

# An Intersectional Exploration of Weight-Based and Other Forms of Discrimination with Healthcare Experiences among Canadians

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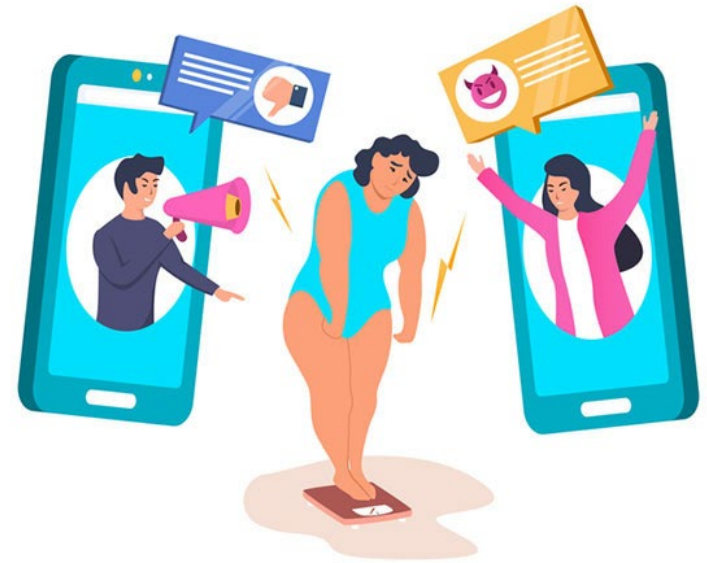
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## Background: *What is weight-based discrimination (WBD)?*

- Individuals who are considered to have obesity based on their BMI frequently experience weight-based discrimination (WBD)
- WBD has significant, negative effects on the overall health and wellbeing of higher weight individuals
  - Employment disparities (e.g., wage penalty, bias in job evaluation or hiring practices)
  - Interpersonally (e.g., friends, family, romantic partners)
  - Stigmatizing stereotypes in the media



## Background: *WBD and Healthcare*

- Healthcare providers are trained to attend to a patient's weight as it relates to the development or exacerbation of health conditions
- Although weight-related recommendations are well-intentioned, higher weight patients report increased WBD, specifically...
  - Increased disrespectful treatment and insensitive communication
  - Attribution of all health issues to their weight and/or inaccurate assumptions about health behaviours due to their weight
- WBD is also associated with:
  - Depression, low self-esteem, poor body image, maladaptive eating behaviours
  - Increased risk of chronic medical conditions (e.g., diabetes, arteriosclerosis), increased mortality risk, increases in weight and waist circumference
  - Avoidance of health services, 'doctor shopping', ambivalence towards healthcare providers

## Background: *The Research Gap*

- Little is known regarding how WBD relates to other forms of discrimination (e.g., race- or gender-based); these are also associated with worse health outcomes and experiences.
- In 2014, Statistics Canada and the Public Health Agency of Canada released data on everyday discrimination through a rapid response module as part of the the 2013 Canadian Community Health Survey
- One team used this dataset to assess discrimination risk in healthcare among adults across weight categories (Gupta et al., 2020)
- However, this report did not (A) compare experiences between individuals facing WBD and those who face other forms of, or no, discrimination and (B) their analysis did not include important patient-reported outcomes
- **These comparisons are necessary to understand how multiple forms of discrimination may intersect to influence the healthcare inequities faced by Canadians.**

## Study Objective and Research Questions

- Using data from the 2013 Canadian Community Health Survey, this study's purpose was to explore the association between WBD and other forms of discrimination with healthcare experiences among Canadians, through three research questions:
  - (1) Among Canadians aged 12 and up, what is the association between **type of discrimination experienced** [(1) perceived WBD only, (2) perceived WBD and other forms of discrimination (e.g., race- or gender-based), (3) other forms of perceived discrimination only, and (4) no perceived discrimination] and the **presence of unmet healthcare needs in the past year, satisfaction with healthcare, and general health?**
  - (2) How do these associations differ based on **sex**, namely male and female?
  - (3) How do these associations differ based on **weight status**, namely low weight and high weight?

# Methodology

## Data Source

- **Canadian Community Health Survey (CCHS), 2013-2014: Annual Component**
  - Cross-sectional survey administered yearly by Statistics Canada to community-dwelling Canadians ages 12+
  - 127,462 Canadians completed this survey from Jan 1-Dec 31, 2013
  - This data informed predictor variables (e.g., sex, cultural/racial origin, age, BMI, income) and outcome variables (e.g., unmet healthcare needs)
- **2013 Rapid Response Module using the Everyday Discrimination Scale (RRM-EDS)**
  - Cross-sectional survey that was collected for a subset of CCHS 2013-2014 respondents (n=19,786) from July to October 2013 regarding discrimination
- The population of interest included individuals who completed all relevant items in the 2013 CCHS as well as the RRM-EDS module, which represented a sample of 18,979 respondents or 9,060,005 post-weighting

# Methodology

## Data Preparation

Variable	Items	Interpretation
Discrimination Group	Combination of multiple ordinal or categorical items on the <i>Everyday Discrimination Scale – Short Version</i> informed whether participants experienced any everyday discrimination and, if so, what they attributed that to (e.g., weight, age, gender, race, etc.)	Individuals were sorted into one of four groups: (1) perceived WBD only (2) perceived WBD and other forms of discrimination (e.g., race- or gender-based) (3) other forms of perceived discrimination only (4) no perceived discrimination
Weight Status	Single continuous item regarding Body Mass Index	Individuals with a BMI of less than 25 (underweight, healthy) were sorted into “low weight”, while individuals with a BMI greater or equal to 25 (overweight, obese) were sorted into “high weight”
Unmet Healthcare Needs	Single binary item asking: “During the past 12 months, was there ever a time when you felt that you needed healthcare but you didn’t receive it?”	Individuals who responded “Yes” were sorted into “unmet care needs”, while those who responded “No” were sorted to “met care needs”
Healthcare Satisfaction	Average of four ordinal-scale items assessing overall availability and quality of healthcare services in province and community	Individuals with an average healthcare satisfaction score of 2.49 or less (1=Excellent, 2=Good) were labelled as “satisfied” and those with a score over 2.5 (3=Fair, 4=Poor) were labelled as “unsatisfied”
General Health	Single ordinal-scale item asking: “In general, would you say your health is...” with five response options: Excellent, Very Good, Good, Fair, and Poor	Individuals who reported Excellent, Very Good, or Good health were labelled as having “good health”, and individuals who reported Fair or Poor health were sorted into the “poor health” category

# Methodology

## EDS

In your day-to-day life, how often do any of the following things happen to you?

EDS\_005. You are treated with less courtesy or respect than other people are.

EDS\_010. You receive poorer service than other people at restaurants or stores.

EDS\_015. People act as if they think you are not smart.

EDS\_020. People act as if they are afraid of you.

EDS\_025. You are threatened or harassed.

Response Options:

At least once a week

A few times a month

A few times a year

Less than once a year

Never

*\*Only asked if respondent selected “Less than once a year” or more frequently for at least one item.\**

EDS\_030. What do you think the reasons might be for you to have had these experiences? Was it... (Mark all that apply).

1. Your race
2. Your gender
3. Your age
4. Your weight
5. Your religion
6. Your sexual orientation
7. A physical disability
8. Something else related to your physical appearance
9. Your Income
10. A mental health issue
11. Other



# Methodology

Data Analysis (conducted using SPSS)

- **Descriptive statistics** for all variables of interest (continuous = means, standard deviations; categorical = counts and percentages)
  - Exported using master weighting variable
- **Multiple logistic regression analysis**, to analyze the relationship between *Discrimination Group* with *Unmet Healthcare Needs*, *Healthcare Satisfaction*, and *General Health*
  - Odds ratios and 95% confidence intervals were reported for an unadjusted model, a model adjusted for *Age* and *Sex* (male or female) and a model adjusted for *Age*, *Sex*, and *Weight Status* (low weight or high weight)
  - Statistical significance was established based on confidence intervals and a p-value of 0.05
  - Given that women and higher weight individuals are more likely to experience WBD, results were also stratified by *Sex* and *Weight Status* that were adjusted for *Age* and *Age* and *Weight Status* or *Sex*
  - Exported using a normalized weighting variable for each outcome, as they had different samples

# Results

## Demographics

Continuous Variable, units	Weighted N	Mean	SD
<b>PREDICTOR VARIABLES</b>			
Age (years)	9,060,005	44.47	19.04
Body Mass Index (BMI) (kg/m <sup>2</sup> )	8,701,187	25.78	5.34
Household size	9,060,005	2.89	1.41
Number of types of discrimination**	3,815,983*	1.24	0.62
<b>OUTCOME VARIABLES</b>			
Healthcare Satisfaction, average***	1,102,860	2.23	0.68

Variable	Category	Weighted N	Percentage (%)
<b>PREDICTOR VARIABLES</b>			
<b>Sex</b>		9,060,005	
	Female	4,627,927	51.1
	Male	4,432,078	48.9
<b>Cultural or racial origin</b>		8,668,090	
	White	6,877,557	79.3
	South Asian	400,841	4.6
	Chinese	343,373	4.0
	Black	255,359	2.9
	Filipino	206,972	2.4
	Arab	106,200	1.2
	Latin American	89,082	1.0
	Southeast Asian	73,661	0.8
	East Asian	39,083	0.5
	West Asian	43,318	0.5
	Other	97,788	1.1
	Multiple	134,856	1.6
<b>Total Household Income*</b>		9,060,005	
	<\$49,999	3,017,354	33.3
	\$50,000-99,000	3,159,206	34.9
	\$100,000-149,999	1,622,266	17.9
	>\$150,000	1,261,180	13.9
<b>Weight Status</b>		8,798,081	
	Low weight (BMI < 24.9)	4,332,333	49.2
	High weight (BMI > 25.0)	4,465,748	50.8

# Results

## Demographics

Variable	Category	Weighted N	Percentage (%)
<b>PREDICTOR VARIABLES</b>			
<b>Presence of Everyday Discrimination</b>		8,976,771	
	Any amount	4,119,660	45.9
	None	4,857,112	54.1
<b>Type of Everyday Discrimination**</b>		3,815,983	
	Race	565,629	14.8
	Gender	608,574	15.9
	Age	760,169	19.9
	Weight	293,067	7.7
	Religion	138,916	3.6
	Sexual Orientation	54,499	1.4
	Physical Disability	93,410	2.4
	Other Physical Appearances	422,323	11.1
	Income	131,593	3.4
	Mental Health	93,639	2.5
	Other	1,568,501	41.1
<b>Discrimination Group</b>		8,673,095	
	Weight-based only	141,494	1.6
	Weight-based + Other	151,573	1.7
	Other only	3,522,916	40.6
	None	4,857,112	56.0

Variable	Category	Weighted N	Percentage (%)
<b>OUTCOME VARIABLES</b>			
<b>Unmet Healthcare Needs in the past year</b>		4,699,538	
	Yes	519,774	11.1
	No	4,179,764	88.9
<b>Healthcare Satisfaction</b>		1,102,860	
	Satisfied	689,239	62.5
	Unsatisfied	413,622	37.5
<b>General Health, binary</b>		9,054,220	
	Good	8,155,199	90.1
	Poor	899,021	9.9
<b>General Health, ordinal</b>		9,054,220	
	Excellent	1,873,055	20.7
	Very Good	3,534,054	39.0
	Good	2,748,090	30.4
	Fair	717,545	7.9
	Poor	181,476	2.0

# Results

## Multiple Logistic Regression Analysis

		Unadjusted		Age- and Sex-adjusted		Age-, Sex-, and Weight Status-adjusted	
Outcome Variable	Discrimination Group	OR	95% CI	OR	95% CI	OR	95% CI
Unmet Healthcare Needs	Weight only	1.97*	1.19 – 3.26	1.85*	1.11 – 3.08	1.72*	1.03 – 2.88
	Weight + Other	3.18*	2.08 – 4.87	2.91*	1.90 – 4.47	2.71*	1.76 – 4.18
	Other only	2.39*	2.05 – 2.73	2.30*	1.99 – 2.67	2.29*	1.98 – 2.66
Healthcare Satisfaction	Weight only	1.79	0.94 – 3.43	1.99*	1.03 – 3.85	1.50	0.77 – 2.92
	Weight + Other	3.27*	1.90 – 5.63	3.52*	2.04 – 6.09	2.92*	1.68 – 5.07
	Other only	1.48*	1.24 – 1.77	1.61*	1.34 – 1.93	1.57*	1.31 – 1.90
General Health	Weight only	1.47*	1.02 – 2.11	2.42*	1.67 – 3.52	2.22*	1.52 – 3.23
	Weight + Other	2.13*	1.58 – 2.88	3.86*	2.82 – 5.29	3.58*	2.61 – 4.92
	Other only	1.21*	1.09 – 1.34	1.68	1.51 – 1.87	1.67*	1.50 – 1.86

OR = odds ratio; CI = confidence interval.

Reference group for *Discrimination Group* is No Discrimination. Reference group for *Weight Status* is Low Weight. Reference group for *Sex* is Male.

\* Significant at a *p*-value of 0.05.

# Results

## Stratified by Sex

		MALE				FEMALE			
		Age-adjusted		Age- and Weight Status-adjusted		Age-adjusted		Age- and Weight Status-adjusted	
Outcome Variable	Discrimination Group	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Unmet Healthcare Needs	Weight only	2.48*	1.09 – 5.67	2.28	0.99 – 5.23	1.69	0.92 – 3.12	1.48	0.77 – 2.83
	Weight + Other	1.53	0.53 – 4.48	1.47	0.50 – 4.31	3.28*	2.03 – 5.29	3.19*	1.96 – 5.21
	Other only	2.53*	2.00 – 3.20	2.50*	1.97 – 3.16	2.10*	1.74 – 2.53	2.19*	1.81 – 2.66
Healthcare Satisfaction	Weight only	8.89*	1.43 – 55.28	6.68*	1.07 – 41.69	1.58	0.76 – 3.25	1.29	0.59 – 2.80
	Weight + Other	6.89*	2.66 – 17.85	5.08*	1.95 – 13.22	2.39*	1.20 – 4.76	2.24*	1.11 – 4.52
	Other only	1.29	1.00 – 1.67	1.33*	1.03 – 1.73	1.83*	1.41 – 2.36	1.95*	1.50 – 2.54
General Health	Weight only	1.61	0.86 – 3.00	1.71	0.91 – 3.20	2.92*	1.86 – 4.59	2.55*	1.59 – 4.09
	Weight + Other	2.81*	1.69 – 4.67	2.88*	1.72 – 4.79	4.64*	3.12 – 6.89	4.14*	2.75 – 6.24
	Other only	1.60*	1.38 – 1.86	1.62*	1.39 – 1.88	1.62*	1.39 – 1.88	1.76	1.51 – 2.06

OR = odds ratio; CI = confidence interval.

Reference group for *Discrimination Group* is No Discrimination. Reference group for *Weight Status* is Low Weight. Reference group for Sex is Male.

\* Significant at a *p*-value of 0.05.

# Results

## Stratified by Weight Status

		LOW WEIGHT				HIGH WEIGHT			
		Age-adjusted		Age- and Sex-adjusted		Age-adjusted		Age- and Sex-adjusted	
Outcome Variable	Discrimination Group	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Unmet Healthcare Needs	Weight only	1.34	0.40 – 5.61	1.23	0.29 – 5.19	1.97*	1.13 – 3.44	1.86*	1.06 – 3.25
	Weight + Other	0.66	0.10 – 4.38	0.60	0.09 – 4.02	3.61*	2.28 – 5.74	3.29*	2.07 – 5.25
	Other only	2.18*	1.77 – 2.68	2.09*	1.70 – 2.58	2.50*	2.02 – 3.09	2.48*	2.00 – 3.06
Healthcare Satisfaction	Weight only	27.03	0.17 – 4233.41	22.75	0.14 – 3656.75	1.29	0.65 – 2.57	1.34	0.67 – 2.68
	Weight + Other	1.18	0.25 – 5.49	0.96	0.21 – 4.47	3.26*	1.75 – 6.09	3.31*	1.77 – 6.18
	Other only	1.74*	1.31 – 2.31	1.82*	1.37 – 2.42	1.43*	1.12 – 1.83	1.44*	1.22 – 1.84
General Health	Weight only	1.51	0.34 – 6.74	1.45	0.32 – 6.58	2.20*	1.49 – 3.26	2.18*	1.47 – 3.22
	Weight + Other	4.70*	2.27 – 9.72	5.06*	2.44 – 10.48	3.28*	2.30 – 4.66	3.25*	2.28 – 4.62
	Other only	1.04*	1.03 – 1.04	1.76*	1.03 – 2.08	1.64*	1.42 – 1.89	1.64*	1.42 – 1.89

OR = odds ratio; CI = confidence interval.

Reference group for *Discrimination Group* is No Discrimination. Reference group for *Weight Status* is Low Weight. Reference group for *Sex* is Male.

\* Significant at a *p*-value of 0.05.

## Discussion

- Individuals experiencing any form of discrimination were significantly more likely to experience unmet healthcare needs, dissatisfaction with healthcare, and poor general health than those who do not report everyday discrimination.
- Women experiencing WBD and other forms of discrimination were significantly more likely to experience all three negative health experience outcomes than their female counterparts who did not report experiencing discrimination.
- Higher weight individuals in all discrimination groups were significantly more likely to experience more unmet healthcare needs, dissatisfaction with healthcare, and poor general health than higher weight individuals who did not report experiencing discrimination.
- Interestingly, men and low weight individuals only experienced significant levels of negative health experiences (compared to their no-discrimination counterparts) when they experienced non-weight-based discrimination only.
- In alignment with pre-existing research, women and higher weight individuals experiencing WBD were more likely than men or low weight individuals to have negative healthcare experiences.

## Discussion

- Across all regression analyses, individuals who experienced a combination of WBD and other forms of discrimination consistently yielded higher odds ratios than either WBD only or other forms of discrimination only when it came to all three outcomes.
- These patterns support the association between intersecting social determinants of health with healthcare inequities or disparities
  - The combination of marginalized identities (e.g., higher weight individuals, women) overlapped to produce negative outcomes that were, in some cases, greater than the sum of their parts (e.g., WBD only, other forms of discrimination only), specifically among Canadians who were female and/or living in a higher weight body.



# Strengths and Limitations

Strengths	Limitations
<ul style="list-style-type: none"><li>• Use of a <b>trusted, vetted dataset</b> provided by the RDC and collected by Statistics Canada</li><li>• Application of an <b>intersectional framework</b> to understand the overlapping forms of discrimination with healthcare experiences</li></ul>	<ul style="list-style-type: none"><li>• Data pertaining to Unmet Healthcare Needs and Healthcare Satisfaction were <b>only available for a subset of the main sample</b></li><li>• There were <b>large differences in the number of respondents in each discrimination group</b> (e.g., 1.6% in WBD only, 40.6% in other forms of discrimination only), which lowers our confidence in the results for the groups comprised of smaller samples</li><li>• The <b>transformation</b> of our variables of interest from ordinal or continuous to binary caused a loss of information, in terms of severity or frequency</li></ul>

## Conclusions

- Overall, overlapping forms of discrimination negatively influence health outcomes and experiences.
- Investigations of the association between various forms of discrimination and the subjective healthcare experiences of Canadians have the potential contribute to the development of much-needed evidence-based and patient-informed strategies, interventions, and policies that promote social justice, address systemic factors that perpetuate weight bias, and enhance health outcomes for individuals regardless of their weight.
- More generally, there is a need to develop and evaluate efforts that address the impact of weight and other forms of stigma on healthcare access and quality, given the negative implications on those affected.

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# Reference List





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**Thank you!**