

Clinical, economic, and patient-reported impact of obesity in the Asia-Pacific region: A Systematic Review

Esther Artime¹, Matilde Franceschini², Sam Riley², Julie Mount³, Arash Tahbaz³, Caragh Flannery⁴ Rachel S Newson⁵

¹Eli Lilly and Company, Alcobendas, Madrid, Spain; ²Adelphi Values, Adelphi Mill, Bollington, Cheshire, UK; ³Eli Lilly and Company Ltd, UK; ⁴Eli Lilly Cork Ltd – Global Business Solutions Centre, Cork, Ireland; ⁵Eli Lilly and Company, Sydney, Australia

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OBJECTIVE

- A systematic review of real-world evidence regarding the clinical, economic and patient-reported outcomes of obesity in the Asia-Pacific (APAC).

CONCLUSION

- Results indicate obesity is prevalent in the APAC region with notable presence of weight-related metabolic, cardiovascular, and psychological comorbidities.
- Obesity notably impacted the psychosocial sphere, physical functioning, and HRQoL of PwO, leading to the elevated use of health resources.
- This review helped identify key data gaps (e.g., limited data on HRQoL impact which was only available for Australia).

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BACKGROUND

- While the epidemic of obesity is well documented in Western countries, less is known about the extent of the problem in the Asia-Pacific APAC region.¹
- Obesity is a disease that contributes to several diseases (adiposity related complications), including diabetes type 2, cardiovascular diseases, and psychological problems, such as depression, stress, and anxiety.^{2,3}
- As the impact of obesity is influenced by numerous factors such as access to treatment, societal and patient perceptions, and differences in cultural attitudes⁴, a comprehensive understanding of the existing epidemiological, clinical, patient-reported, and economic evidence is warranted.

STUDY DESIGN

- Following PRISMA guidelines, a multi-region systematic literature review (SLR) was performed in selected European and APAC countries, and Canada for the period 2018 to 2023. **Here we report results for the APAC region (i.e., Japan, Australia, Korea, China, Taiwan, and Hong Kong).**
- Medline and Embase database searches were conducted in December 2022, with grey literature (local and international congresses and online supplementary) searches conducted in May 2023 to identify real-world multi-country and country-specific studies reporting the burden of obesity in adults, published in English or local language.
- We present here **initial results** from the searches; final numbers may be subject to minor updates.

Impact of Obesity

Epidemiological Impact
(prevalence)

Clinical Impact
(weight-related complications)

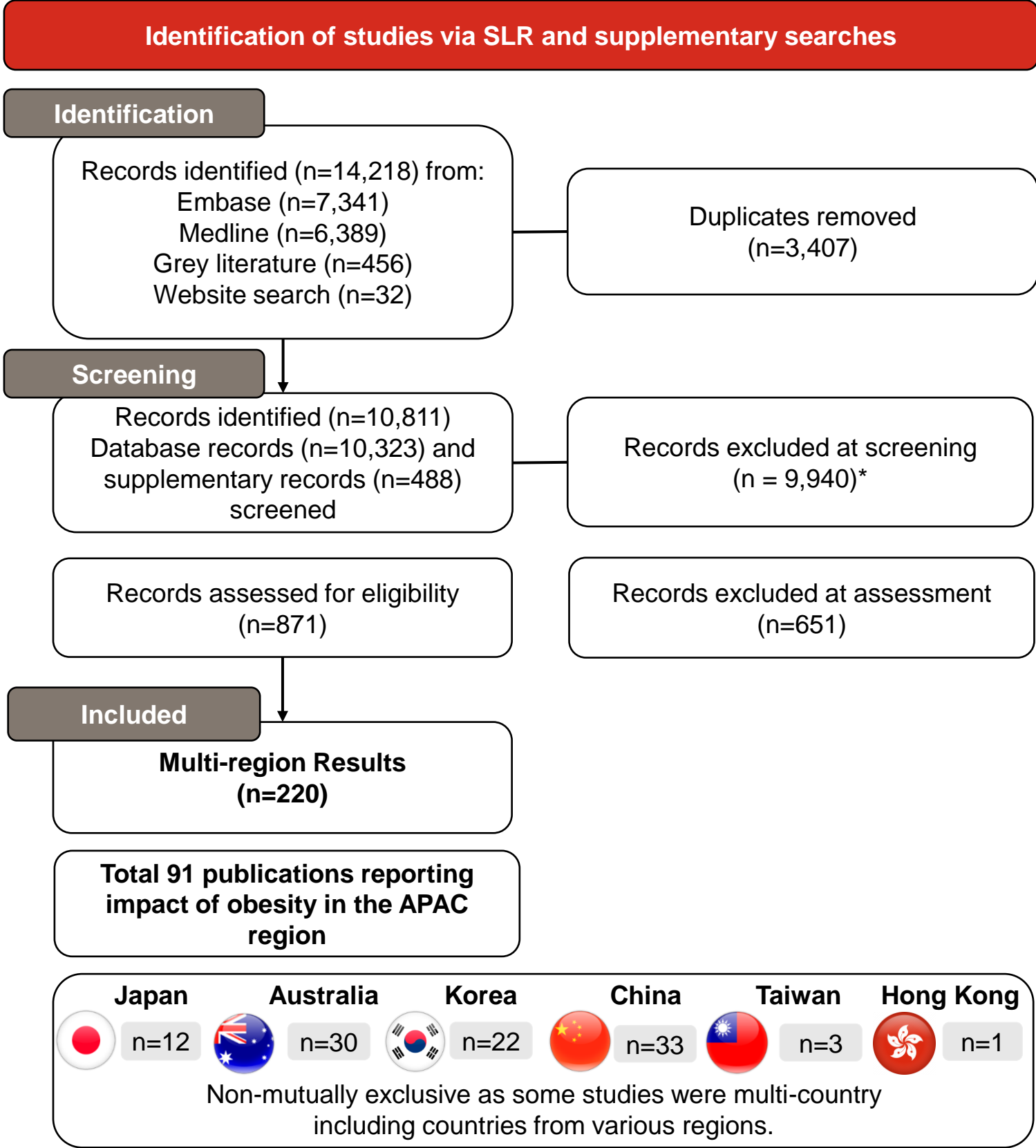
Economic Impact
(direct/indirect costs, out of pocket costs)

Patient Impact
(HRQoL, productivity, self-esteem)

Adult People with obesity (PwO), body mass index (BMI) Australia, BMI ≥30 kg/m²; China, BMI ≥28 kg/m²; Taiwan, BMI ≥27 kg/m² and Japan, Korea, Hong Kong, BMI ≥25 kg/m²

*Note: HRQoL, Health Related Quality of Life.

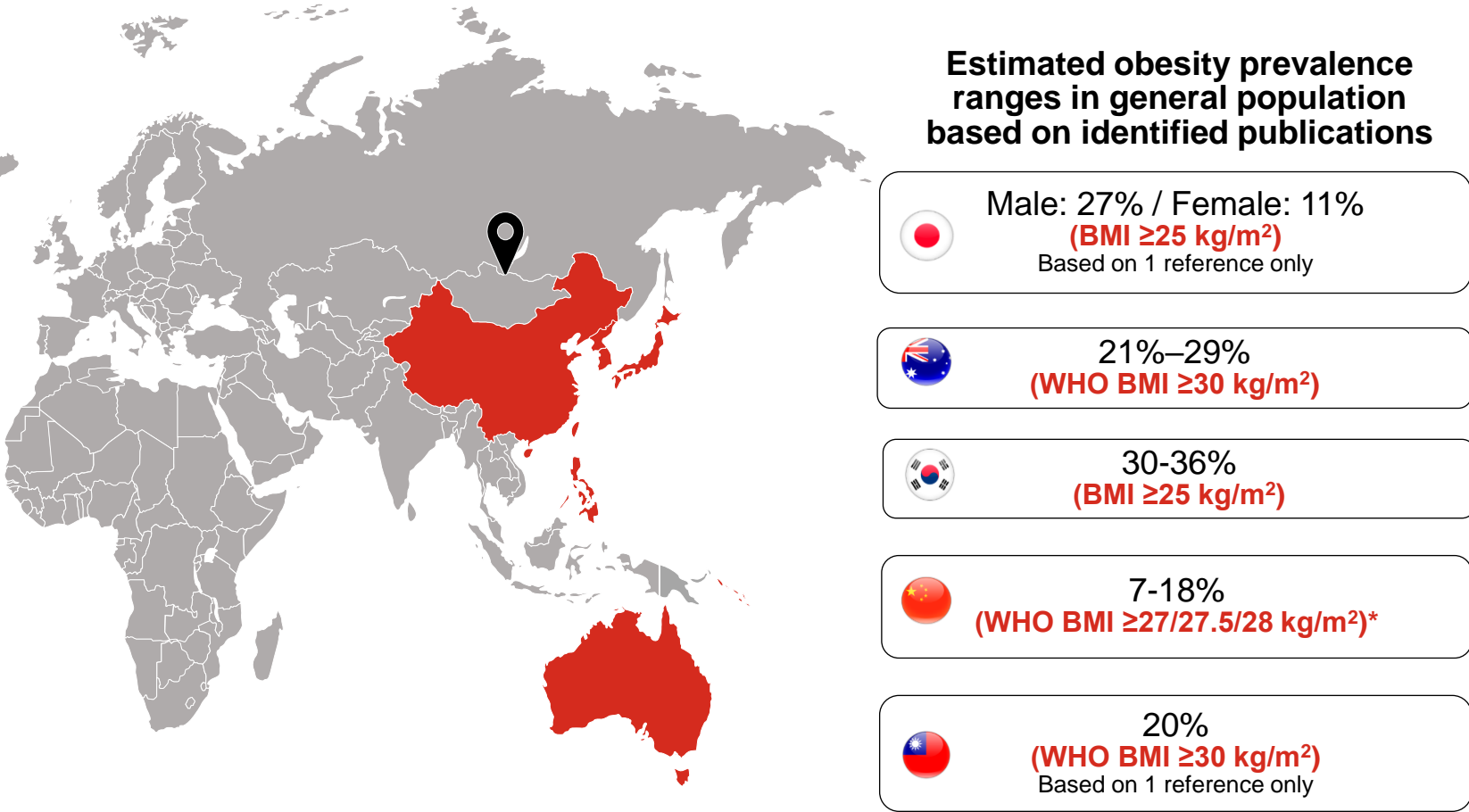
Figure 1. PRISMA Flow Diagram



*Reasons for exclusion at screening include geographical location, study type, study population, intervention and outcomes.

KEY RESULTS

Epidemiological impact across the APAC Region



⚠ Due to differing BMI thresholds for obesity, a total estimated prevalence range for APAC was not provided. *In China, different definitions were used for BMI ≥27/27.5/28 kg/m² across the included publications. WHO, world health organization.

Economic impact of obesity in the APAC Region

Direct costs/ Health Service Use

Indirect costs

China
hospitalization costs: \$8.4 billion and \$1.5 billion in Eastern and Western China, respectively, in 2018.

China - total direct costs: \$28,643 million

Japan – medical costs PwO: Males (40–59 years): JPY18,718, (60–69 years): JPY30,207; Females (40–59 years): JPY23,282, (60–69 years): JPY31,639

Korea – mean medical expenditures (SD) by obesity class: Class I: KRW 2,695 (6,354) Class II: KRW 3,168 (6,955), and Class III (KRW3.3,368 (6,293)

Australia – total direct costs annually per person: For PwO ± diabetes: (AU\$3,131 & 2,501).

China - total indirect costs: \$1,708 million; overall mean OOPE: \$480 per patient

Australia – absenteeism: PwO had a 1.35 times higher rate of absenteeism compared to normal-weight individuals.

Clinical impact of obesity in the APAC Region

Comorbidities



Type 2 diabetes was a commonly reported comorbidity across the APAC publications ranging from **6-90%**.



Dyslipidaemia 8-65%, hypertension 7-72%, and heart diseases 5.7-23% were also commonly reported comorbidities.



Other comorbidities reported included **obstructive sleep apnoea** prevalence range **16-52%**, and **depression** and **anxiety** prevalence range **17-31%**.

Note: Due to differing data collection methods and definitions across the included publications, the prevalence ranges for comorbidities should be interpreted with caution.

Patient reported impact of obesity in the APAC Region

Patient reported outcomes described in the identified publications



Japan & Korea -Data reported **mild-moderate** and **minimal** signs of **depressive symptoms in PwO**. Depressive symptoms were also linked with the presence of **binge eating**.

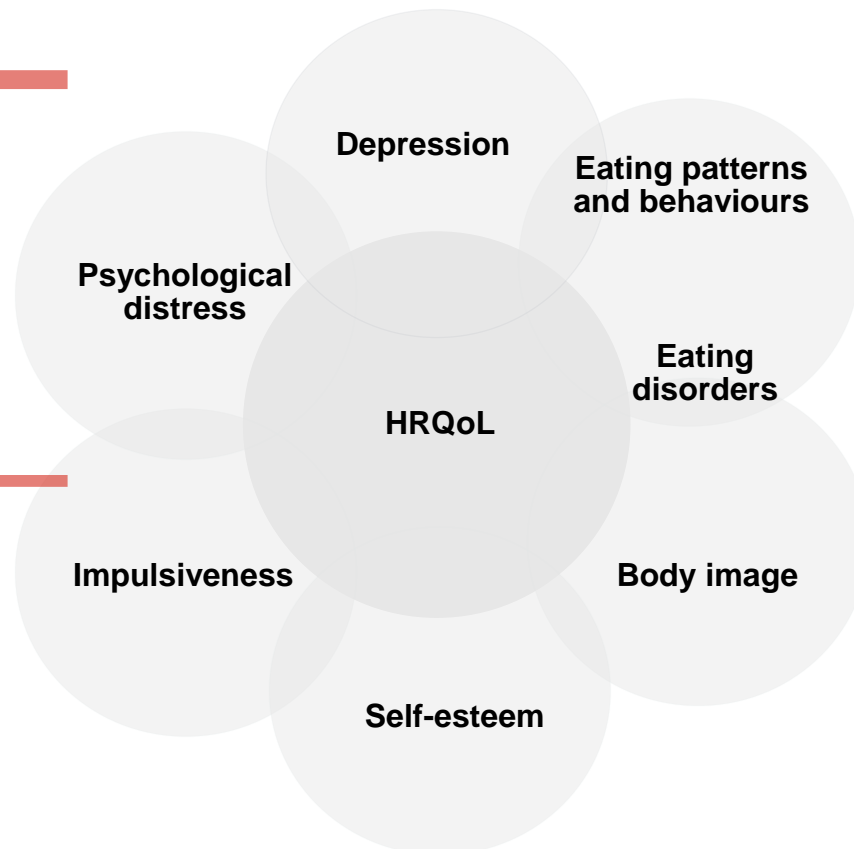


Australia - **High levels of psychological distress** was indicated using the **Kessler Scale (K10)*** for PwO: high **25.7**



Diminished HRQoL** on both the physical component summary (PCS) and mental component summary (MCS) scores of the **36-Item Short Form Health Survey (SF-36)***** was consistently reported among PwO.

Australia - Mean **PCS scores** ranged from **29.4–46.9**, while mean **MCS scores** range from **34.4–48.4**.



*Psychological distress using K10 scores: low (10–15), moderate (16–21), high (22–29), very high (30–50). ** HRQoL was only available for Australia. ***HRQoL SF36: better health status is signified by higher scores.

References¹World Health Organization. WHO European regional obesity report 2022. doi: 9789289057738-eng.pdf; ²Tremmel M, et al. Economic Burden of Obesity: A Systematic Literature Review. International journal of environ; ³Hecker, et al. Burden of disease study of overweight and obesity; the societal impact in terms of cost-of-illness and health-related quality of life. BMC Public Health 22, 46 (2022); ⁴Mauro et al (2007) Barriers to obesity treatment European Journal of Internal Medicine 2008 Vol. 19 Issue 3 Pages 173-180. **References for included systematic review publications on request**