

Sex differences in baseline risk factors, treatment, and progress: an analysis of T2 diabetes in Malaysia

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Introduction

- Analyzed the MeLODY dataset (extracted from diabetes patients in the UMMC hospital administrative database from 2015-2020)
- Previous studies have found that men and women with T2D have unique risk patterns and that women oftentimes have a worse quality of care

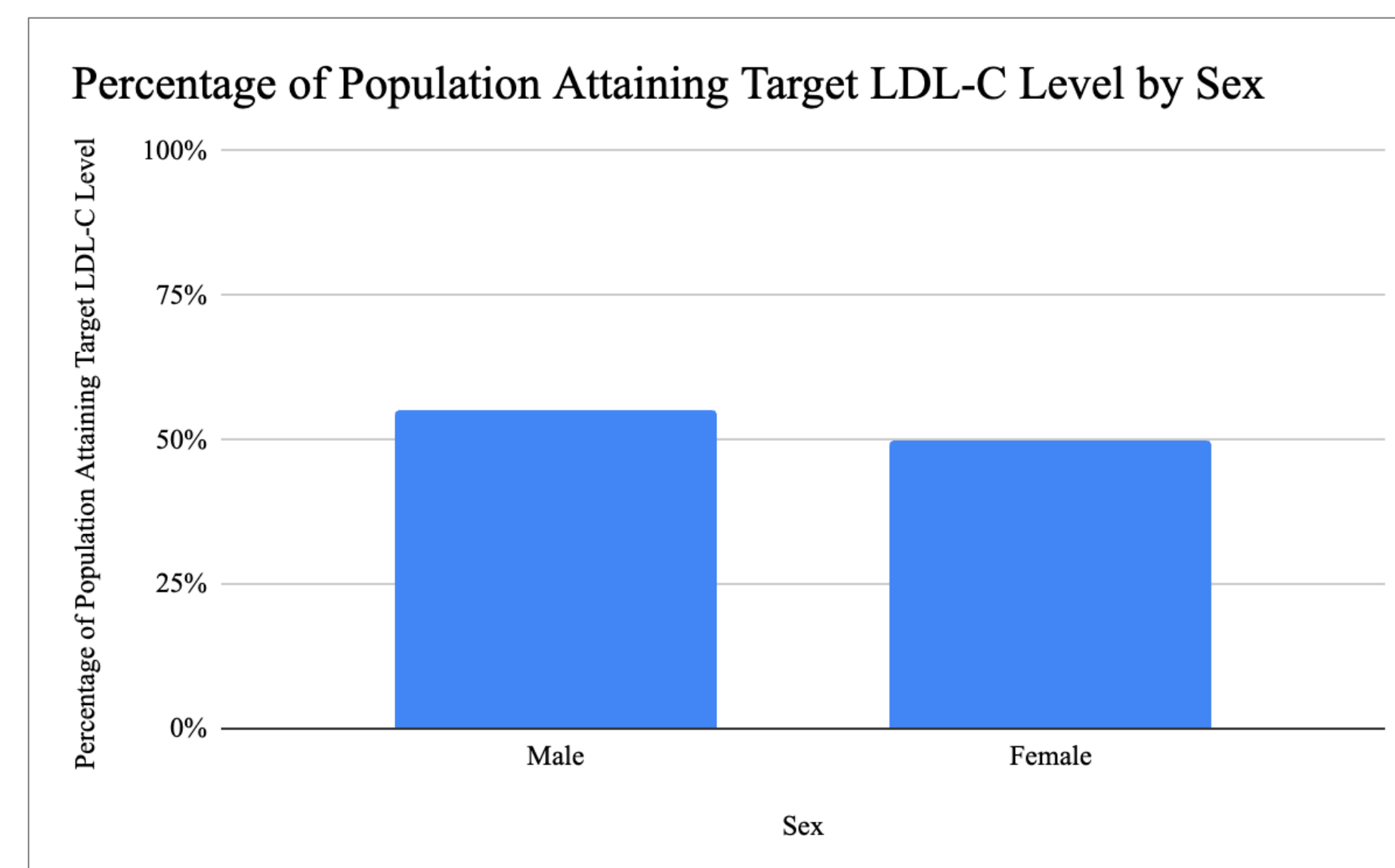
Objective and Work Profile

- Observed patients being treated in the UMMC diabetes care unit (comprehensive assessment, foot care, diabetes education/empowerment)
- Compared various risk factors, treatment, and target attainment by gender
- Attended biweekly meetings with a post-graduate diabetes research group where we discussed our progress

Results

	Men (n = 7988)	Women (n = 9051)	p-value
Waist circumference (> sex-specific threshold)*	161/212 (75.9%)	128/138 (92.8%)	< 0.001
Diastolic BP (>= 80 mm Hg)	765/1588 (48.2%)	510/1337 (38.1%)	< 0.001
Sodium (within normal range of 136-145 mmol/L)	1101/1951 (56.4%)	1030/1706 (60.4%)	0.017
MCV (within normal range of 80-100 fl)	2505/3162 (79.2%)	2259/3284 (68.8%)	< 0.001
MCH (within normal range of 26-33 pg)	2702/3162 (85.5%)	2475/3284 (75.4%)	< 0.001
MCHC (within normal range of 320-360 g/L)	1642/1993 (82.4%)	1342/1766 (76.0%)	< 0.001
Total cholesterol (>= 5.2 mmol/L)	557/1287 (43.3%)	538/1070 (50.3%)	< 0.001
LDL (>= 2.59 mmol/L)	678/1081 (62.7%)	606/904 (67.0%)	0.05
Bilirubin (within normal range of 1.71-20.5 umol/L)	1511/1717 (88.0%)	1370/1471 (93.1%)	< 0.001
ALT (within normal range of 4-36 units/L)	1059/1726 (61.4%)	1107/1486 (74.5%)	< 0.001
AST (within sex-specific normal range)*	217/1183 (18.3%)	780/1047 (74.5%)	< 0.001
Gamma GT (within normal range of 5-40 units/L)	717/1713 (41.9%)	829/1463 (56.7%)	< 0.001
Creatinine (within sex-specific normal range)*	1287/1951 (66.0%)	740/1706 (43.4%)	< 0.001
Uric acid (>= 360 umol/L)	232/401 (57.9%)	105/293 (35.8%)	< 0.001

Results of t-tests comparing risk factors by sex



Attainment of target LDL-C cholesterol during first 2 years of treatment

- Analysis reveals marked differences in the baseline risk profiles and responses to treatment between men and women
- Statin treatment analysis suggests a need to adjust statin intensity calculations based on sex

Reflection

- Recognizing these sex differences during diagnosis and creating more personalized treatment approaches are essential to improving patient outcomes
- Further analysis can be done into the risk profiles of younger vs older women
- This internship allowed me to improve my proficiency in R and Excel, as well as giving me a glimpse into the post-grad research environment
- Also strengthened my interest in data analytics and its intersectionality with different fields
- Had fun exploring different spots in Malaysia and practicing my Cantonese

Acknowledgements

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