iCARE Global Study:
Preliminary results and policy implications

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On behalf of the iCARE Study Team***

*www.mbmc-cmcm.ca/covid19/

Disclosures

- **Grants :** GSK, AbbVie

- **Conferences and presentations :** AbbVie, Boehringer Ingelheim, Takeda, Pfizer, Merck, GSK, Astra-Zeneca, Novartis, Janssen, Bayer, Mundi Pharma, Bayer, Air Liquide, Astellas

- **Consultation :** AbbVie, Takeda, Astellas, Boehringer Ingelheim, Astra-Zeneca, Janssen

Background
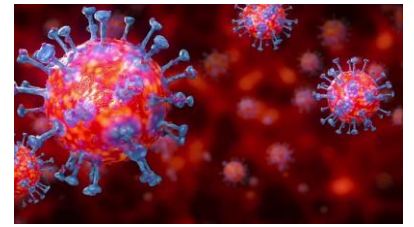
- In the absence of a vaccine, treatment or cure, the key to slowing the spread of COVID-19 is adherence to public health policies

- However, adherence to many policies comes with significant personal, social and economic costs that may undermine adherence

- Understanding the psychosocial determinants of adherence may help inform policy and communication strategies around the world

Insights from behavioral science

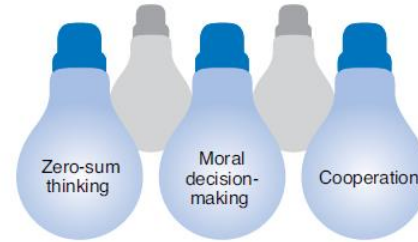*Van Bavel et al, Nature Human Behavior, 2020*
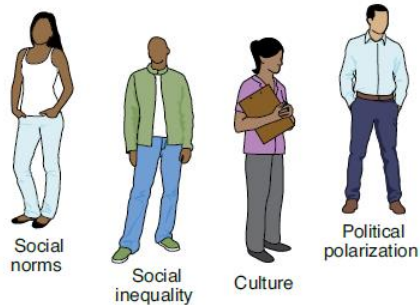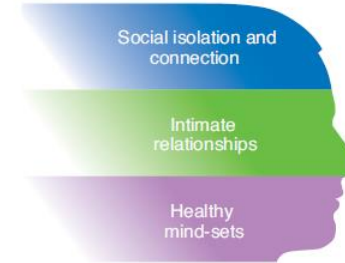
The birth of iCARE

- On March 11, 2020, less than 2 weeks after returning from spring break in New York, the pandemic had hit Montreal and our lockdown began

- By March 18th, it became apparent that public adherence to rapidly emerging and evolving policies was key to 'flattening the curve' - and we just wanted to help

- We said:

  - Let's put an international team together and create a behavioral-science-informed survey to answer the following research questions:

Questions and objective:

- **Questions**:
  - What are the sociodemographic, psychological, behavioral, physical/mental health, and economic *determinants of COVID-19-related policy adherence*
  - Which *policies, launched where, when, and for whom*, are most (and least) associated with adherence and most (and least) effective at reducing infection rates and mortality

- **Objective**:
  - To provide *data-driven recommendations to local and international governments* on how to optimize policy and communication strategies to improve policy adherence and health, economic, and quality of life outcomes associated with COVID-19

Methods: design

- We designed an international, multi-wave, cross-sectional, observational cohort study

- Includes a global convenience sample (snowball sampling) and representative sampling in target countries
  - All continents (except Antarctica)
  - All phases of the pandemic curve
  - LMIC and HIC
  - A local investigator willing to take the lead on representative sampling

Methods: design

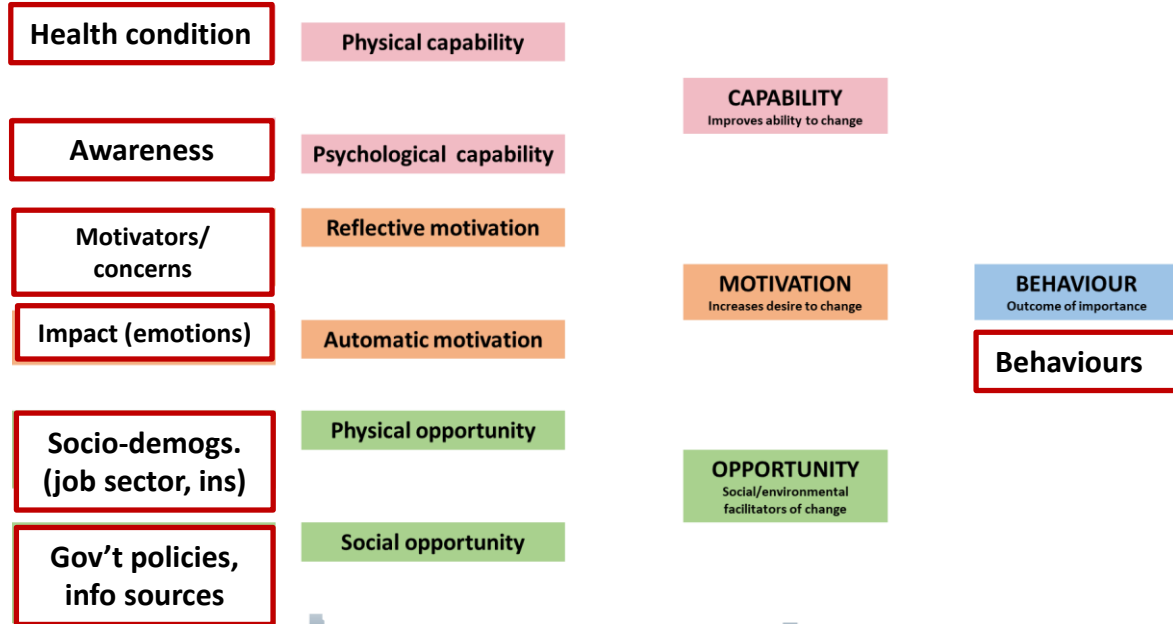| Country	Continent	Income*	Curve	Country lead
South Africa	Africa	UMIC	1	B. Cooetze, U. Stellenbosch
Brazil	South Am	UMIC	1	M. Cornelio. U Campinas
Columbia	South Am	UMIC	1	M. Lemos, Universidad EAFIT
Kenya	Africa	LMIC	2	J. Olenja, U Nairobi
Sweden	Europe	HIC	2	A. Berman, Karolinksa Instituet
UK	Europe	HIC	2	N. Paine, U Loughborough
Canada	North Am.	HIC	2	K. Lavoie, UQAM
USA	North Am.	HIC	2	S. Sheinfeld-Gorin, U Michigan
Taiwan	Asia	HIC	3	D. Hu, Tawain Municipal Hosp.
Ireland	Europe	HIC	3	G. Molloy, National U Galway
Italy	Europe	HIC	3	V. Raparelli, U Rome
Australia	Oceania	HIC	4	H. Teede, Monash U

Methods: survey

- We launched the first wave of the survey on March 27, 2020
  - Informed by the COM-B and Health Beliefs Models
- Modules:
  - Socio-demographics (aligned with other international studies)
  - Health status and health behaviors
  - Awareness of local public health policies and perceptions of government responses
  - Adherence to public health policy measures and behavioral intentions
  - COVID-19-related concerns
  - COVID-19-related impacts (health, mental health, social, work, economic) – wave 2
- External data:
  - Country-level policies (Oxford Policy Tracker)
  - Cases, deaths and recoveries (Johns Hopkins)
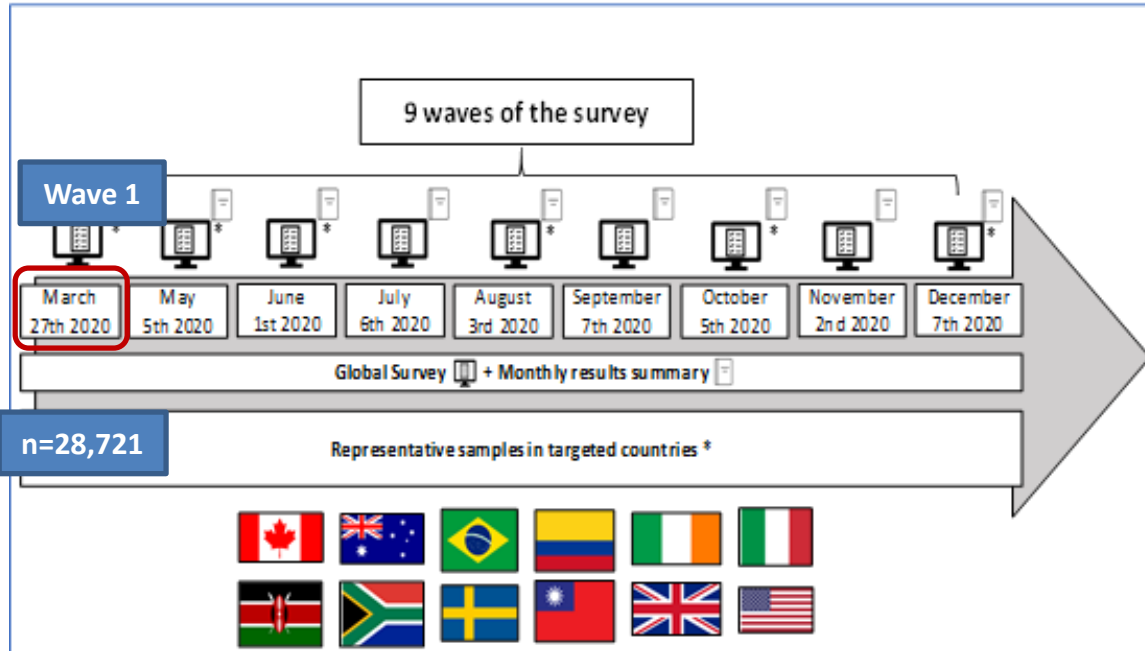 - Google mobility data
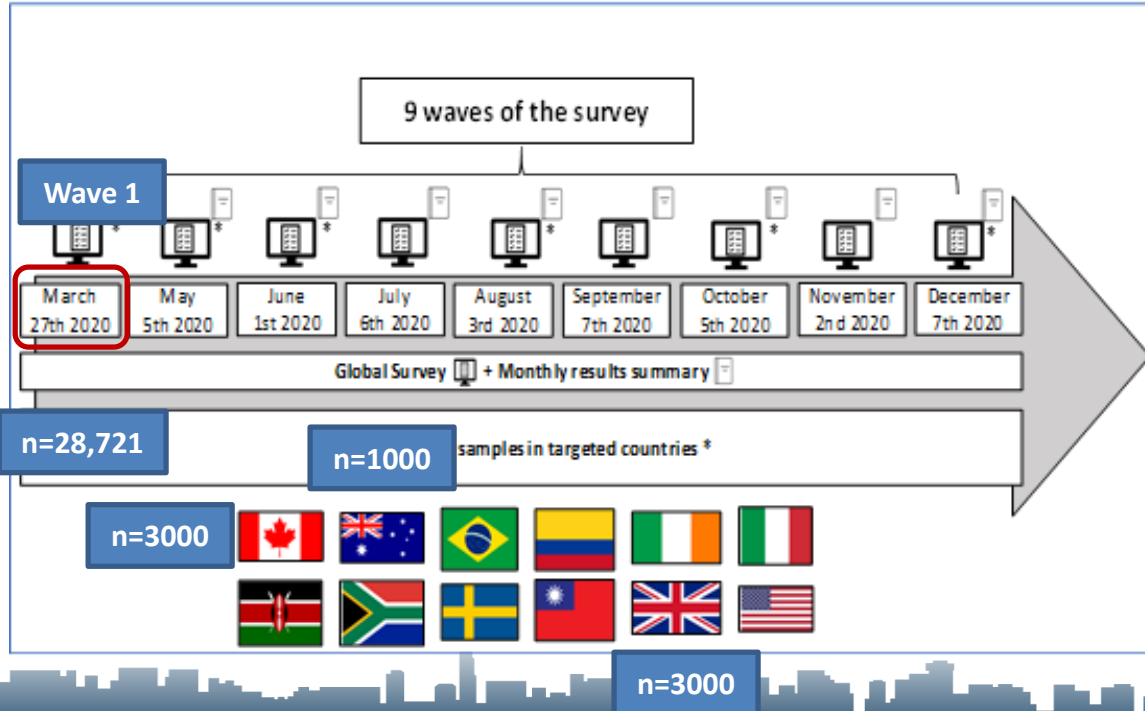
Survey Q's mapped onto COM-B

Q3, Q19 – 1-8 Q20, Q23, Q26	**Physical capability**
Q4, Q10 – 4-12, Q19 – 9-11, Q21	**Psychological capability**
Q5,Q6, Q7, Q9, Q10 – 1,2,3 Q11, Q12, Q17, Q25 Q51	**Reflective motivation**
Q16 – 1-5, 7-10 Q27-30, Q33	**Automatic motivation**
Q22, Q36, Q37-39, Q40-43 Q45, Q46, Q48 Q16 – 6, 11-14, 17	**Physical opportunity**
Q1, Q2, Q13,14,15; Q18, Q24, Q31, Q32, Q34, Q35, Q44, Q47, Q49-50 Q16 – 15,16,18-21	**Social opportunity**

CAPABILITY
Improves ability to change

MOTIVATION
Increases desire to change

OPPORTUNITY
Social/environmental
facilitators of change

BEHAVIOUR
Outcome of importance

Q8

Survey Q's mapped onto COM-B

Health condition — Physical capability

Awareness — Psychological capability

CAPABILITY
Improves ability to change

Motivators/ concerns — Reflective motivation

Impact (emotions) — Automatic motivation

MOTIVATION
Increases desire to change

BEHAVIOUR
Outcome of importance

Behaviours

Socio-demogs. (job sector, ins) — Physical opportunity

Gov't policies, info sources — Social opportunity

OPPORTUNITY
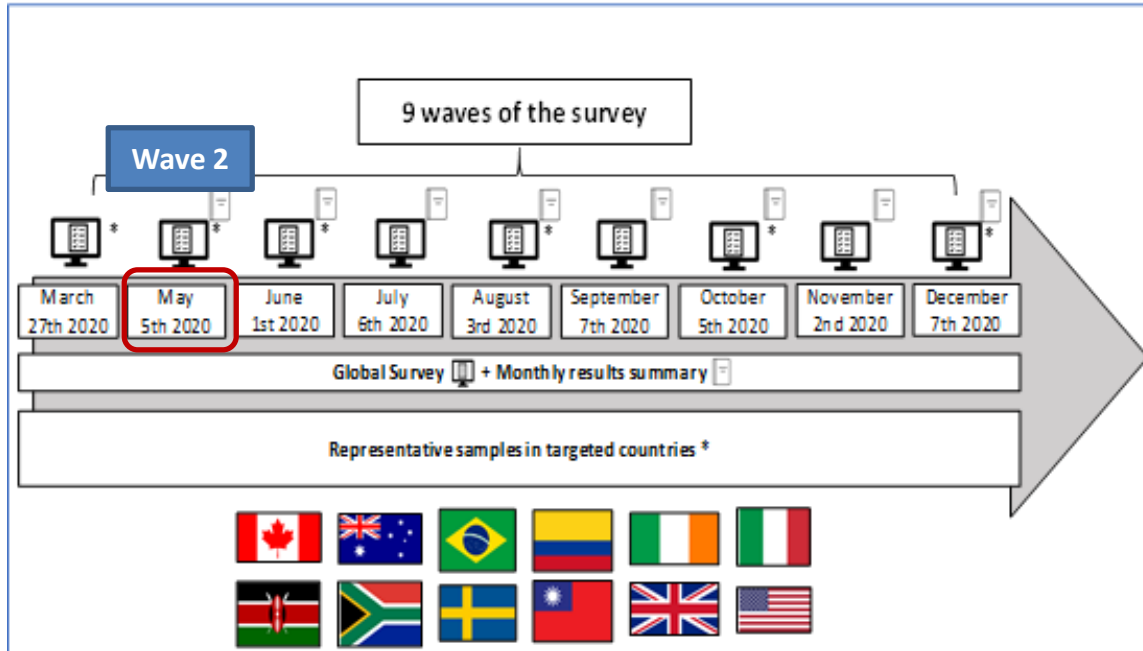Social/environmental facilitators of change

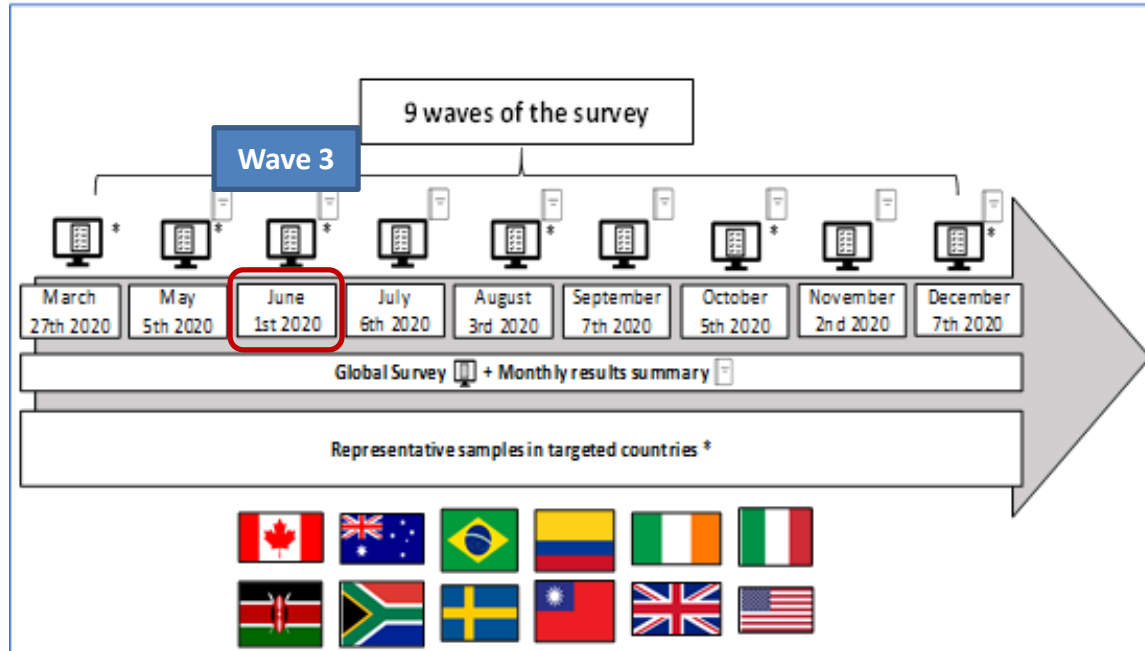# Methods: survey schedule

Methods: survey schedule

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Methods: survey schedule

Progress to date

- When we launched on March 27th, we had 93 international collaborators from 26 countries

- We now have **158 international collaborators** from **38 countries**

- Survey is available in 36 languages

Albanian	Japanese
Arabic	Kiswahili
Bengali	Lithuanian
Chinese (simplified)	Marathi
Chinese (traditional)	Persian
Croatian	Portuguese (Brazil)
Danish	Portuguese (Portugal)
Dutch	Romanian
English	Russian
French (Canada)	Serbian
French (France)	Slovak
German	Spanish
Greek	Swedish
Gujarati	Tagalog
Hebrew	Turkish
Hindi	Ukrainian
Indonesian	Urdu
Italian	Vietnamese

Recruitment to date

Variable	Wave 1
Period	March 27 to May 6th, 2020
Global sample (n)	28,721
Canadian representative sample	3000
UK representative sample	3000
AU representative sample	1000
Total:	35,787
Grand Total:	

Recruitment by country

Country	Wave 1
Period	March 27 to May 6th, 2020
Canada	7488
US	913
Brazil	740
Columbia	627
France	2487
Italy	1332
Taiwan	844
Kenya	680

Others: 13,610

![IBTN 2020 GLOBAL logo]

- Preliminary data from first wave (**March 27-April 15**)
  - **n=20,537**

- Primarily female, mean age = 41
- Mostly employed pre-COVID
- Mostly well educated
- Mostly middle-upper income
- One third have health condition
- 12% are essential service workers
- 10.7% who got tested were COVID+

*where % do not add up to 100%, 'prefer not to answer' was not coded; ± includes cardiovascular disease, chronic lung disease, cancer, autoimmune disease, hypertension, diabetes, obesity, other chronic inflammatory condition

Variable	Global Mean (%)
	N=20,537
Sociodemographics	
Sex (female)	69%
Age	
8-29	26.5%
30-69	68%
70+	5%
Current employment status¶	
Employed	74%
Unemployed	18%
Student	8%
Household income*	
Bottom third	12%
Middle third	50%
Top third	27%
Residential dwelling*	
Rural	1.5%
Suburban	24%
Urban	60%
Key subgroups	
At-risk health condition±	33%
Depressive disorder	9%
Anxiety disorder	16%
Essential service worker	12%
COVID-19 status	
Got tested for COVID-19	2.3%
Of those who got tested - results were positive for COVID-19	10.7%

Results plan

- Perception of government policies

- Adherence to prevention measures

- COVID-19-related concerns

- Association between strength of concerns and adherence
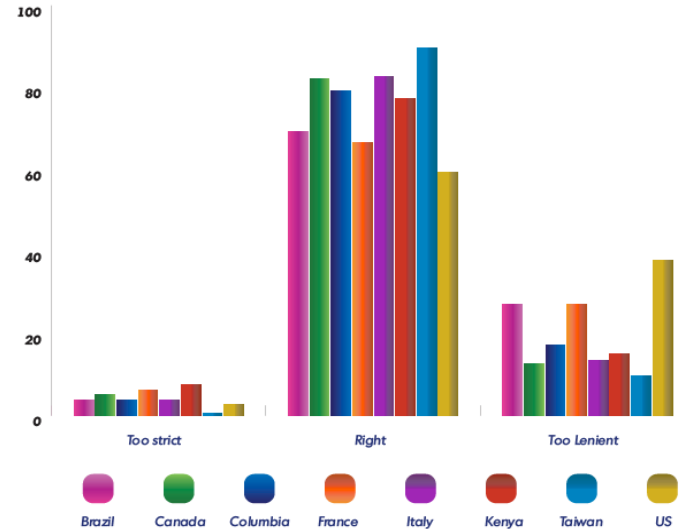
- Motivators of adherence

What do you think of the **actions taken** by your government or local health authority to prevent and/or reduce the spread of COVID-19?


Perceptions of government policies by AGE

Perceptions of government policies by COUNTRY
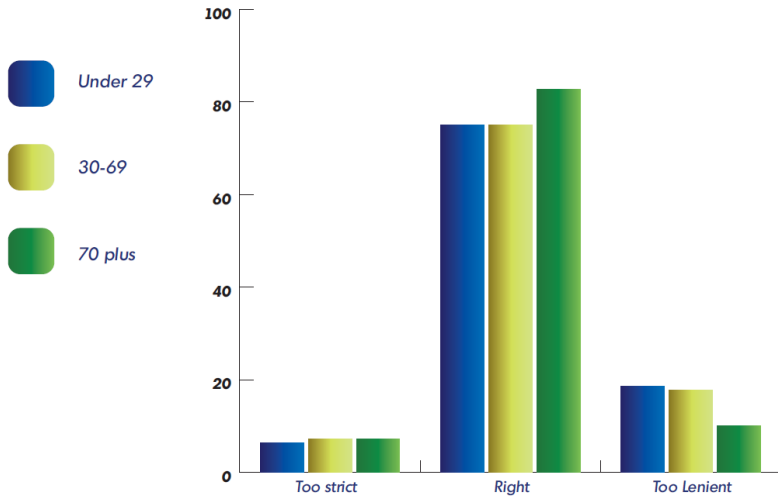
Fewer younger aged groups are satisfied with the policies – those from younger age groups find them too lenient, p<.001

More people from **Brazil, France** and the **US** find policies too lenient, p<.001

Indicate the **frequency with which you have engaged in each action/behavior** in the last 7 days

Proportion of people worldwide reporting engaging in these behaviors most of the time
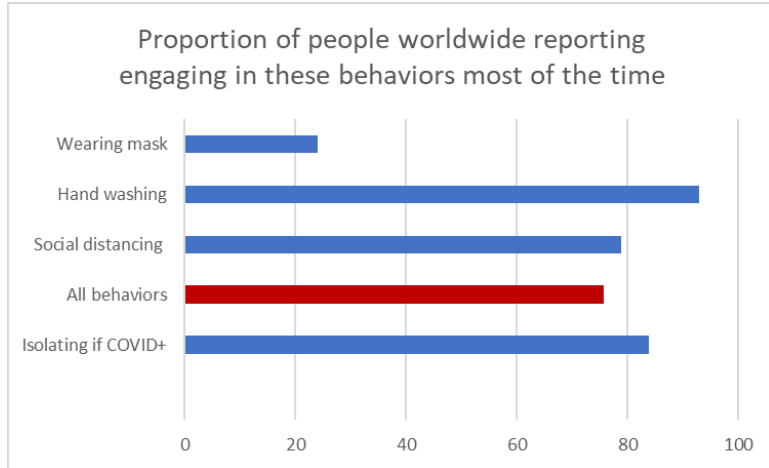
With the exception of wearing a mask, most (**78%**) of respondents report adhering to major prevention measures at least most of the time

Proportion of people worldwide reporting NOT engaging in these behaviors most of the time
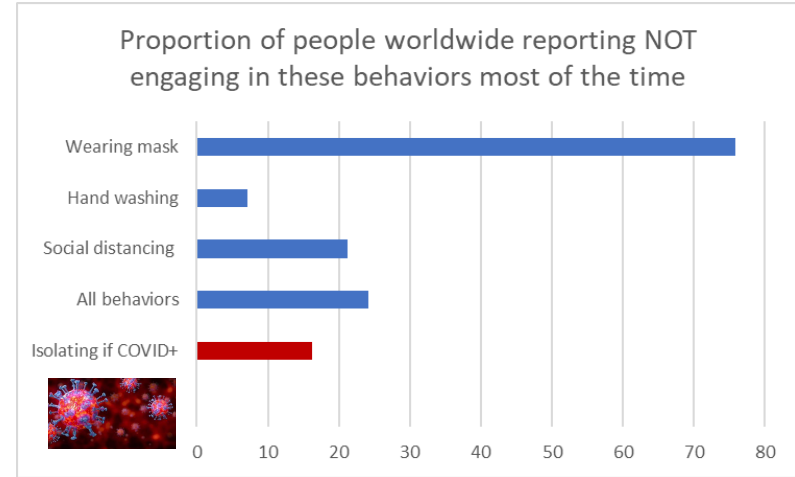
More than **16%** of people with confirmed or suspected COVID-19 worldwide report **NOT self-isolating** at least most of the time
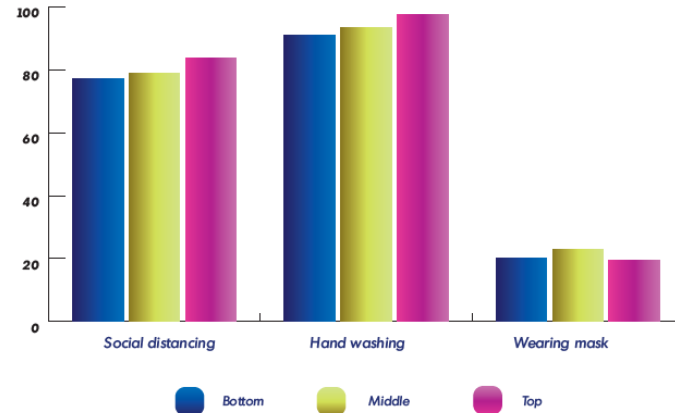
Indicate the **frequency with which you have engaged in each action/behavior** in the last 7 days

Self-reported adherence to prevention measures (most of the time) by AGE
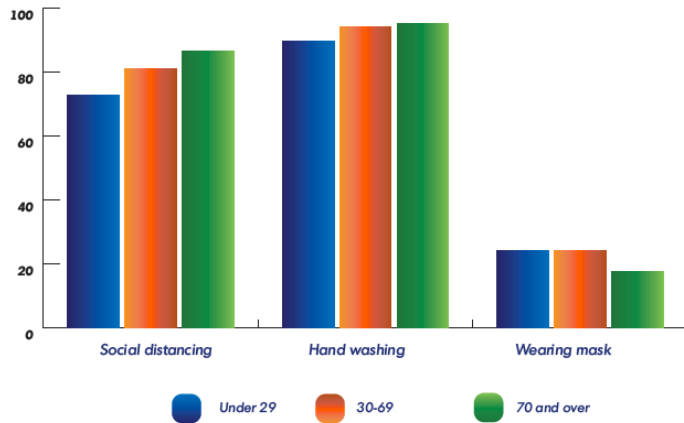
Adherence is worse among **younger age groups** compared to older (few are wearing a mask), p<.001
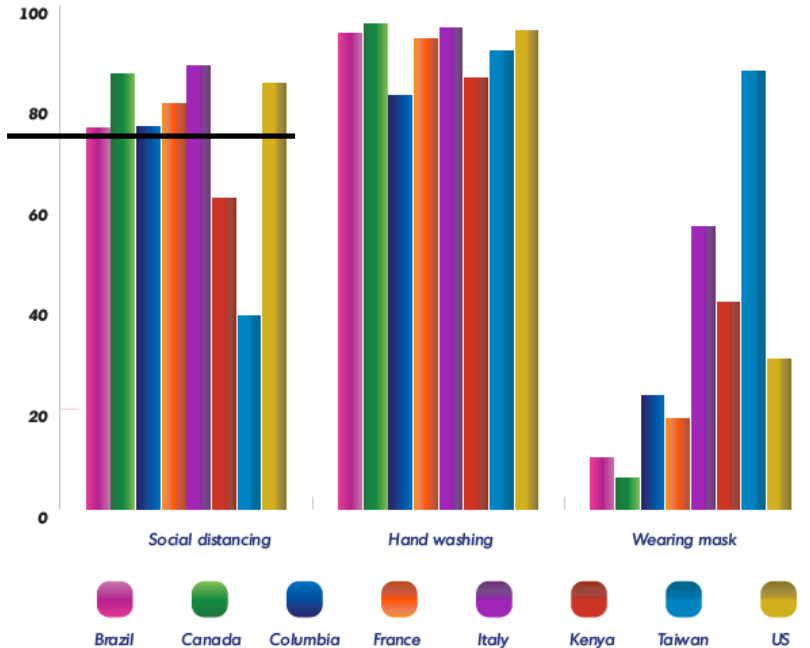

Self-reported adherence to prevention measures (most of the time) by INCOME TERCILE

Adherence is better among **higher income** groups compared to lower (few are wearing a mask), p<.001

Indicate the **frequency with which you have engaged in each action/behavior** in the last 7 days
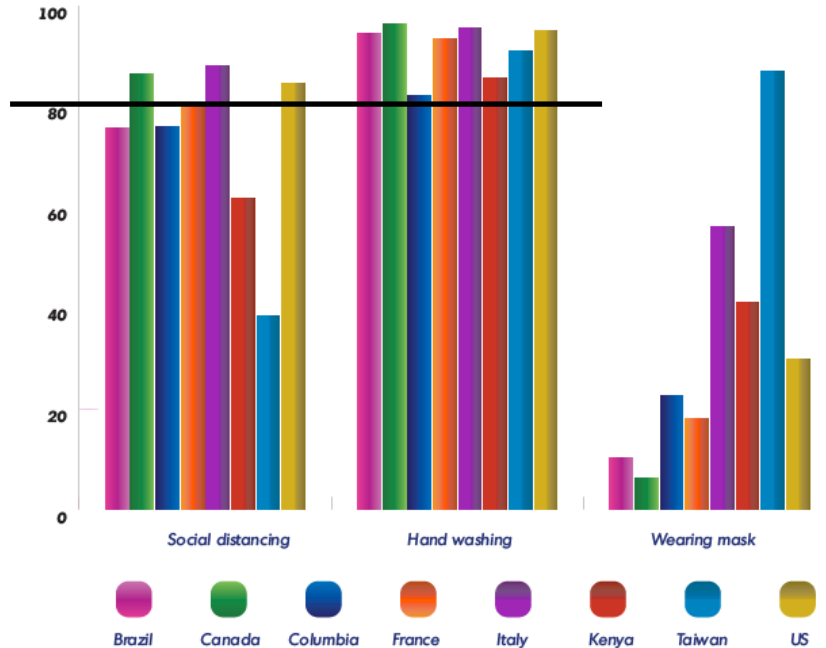

Self-reported adherence to prevention measures (most of the time) by COUNTRY

- Over **75% of people from all countries** except Taiwan and Kenya are **social distancing** at least most of the time (p<.001)

Indicate the **frequency with which you have engaged in each action/behavior** in the last 7 days
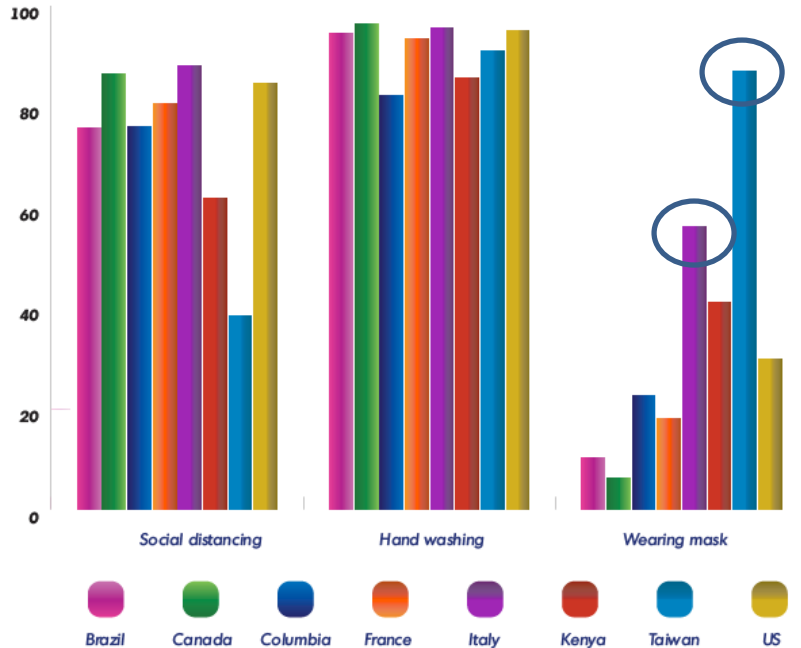

Self-reported adherence to prevention measures (most of the time) by COUNTRY

- Over **75% of people from all countries** except Taiwan and Kenya are **social distancing** at least most of the time (p<.001)

- At least **80% of people from all countries are hand washing** at least most of the time

Indicate the **frequency with which you have engaged in each action/behavior** in the last 7 days
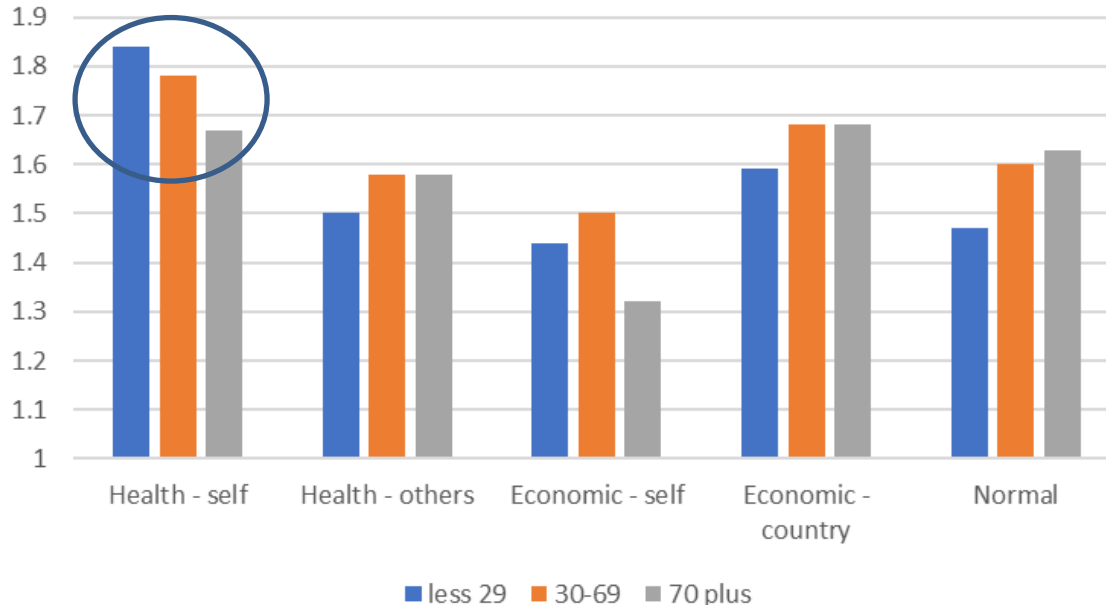
IBTN 2020 GLOBAL

Self-reported adherence to prevention measures (most of the time) by COUNTRY

- Over **75% of people from all countries** except Taiwan and Kenya are **social distancing** at least most of the time (p<.001)

- At least **80% of people from all countries are handing washing** at least most of the time

- **Few countries are wearing masks**; only those from Taiwan (88%) and Italy (60%) are doing this regularly

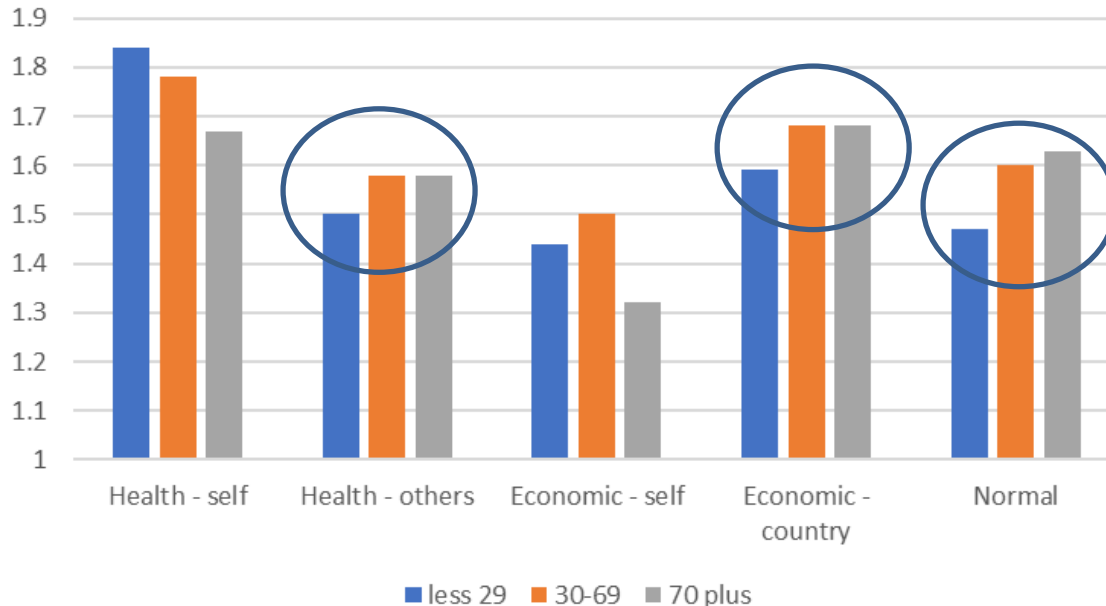# Please indicate the extent of your COVID-19 related **concerns**:

Mean level of concerns - **Global, by age group**
(0-3: not at all to great extent)

Categories: Health - self, Health - others, Economic - self, Economic - country, Normal

Legend: less 29, 30-69, 70 plus

- **Under 29's** were *most* concerned about **personal health**

Please indicate the extent of your COVID-19 related **concerns**:

Mean level of concerns - **Global, by age group**
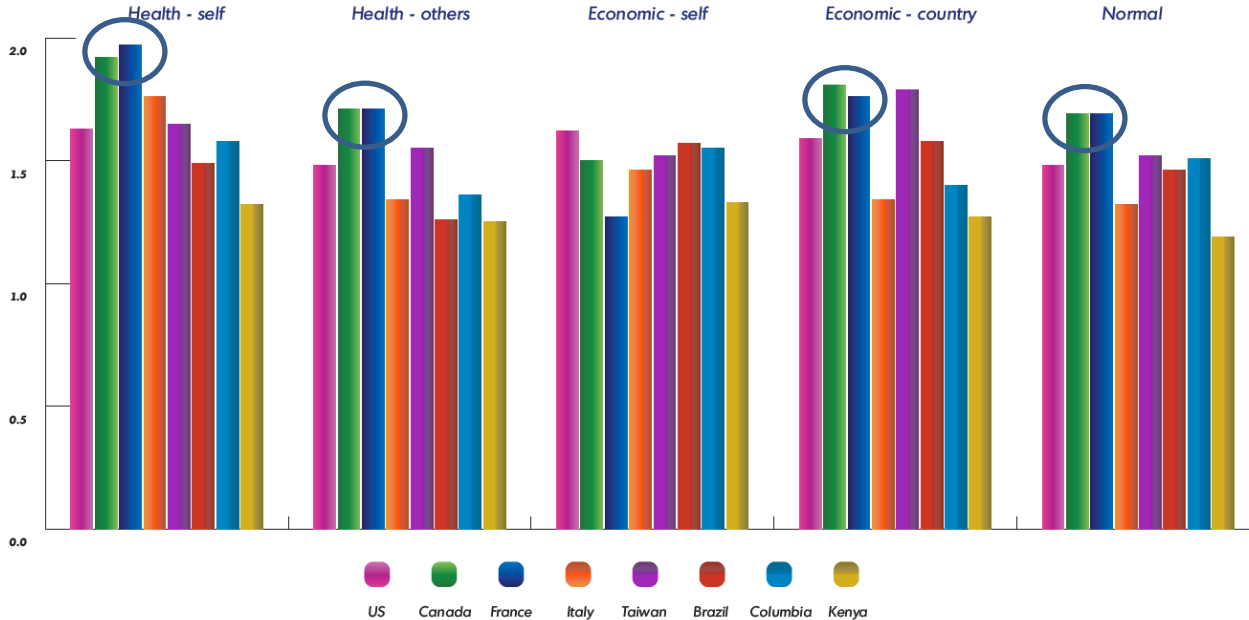(0-3: not at all to great extent)

- **Under 29's** were *most* concerned about **personal health**
- They were *less concerned* with others' health, the economy, and getting back to normal compared to older age groups

(p's<.01)

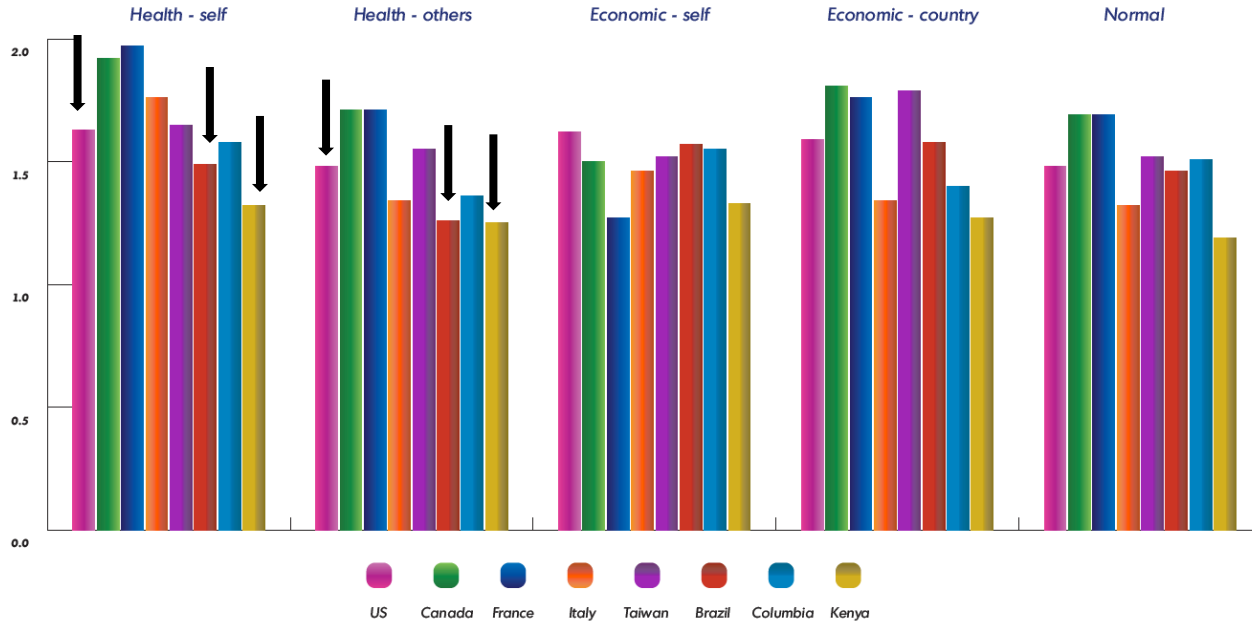# Please indicate the extent of your COVID-19 related **concerns**:

Ratings of concerns by country

France and Canada had the highest relative levels of concerns overall except for personal economic concerns

Please indicate the extent of your COVID-19 related **concerns**:
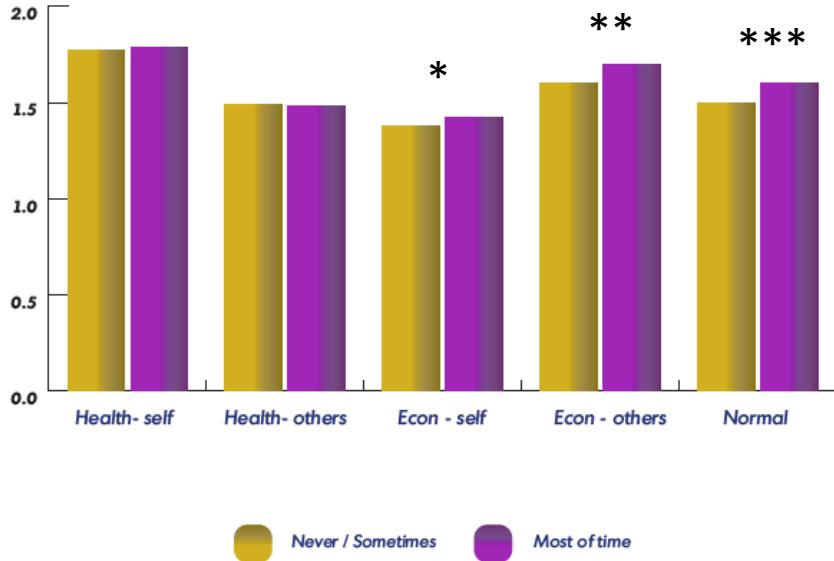

Ratings of concerns by country

Kenya, Brazil, and the US were among those with the lowest relative concerns for personal and others' health; **Kenya** had the lowest concerns overall.

Association between concern (type) and adherence to COVID-19 preventive measures:

Association between concern type and adherence to prevention measures

Interestingly, only **economic concerns** (personal and about the general economy) and **'getting back to normal'** were significant predictors of *better adherence* to prevention measures

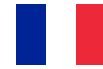*p's<.001   **p's<.01   ***p's<.0001

What measures would **most** convince you to practice social distancing?

- Providing information about:
  1. How COVID-19 is spread
  2. How behaviour is slowing COVID-19 spread
  3. How behaviour is saving lives

Summary

- Most people (75%) are adhering to major prevention measures (hand washing, social distancing)
    - Except Taiwan and Kenya; only Taiwan (Italy) are wearing masks
    - Younger age groups (>29) are less adherent than older age groups
- But…16% of COVID+ are NOT self-isolating

- Though people were generally concerned about their *personal* health:
    - Only economic concerns and getting back to 'normal' were significantly associated with better adherence
- Reinforcing good behaviour (e.g., how behavior is saving lives) was more likely to motivate adherence than punishment
    - True worldwide

Some recommendations

- Public health messages should provide information about how adherence is helping (rather than threaten with fines or other punishments)
  - Should emphasize how behaviour now can help the economy and get us all back to 'normal' quicker
- Remaining issues and next steps:
  - Need to increase adherence to mask wearing (new policies)
  - Need to understand why so many COVID+ are not self-isolating:
    - capability? motivation? opportunity?
  - How are the impacts of the pandemic affecting behaviour over time?

Acknowledgments

Collaborators

- **AUSTRALIA**: Jacqueline Boyle, PhD, Monash University; Joanne Enticott, PhD, Monash University; Helena Teede, MD, Monash University;

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