

Gender Inequalities in Aortic and Mitral Valve Interventions in Sweden

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Objective

Gender disparities in cardiovascular interventions persist, but long-term trends in procedural access remain unexplored. We evaluated gender differences in aortic valve replacement (AVR) and mitral valve replacement or repair (MVR) in Sweden from 2009 to 2023.



Methods

We used data from the National Board of Health and Welfare's National Patient Register¹, including procedures and diagnosis codes from inpatient and specialized outpatient visits. We extracted data on MVR and AVR performed in patients aged ≥ 60 , stratified by gender. AVR were further stratified as surgical (SAVR) or transcatheter (TAVR). We calculated procedures' annual gender proportions and analyzed trends. To adjust for disease prevalence, we extracted visits with a primary diagnosis of aortic stenosis (AS) or mitral regurgitation (MR), and calculated procedure-to-diagnosis ratios.



Results

Among 212,713 AS diagnoses, 56.5% were in males, yet males received 62.0% of all AVRs and 66.7% of SAVRs. The proportion of male SAVR recipients increased from 61.7% in 2009 to 72.6% in 2023, due to a decline in SAVR rates in females. TAVR showed an increasing male proportion as well (47.8% to 57.1%), alongside a substantial rise in procedural volume. The SAVR procedure-to-diagnosis ratio remained higher in males throughout (30.3% males vs. 22.2% female in 2009; 16.0% vs. 8.6% in 2023) while the TAVR ratio was similar across genders (1.2% vs. 1.6% in 2009; 21.6% vs. 23.1% in 2023). 58,580 MR diagnoses were identified with 57.4% males. Of 13,003 MVRs, 71.2% were performed in males. Over time, the MVR gender gap grew slightly, ranging from 69.7% to 72.7% males from 2009 to 2023. The procedure-to-diagnosis ratio remained consistently higher in males (29.7% male vs. 16.1% female in 2009, 29.9% vs. 15.8% in 2023).



Figure 1: Absolute and gender-relative rates of surgical aortic valve replacements (SAVR)

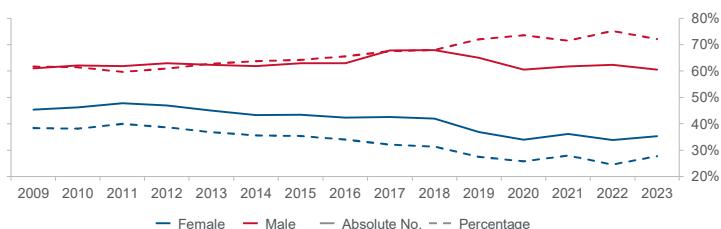


Figure 2: Absolute and gender-relative rates of transcatheter aortic valve replacements (TAVR)

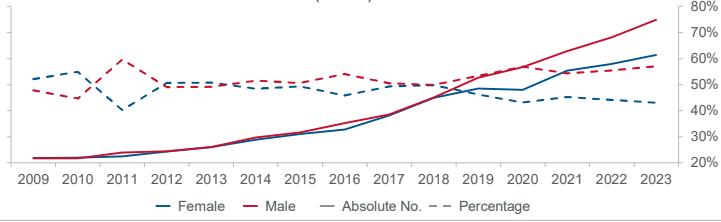
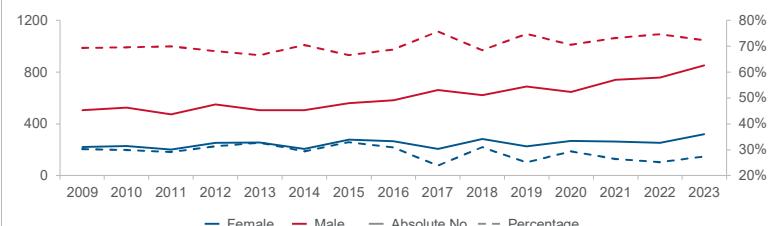


Figure 3: Absolute and gender-relative rates of mitral valve procedures (MVR)



Conclusion

Males are overrepresented in AVR and MVR procedures in Sweden, particularly in surgical approaches.

These findings necessitate investigation of potential gender-based disparities in access to valvular interventions.

1: Statistical database - National Board of Health and Welfare: www.socialstyrelsen.se/statistik-och-data/statistik/statistikdatabasen