Burden of skin disease and risk factors: where next?

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Disability-adjusted life years (DALYs)

DALYs = The sum of the Years of Life Lost (YLL) + The Years Lost due to Disability (YLD)

where:
YLL = number of deaths x standard life expectancy at age of death in years and
YLD = number of prevalent cases x disability weight
DALYs versus QALYs

Disability weighting | Utility | Health state
0 | 1.00 | Perfect
0.33 | 0.67 | Disease

0 | 1.00 | Death
1.00 | 0 | Life years

DALYs

QALYs
Time-trade off

At the point of indifference, \( \frac{X}{T} \times 0.6 \) is the disability weight for disease B.
Disability-adjusted life years by cause, S’pore 2010*

- Cardiovascular Disease, 19.8%
- Malignant neoplasms, 18.9%
- Neurological, Vision & Hearing Disorder, 14.0%
- Mental Disorders, 6.9%
- Musculoskeletal disease, 5.6%
- Chronic Respiratory Dis., 4.4%
- Unintentional Injuries, 3.3%
- Respiratory Infections, 3.0%
- Genitourinary Diseases, 3.1%
- Infection & Parasitic Dis., 2.1%
- Intentional Injuries, 2.0%
- Digestive Diseases, 1.9%
- Other, 1.2%
- Perinatal Conditions, 0.7%
- Congenital Abnormalities, 1.0%
- Oral Disease, 0.7%
- Skin Disease, 1.1%

*) Singapore Burden of Disease Study 2010, Epidemiology & Disease Control Division, Ministry of Health, Singapore
What disability weights should capture – examples of PRO:s in studies on skin diseases

- Stigma
- PAIN
- Sleep
- ADL
- Itching & Scratching
- Coping strategies
- Psychological distress
- Embarrassment
- Fearfulness - Anxiety
- Social interaction
- Modified Diets
- STRESS
- Psychological distress
- Social development
- Frustration
- Dependency
- Careers' QoL
- Social interaction
- Anger
- Limitations to sport and hobbies
- Psychosocial difficulties
Children’s Life Quality Index (CLQI)
Scores for 379 with chronic skin disease and 161 with other chronic disease (Beattie & Lewis-Jones, 2006)
Cost of Skin Disease, US 2004, $ billions

Health Care Costs

- OTC Products, $2.67
- Prescription Drugs, $6.03
- Hospital inpatient, $8.35
- Hospital OPD, $0.99
- Hospital ER, $0.61
- Office Visits, $7.89

Productivity losses

- Lost future earning (due to death), $6.1
- Number of lost workdays, $1.9
- Restricted activity days, $1.2
- Caregiver lost workdays, $1.0

## Alternatives of describing a disease burden

<table>
<thead>
<tr>
<th>Alt.</th>
<th>Costs</th>
<th>Outcomes measure</th>
<th>Advantage / Disadvantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>-</td>
<td>DALY’s</td>
<td>Different diseases can easily be compared / Tied to a certain preference</td>
</tr>
<tr>
<td>2.</td>
<td>Direct, indirect and intangible costs</td>
<td>-</td>
<td>Different diseases can easily be compared / Tied to a certain preference</td>
</tr>
<tr>
<td>3.</td>
<td>Direct and indirect costs</td>
<td>Impact on health-related quality of life</td>
<td>Transparent and not tied to a certain preference / Difficult to compare</td>
</tr>
</tbody>
</table>

**Preferred choice**
Where next?

We would be able to make decisions on the choice of therapy from a more holistic perspective that include cost-consequences for a societal perspective and the quality of life of patients and their careers.

- Promote a patient-centered care and get more informed therapy decisions
- Support the development of guidelines
- A better optimization of resources from a broader perspective
- Useful tool prioritization and planning
- An economic framework for program evaluation
Recipe for a happy marriage

Knowledge of what’s clinically possible and scientific opportunities (with information on costs)

Information on disease burden with the attached costs