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Targeted Literature Review on the Economic and Quality of Life Burden Caused By Acne



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OBJECTIVE

To analyze the economic and humanistic burden of acne in US and EU5, and to identify critical gaps.

INTRODUCTION

- Acne, a mild to severe common chronic inflammatory skin disorder.¹
- Progressive treatment: topical retinoids, benzoyl peroxide & antibiotics \rightarrow systemic antibiotics \rightarrow oral isotretinoin.^{2,3}
- Global prevalence & incidence (2019): 231 & 117 annual million cases.⁴
- Age-standardized prevalence (2019): 30.4/1,000 (USA) and 55.8/1,000 (EU5).⁴
- Highest incidence in adolescents and young adults (70% between 10 and 29 yo) in USA.⁵
- 1.3 times more prevalent in females than in males.⁶
- Frequent presence of psychological comorbidities and significant impact on the quality of life b profound quality of life (QoL) impact & substantial economic burden.

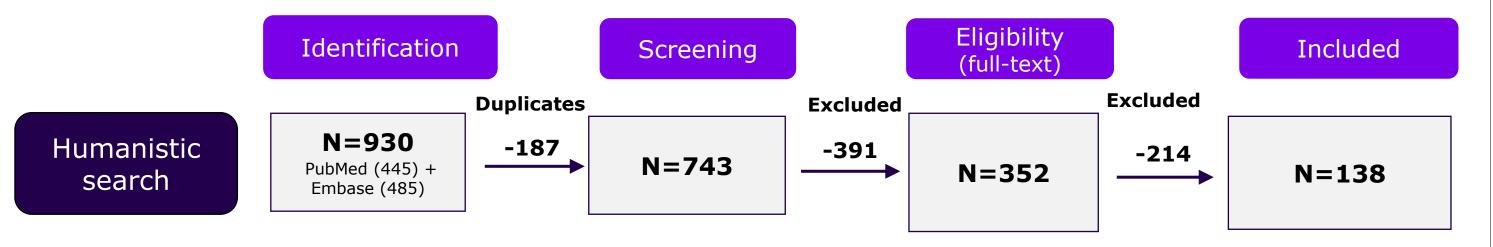
METHODS

- Two targeted search strategies (22nd December 2022 in PubMed and Embase) over the last 10 years.
- Search strings related to the burden of acne as MeSH/Emtree terms (+ related terms): "acne vulgaris", "economics", "quality of life", "patient reported outcome" (PRO).
- Limits: English-written articles on US and/or EU5 acne.
- Results stratified by age, gender and severity level when possible.
- Economic outcomes of interest: direct medical costs, indirect costs, productivity losses, resources, economic model.
- Humanistic outcomes of interest: QoL, PROs, utilities, psychosocial (PS) aspects.

RESULTS

QoL & PS burden

Figure 1a: PRISMA diagram for QoL & PS search



Characteristics of the studies identified with the economic TLR

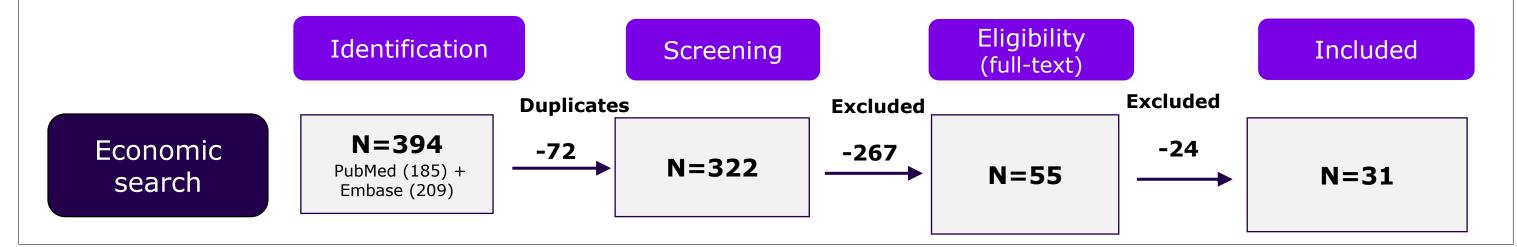
- Majority of the 138 records identified = full text of observational studies conducted in the US.
- Significant amount of publications on the QoL of acne patients.

Key findings from studies identified

- Disability-adjusted life years (DALYs): Reported DALYs are consistently higher in EU5 than in USA (Figure 2).⁷
- No gold standard tool to measure QoL of patients with acne (Figure 3).
- One study in EU (13 countries) reported patients with acne had significant higher anxiety and depression than controls: 40.6% very concerned about their skin disease and 12.3% had suicidal ideation.⁸
- Medication adherence to current treatment options is not satisfactory (Figure 4).⁹ Nonadherence can result in suboptimal treatment outcomes and increased psychological

Economic burden

Figure 1b: PRISMA diagram for economic search



Characteristics of the studies identified with the economic TLR

- Majority of the 31 records identified: observational studies conducted in the US.
- Main outcomes reported: direct costs, specifically drug acquisition costs (Figure 5).

Key findings from studies identified

- American Academy of Dermatology reported US global economic burden of acne (2013): ~ \$1.2 billion per year (including ~ 850 million of direct costs and ~ \$400 million in lost productivity for patients and caregivers).¹¹
- A review of acne global burden acknowledges acne as "significant burden on healthcare systems and economies": more than 11 million acne treatment prescriptions per year in US.¹²

Gaps

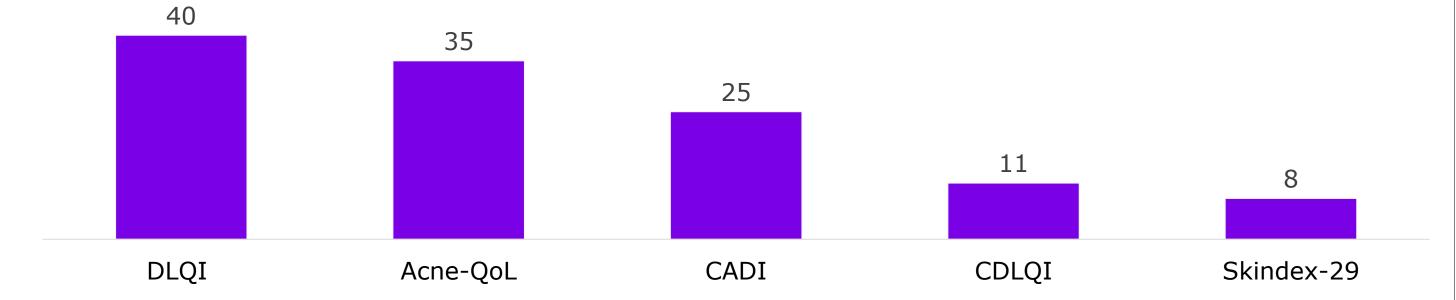
distress for patients.¹⁰

Gaps:

- Scarce real-world evidence on how acne affects psychological well-being.
- Lack of objective measurement in PRO and QoL evaluation; standardized use could improve comparability of research findings.

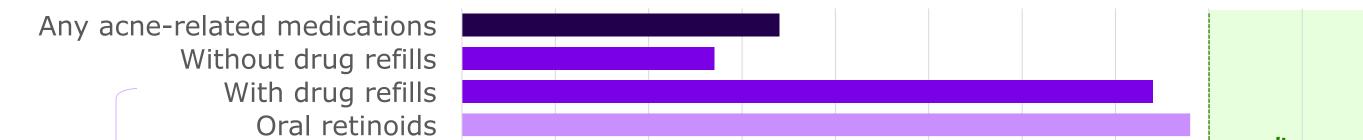
Figure 2: Acne burden of disease on different countries (2019) 82.6 85.6 92.3 DALYs Per 100,000 All ages



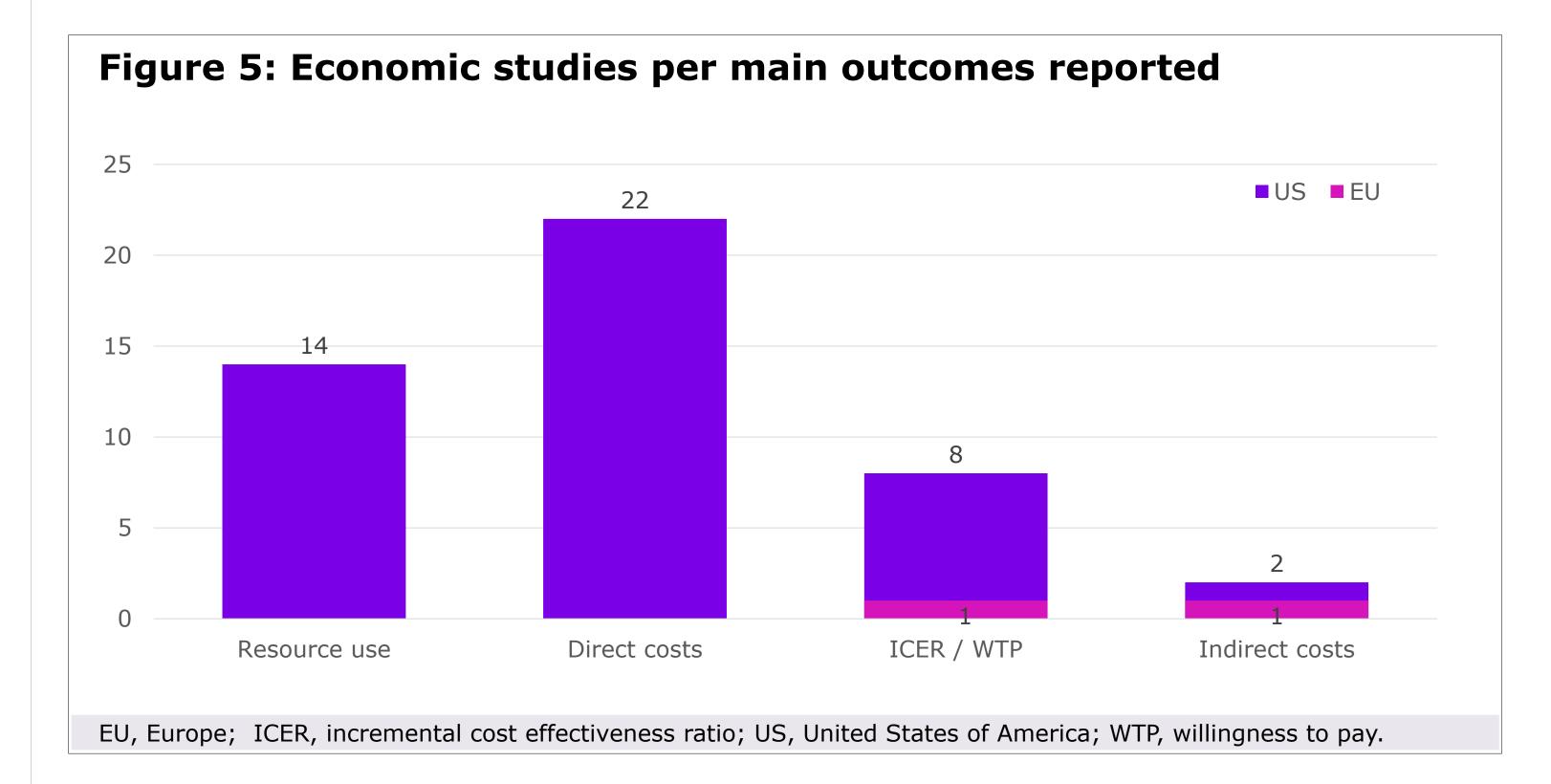


Acne-QoL, Acne-Specific Quality of Life; CADI, Children's Acne Dermatology Index; CDLQI, Children's Dermatology Life Quality Index; DLQI, Dermatology Life Quality Index

Figure 4: Mean medication possession ratio (n= 24,438)

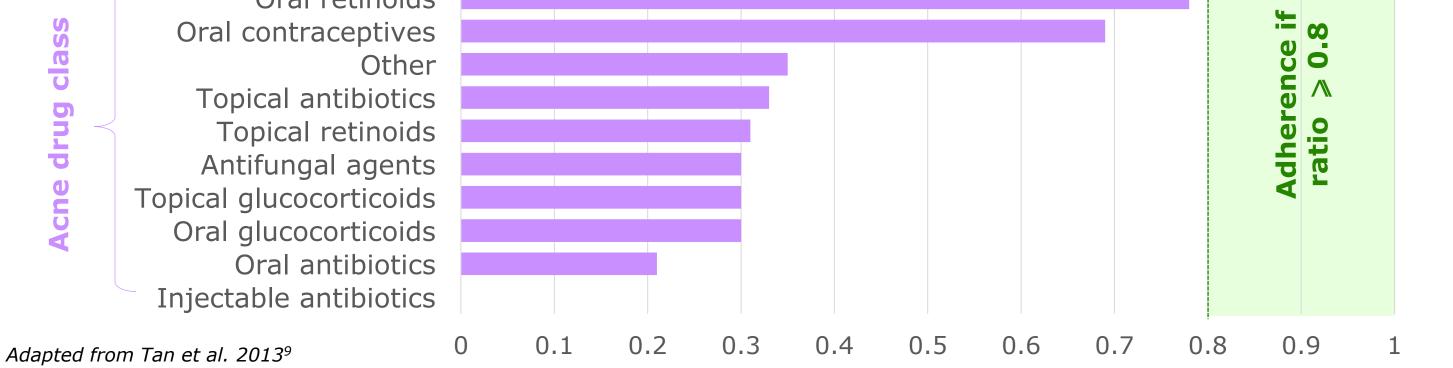


 Data found not reported by severity, indirect are rarely mentioned and no HTA submission on acne found.



DISCUSSION

- Searches identified:
 - Limited amount of literature especially for the EU5 economic burden,



CONCLUSION

- Insufficient regional data on acne's economic and QoL impacts,
- Absence of standardized objective QoL measurements.

Further research needed

 Despite current treatments available, an unmet need for cost-effective treatments persists as patients still have a poor QoL with significant psychosocial impact and acne represents an economic burden for the society.

⇒ Therapeutic new treatment option which could avoid the issue of adherence, reduce the societal economic burden and retain/maintain patients' QoL is needed.

Acne imposes a significant economic and QoL burden on patients, healthcare systems, and societies. However, knowledge gaps persist and standardized tools to measure its impact are needed.

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