



Do Workplace Facilities and Health Promotion Programs Help Workers Be Physically Active?

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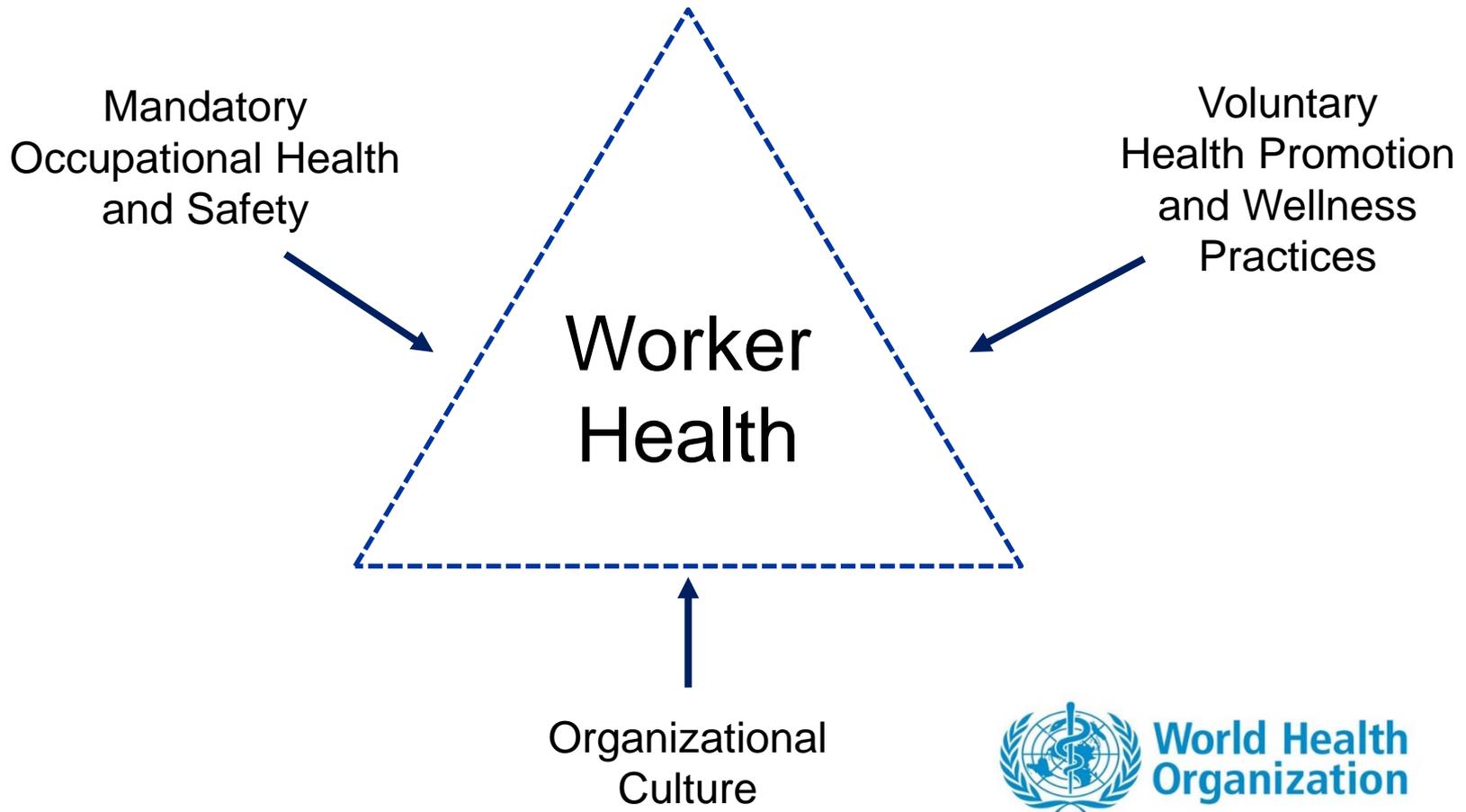




Benefits of Workplace Health Promotion

- Prevent illness and promote better health
- Improved worker productivity
 - Reduced absenteeism, improved presenteeism
- Organizational change
 - Lower health/disability costs, recruitment/retention

1. Cancelliere C et al. Are workplace health promotion programs effective at improving presenteeism in workers? A systematic review and best evidence synthesis of the literature. *BMC Public Health*. 2011;11(1):395.
2. Goetzel RZ et al. Do workplace health promotion (wellness) programs work? *Journal of Occupational and Environmental Medicine*. 2014;56(9):927-34.



NIOSH TOTAL WORKER HEALTH®

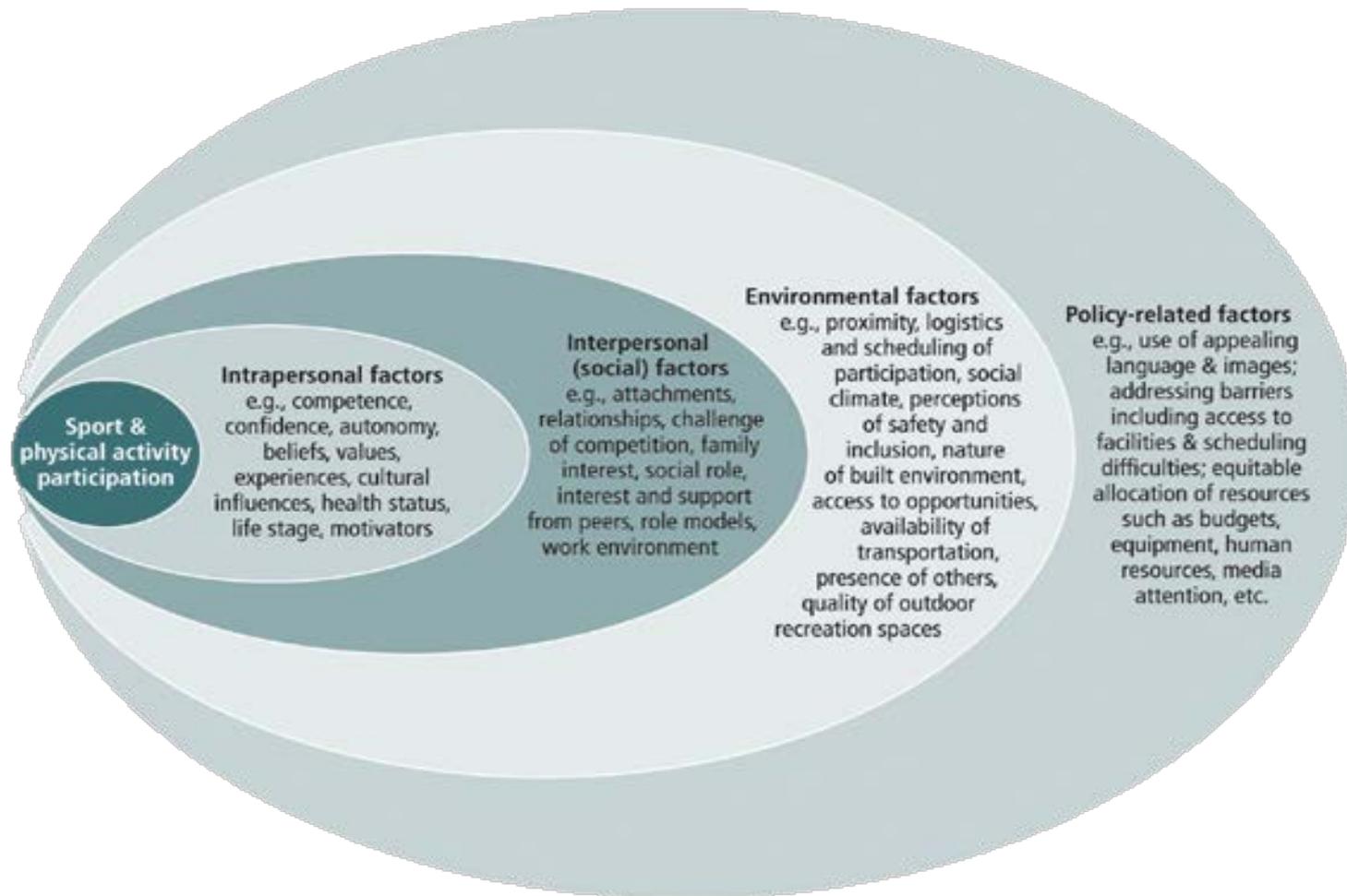


Physical Activity-Based Health Promotion

- Make up the majority of all workplace health promotion programs
- Relatively easy to advocate such efforts to employees



Being physically active isn't easy for most people





Direct physical activity-promoting workplace facilities



Indirect physical activity-promoting workplace facilities





Research Question:

Is there a relationship between having access to physical activity-promoting facilities at or near work (“workplace facilities”) and the leisure time physical activity of workers?

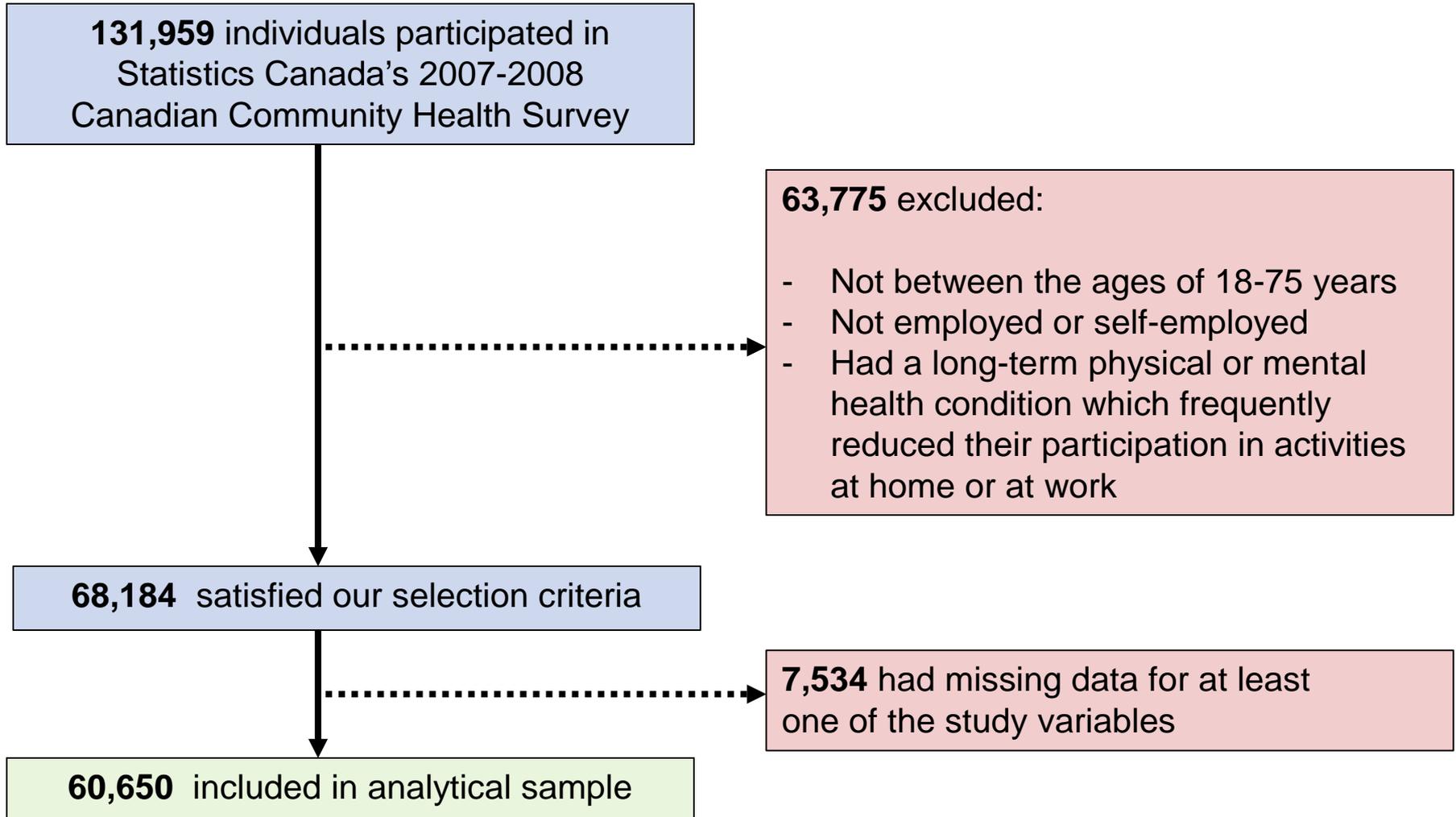


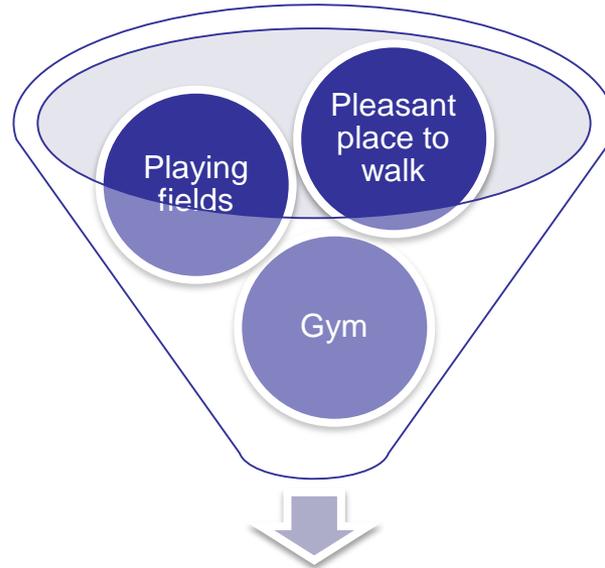
2007-2008 Canadian Community Health Survey

Unique. Asked questions on workplace facilities at or near work:

“At or near your place of work, do you have access to...”

- 1) A pleasant place to walk, jog, bicycle or rollerblade?
- 2) Playing fields or open spaces for ball games or other sports?
- 3) A gym or physical fitness facilities?
- 4) Organized fitness classes?
- 5) Organizational recreational sports teams?
- 6) Showers and/or change rooms?
- 7) Programs to improve health, physical fitness or nutrition?





Latent Class Analysis

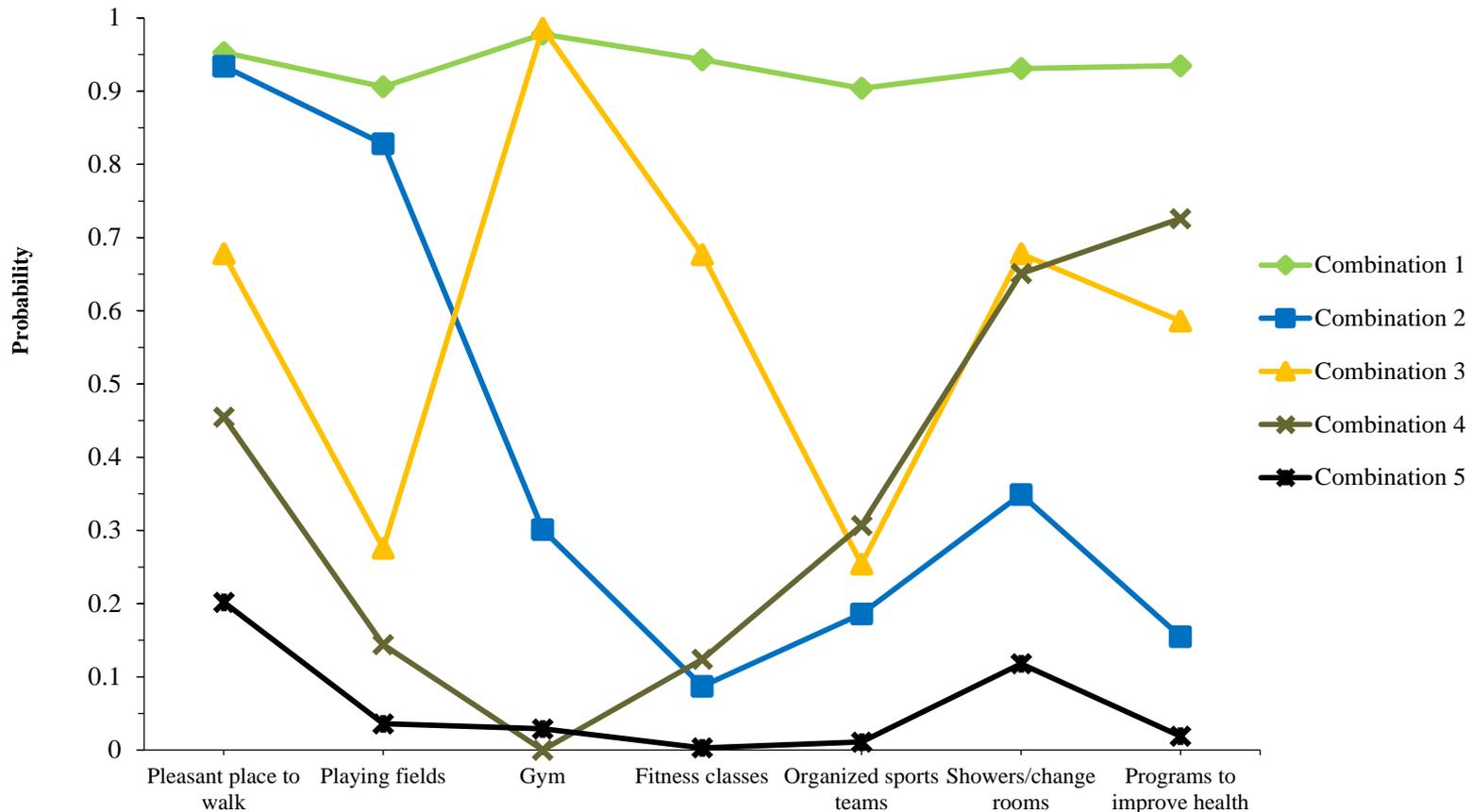


Natural Combinations of Workplace Facilities





Natural Combinations of Workplace Facilities





Natural Combinations of Workplace Facilities

Workplace Facilities	Combination					
	1 (All)	2 (W/P)	3 (W/G/F/S/H)	4 (W/S/H)	5 (W/S)	None
Pleasant place to walk	0.95	0.93	0.68	0.46	0.20	0
Playing fields	0.91	0.83	0.28	0.14	0.04	0
Gym	0.98	0.30	0.99	0.00	0.03	0
Fitness classes	0.94	0.09	0.68	0.12	0.00	0
Organized sports teams	0.90	0.19	0.25	0.31	0.01	0
Showers/change rooms	0.93	0.35	0.68	0.65	0.12	0
Programs to improve health	0.94	0.16	0.59	0.73	0.02	0
% of all respondents	24.4	14.6	14.9	4.5	17.7	23.9



Combination	Workplace Facilities	Key Independent Characteristics
1 (All)	Pleasant place to walk + playing fields + gym + fitness classes + org sport teams + showers/change rooms + health programs	18-32 years old; white; unmarried/non-common law partnership; with a child <25 years; bit of work stress; very good-excellent health and mental health.
2 (W/P)	Pleasant place to walk + playing fields	Underweight; worked <30 hours per week; not much work stress.
3 (W/G/F/S/H)	Pleasant place to walk + gym + fitness classes + showers/change rooms	Females; unmarried/non-common law partnership; income ≥\$60,000; at least a postsecondary education; normal weight; working in a low physically demanding job; quite/extreme work stress.
4 (W/S/H)	Pleasant place to walk + showers/change rooms + health programs	33-62 year olds; married/common law; income between \$30,000-\$60,000; underweight/overweight or obese; working 30-40 hours a week.
5 (W/S)	Pleasant place to walk + showers/change rooms	Males; <u>non-white</u> ; married/common-law; child <25 years; <u>income under \$30,000; secondary school education or less; an immigrant; medium-high physically demanding job; worked >40 hours per week; poor health and mental health.</u>
None	No access to workplace facilities	



Summary

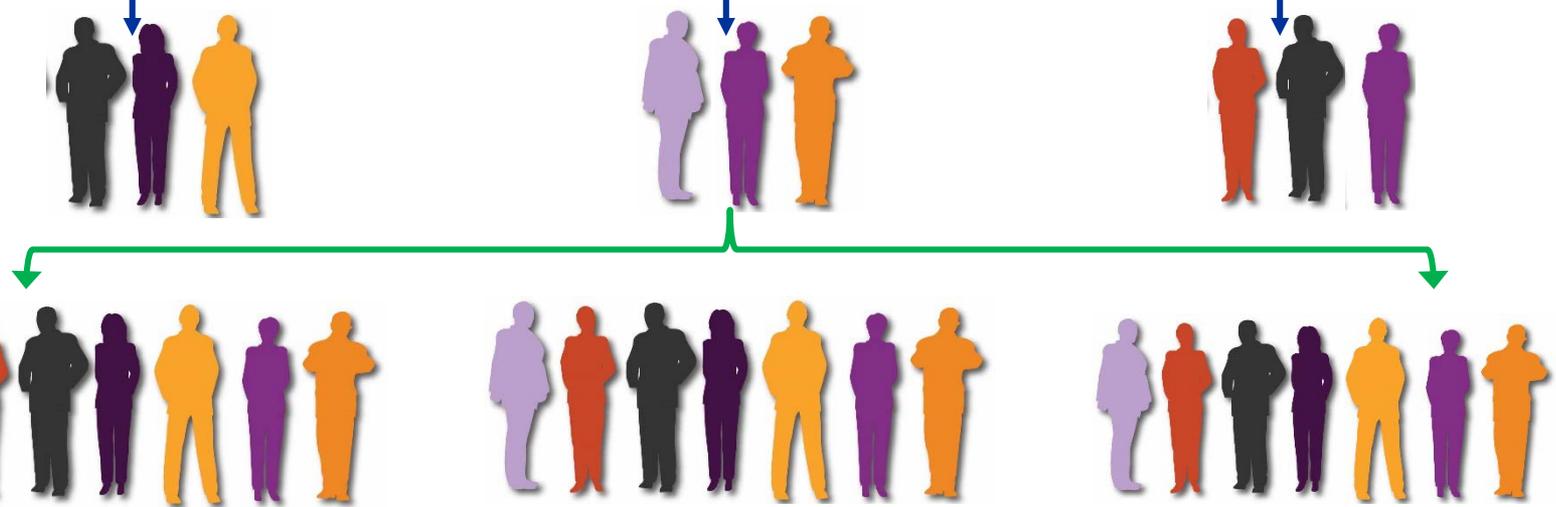
- A range of combinations of workplace facilities are available to Canadian workers
- Many of those with low access to workplace facilities are characteristic of those with low socioeconomic status. These individuals are often the least physically active



Natural Combinations of Workplace Facilities



Inverse Probability of Treatment Weights Derived from Propensity Scores



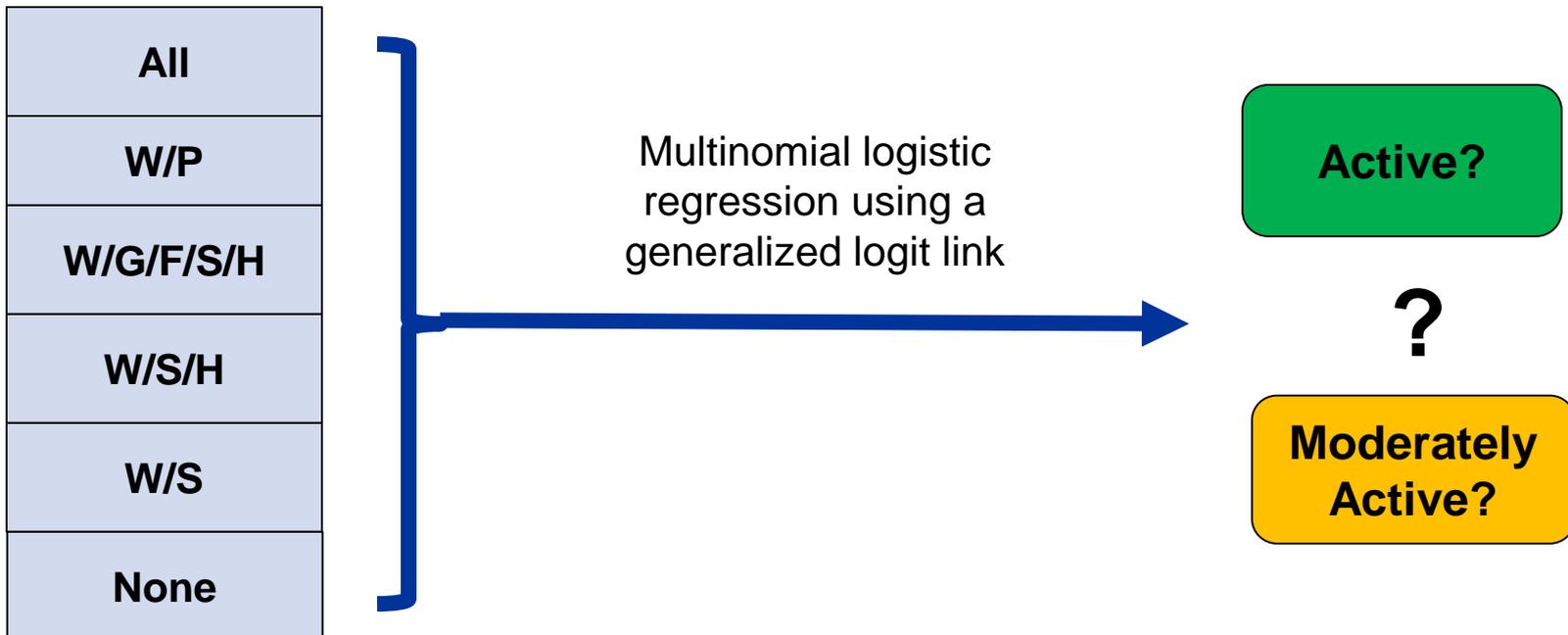


Nineteen Characteristics

Seasonality	
Individual	Occupational
Age	Income
Sex	Hours worked per week
Marital status	Working at home (yes or no)
With a child <25 years of age	Work stress
Immigrant (yes or no)	Physical demands of work
Highest education attained	
Cultural/racial background	
BMI	
Daily fruit and vegetable intake	
Smoker (yes or no)	
Alcohol consumption	
Self-perceived health	
Self-perceived mental health	

Workplace Facilities and LTPA of Workers

- 1) Examine the association between each combination of workplace facilities and leisure time physical activity (LTPA) of workers





Combination	Workplace Facilities	Leisure Time Physical Activity Level	
		Active	Moderately Active
1 (All)	Pleasant place to walk + playing fields + gym + fitness classes + org sport teams + showers/change rooms + health programs	2.08 (1.03-4.20)	1.47 (0.78-2.79)
2 (W/P)	Pleasant place to walk + playing fields	1.56 (1.14-2.13)	1.28 (0.96-1.70)
3 (W/G/F/S/H)	Pleasant place to walk + gym + fitness classes + showers/change rooms	1.76 (1.24-2.50)	1.35 (0.91-2.00)
4 (W/S/H)	Pleasant place to walk + showers/change rooms + health programs	1.57 (1.28-1.92)	1.39 (1.07-1.80)
5 (W/S)	Pleasant place to walk + showers/change rooms	1.29 (0.93-1.79)	1.17 (0.87-1.58)
None	No access to workplace facilities	Reference	Reference



Summary

- Each combination of workplace facilities available is associated with moderately active and active Canadian workers
- Having all workplace facilities available (combination 1) increases the likelihood of workers being physically active (over a 200% increase)



How do we know that these increases are related to the workplace facilities themselves, or because of other factors?

Social-desirability? The most active seek workplaces with more workplace facilities? Individual Preferences? The built environment itself?



Workplace Facilities and Plausible Physical Activities

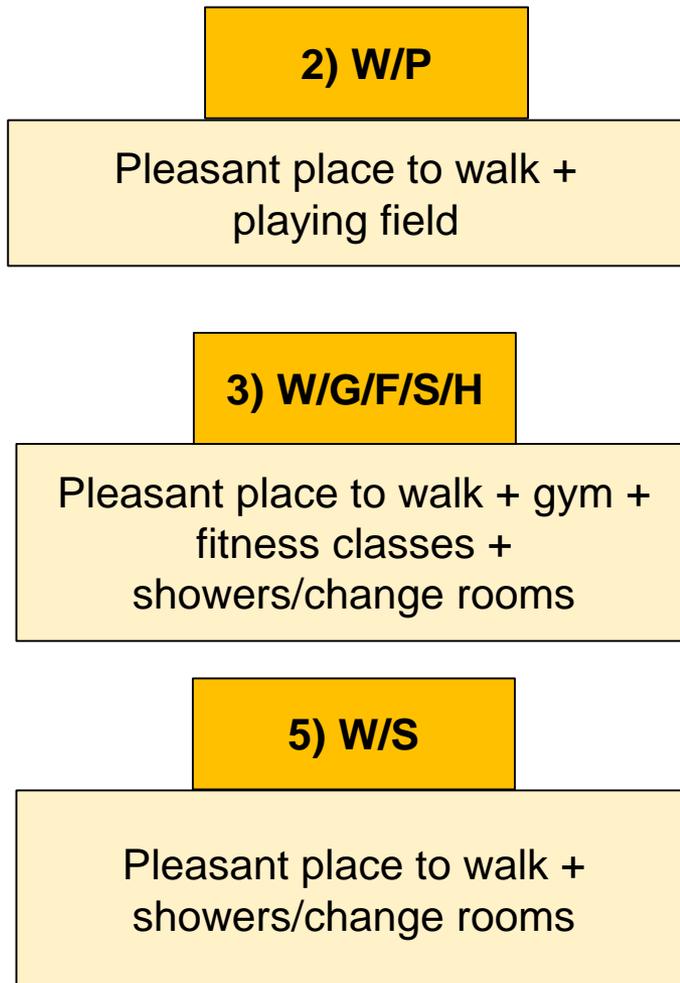
Plausibly Associated with Facilities	Not Plausibly Associated with Facilities
Walking for exercise	Popular/social dance
Jogging or running	Home exercise
Exercise class/aerobics	Swimming
Bicycling	Ice hockey
Field sports	In-line skating/rollerblading
Weight training	Skiing/snowboarding

If the relationship between naturally combinations of workplace facilities and increased LTPA are because of the facilities themselves, we will expect more participation in “plausibly associated” with these facilities rather than those “not plausibly associated”

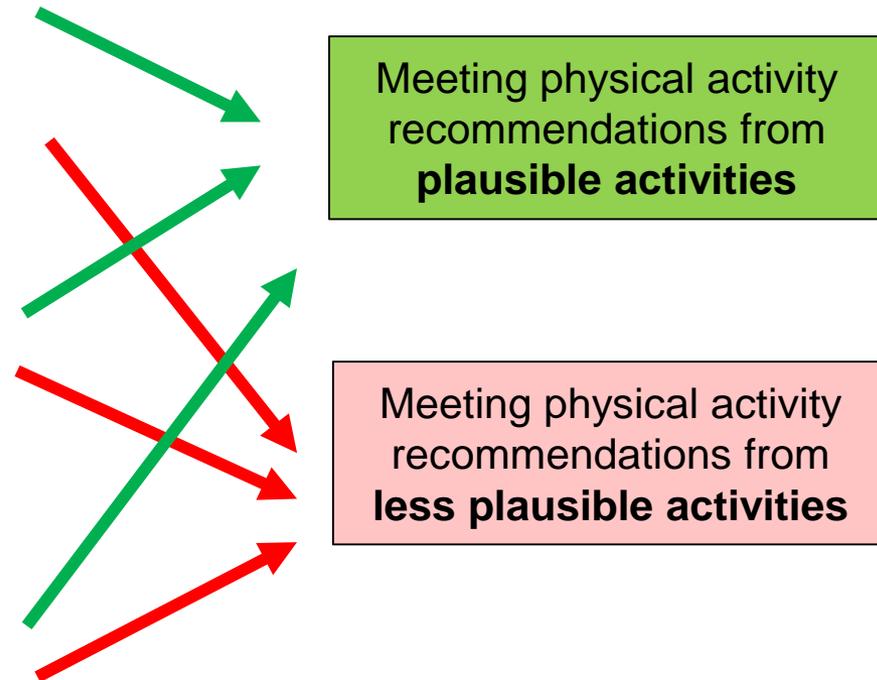


Which strategy do you think will work?

Combination	Workplace Facilities
1 (All)	Pleasant place to walk + playing fields + gym + fitness classes + org sport teams + showers/change rooms + health programs
2 (W/P)	Pleasant place to walk + playing fields
3 (W/G/F/S/H)	Pleasant place to walk + gym + fitness classes + showers/change rooms
4 (W/S/H)	Pleasant place to walk + showers/change rooms + health programs
5 (W/S)	Pleasant place to walk + showers/change rooms
None	No access to workplace facilities



Unclear whether relationships between workplace facilities and LTPA are due to facilities or other factors





1) All

Pleasant place to walk + playing fields + gym + fitness classes + org sport teams + showers/change rooms + health programs

4) W/S/H

Pleasant place to walk + showers/change rooms + health programs

Relationships with LTPA likely to be associated with workplace facilities more than other factors

Meeting physical activity recommendations from **plausible activities**

Meeting physical activity recommendations from **less plausible activities**





Summary

- Some combinations of workplace facilities are likely to help workers increase their leisure time physical activity
 - Having all possible workplace facilities (All)
 - A pleasant place to walk
 - + showers/change rooms
 - + health programs (Combination 5)



Limitations to Consider

- We need to build on this work.
We looked only at one moment in time and not how physical activity may change over time
- We looked at access to natural combinations of workplace facilities and not how the facilities were used
- We need to verify these findings with more precise, objective estimates of physical activity



Implications

- A sizeable proportion of Canadian workplaces may be providing some form of workplace facilities to support their workers increasing their physical activity
- Socioeconomic status might be related to a worker's access to workplace facilities. These individuals may need better access to workplace facilities.
- Other strategies might also help workers be more physically active



Questions?



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