observational study. Thus, causal interpretations are not warranted. The strengths of our study are the epidemiological approach, self-reported health state utilities and the diversity and number of persons included in the study rather than the depth of the assessment of differences and severity of skin diseases. Health state utilities were studied for the group with skin problems as a whole. Although quite a few individuals with less severe skin problems must have been included in the group, a decrease in health state utilities associated with skin problems was seen. Any specific health state utility value must be interpreted in a context of values obtained for other diseases, variations in the severity of a disease (9, 11) or values obtained before and after an intervention, e.g. medical treatment. For the present studies, the reported utilities are presented in Table III for comparison. It is important to analyse health state utilities in relation to type and severity of the skin disease in further epidemiological studies. In a study including patients with psoriasis who were selected from a medical centre,

it was shown that health state utilities decreased with severity of the psoriasis (11). Among patients with psoriasis or atopic eczema, Lundberg et al. (9) found the same tendency with lower utilities when the skin disease was associated with other medical problems. Our finding that those using prescription-only topical dermatological drugs had lower estimates of health state utilities is also a reflection of the differences in severity and diagnoses among those reporting skin problems.

Utilities can be derived using techniques such as standard gamble (SG), time trade-off (TTO) or a rating scale (RS) (25). RS is considered by some as more sensitive and more accurate in assessing the impact of new interventions for certain diseases (26), as is particularly evident in the study of patients with psoriasis (11). RS was used in this study. Studies have shown that different methods of measuring health state utilities yield different results. RS has been shown to give lower health state utilities than seen with TTO or SG (9, 11, 27–32). This is not surprising considering the technical differences between the utilities, as both the response method (scaling versus choice) and the framing of the questions (certainty versus uncertainty) vary between methods (25). However, it has also been pointed out that RS has a weaker theoretical foundation than TTO and SG (33) and that responses do not have the necessary cardinal scale properties (34). Problems with poor sensitivity of the instruments have led to the development of disease-specific techniques for measuring health state utilities for certain medical problems (35).

In conclusion, the study shows that skin disorders are a considerable problem in the Swedish population and that they cause a significant decrease in health state utilities. The results of this study emphasize the need for further epidemiological studies analysing health state utilities in relation to type and severity of the skin disease.

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