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ONTARIO COVID-19 & KIDS MENTAL HEALTH STUDY

Mostly worse, occasionally better:

The first wave of the COVID-19 pandemic &
the mental health of children and adolescents in Ontario

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DISCLOSURES

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- None of the presenters have potential conflicts of interest to declare.

ONTARIO COVID-19 & KIDS MENTAL HEALTH STUDY TEAM



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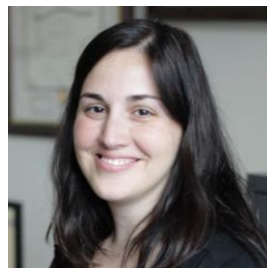
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Psychiatry
UNIVERSITY OF TORONTO



Ontario
Ministry of Health



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LEARNING OBJECTIVES

1. Become familiar with what is known about the impacts of public health measures on child and youth mental health in a global context
2. Learn the rates of deterioration and improvement in child and youth mental health during the first wave of the pandemic compared to before the pandemic
3. Identify the variables associated with deterioration and improvement in child and youth mental health during the first wave of the pandemic
4. Explore ideas for ameliorating child and youth mental health during subsequent waves of the pandemic

PRESENT KNOWLEDGE

Emerging literature from countries with a high prevalence of COVID-19 disease suggest large general psychological impact.

- Increased prevalence of depression symptoms (26.5%) in children grades 2-6 in Hubei, China¹
- Increased prevalence of depression symptoms (43.7%) and anxiety symptoms (37.4%) in youth ages 12-18 in China²
- Increase in peer problems in children ages 0-9 in Japan³
- Decrease in quality of life (40.2%), increase in anxiety (24.1%) in children ages 7-17 in Germany⁴
- Increase in behavioural health problems (14%) in children < 18 years old in USA⁵

1. Xie et al., JAMA Pediatrics, 2020
2. Zhou et al., European Child and Adolescent Psychiatry, 2020
3. Ishimoto et al., pre-print, 2020
4. Ravens0Sieberer et al., pre-print, 2020
5. Patrick et al., Pediatrics, 2020

KNOWLEDGE GAP

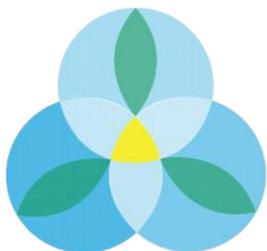
- Few insights into the
 - Mental health impacts beyond depression and anxiety
 - Children and adolescents by age group, rather than just “children”
 - Children and adolescents in Canada with pre-existing mental health disorders, who are expected to be more vulnerable
 - Relative impacts of COVID-associated changes

ONTARIO COVID & KIDS MENTAL HEALTH COLLABORATION

4 COHORTS, 1 GOAL



POND



Psychiatry
Research
SickKids[®]



To improve our understanding of the mental health and wellbeing of children, parents, and families in Canada during the COVID-19 pandemic.

OBJECTIVES

Objective 1

To examine the prevalence of mental health change status with parent-report 2-18 years old, child/adolescent report 10-18 years old compared to before the pandemic in 6 domains of mental health:

- Depression/mood
- Anxiety/emotional problems
- Irritability/conduct problems
- Attention
- Hyperactivity
- OCD symptoms

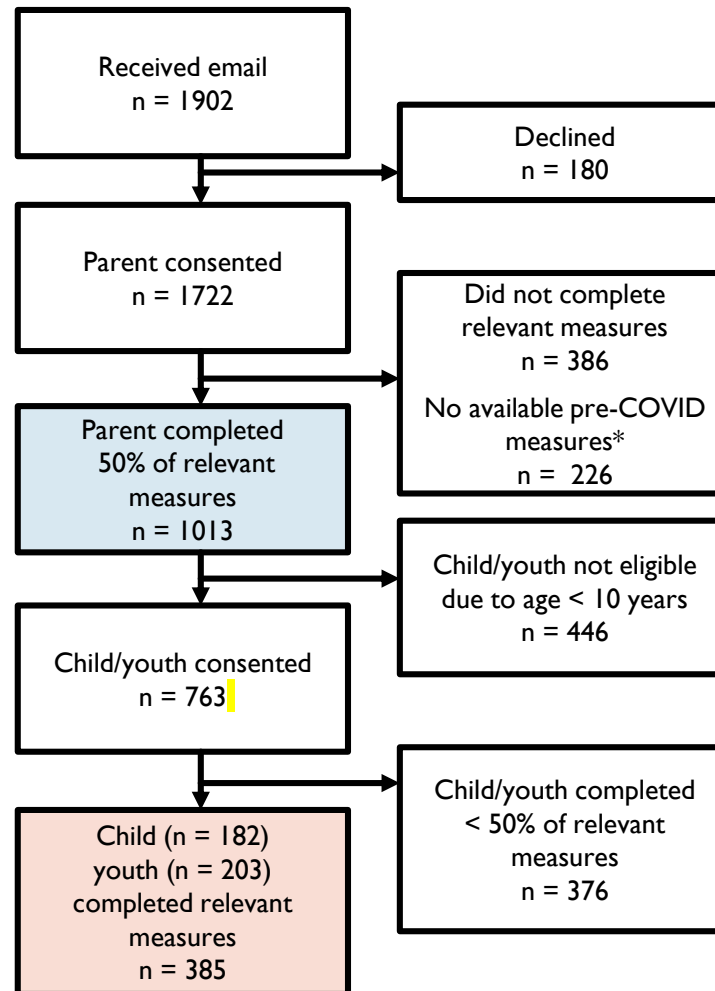
Objective 2

To determine the relative impacts on mental health status change in children and adolescents ages 6-18 of

- Emergency Measures compliance
- Stress associated with social changes
- COVID exposure
- while controlling for
 - household income
 - EM economic impacts
 - child assigned sex
 - child age
 - child race/ethnicity
 - pre-morbid psychiatric diagnosis

PARTICIPANTS

Data collection:
April 15, 2020 to June 19, 2020



PARTICIPANT CHARACTERISTICS

N = 1013



Age:

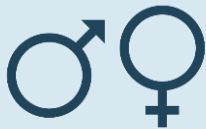
Average: 10.46 years
Range: 2 - 18 years



Ethnicity/Ancestry:
60.6% European



Income:
72.8%
≥ \$80,000 /year



Sex assigned at birth:
56.6% male



Mental Health:
61.9%
previous psychiatric
diagnosis



COVID-19:
4.2% exposed

OBJECTIVE I

To examine the prevalence of mental health change status with parent-report 2-18 years old, child/adolescent report 10-18 years old compared to before the pandemic in 6 domains of mental health:

- Depression
- Anxiety / Emotional problems
- Irritability / Conduct problems
- Attention
- Hyperactivity
- OCD symptoms

Analysis:

- Frequency estimates summing to 100%

OUTCOME:

IMPROVED, UNCHANGED, DETERIORATED



Children
2-5 years old

- Emotional Problems (anxiety)
- Conduct Problems (irritability)
- Hyperactivity





Children / Adolescents
6-18 years old

- Depression/mood
- Anxiety
- Irritability
- Attention
- Hyperactivity
- OCD symptoms

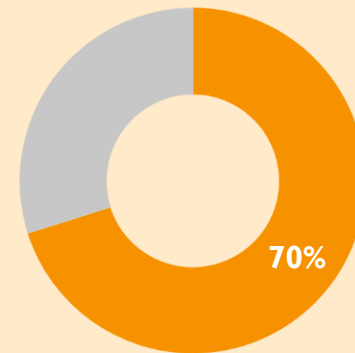
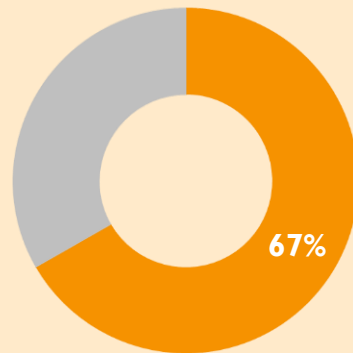
OBJECTIVE I RESULTS:

CHANGE IN ANY DOMAIN

 Children
2-5 years old


 Children / Adolescents
6-18 years old


Deterioration
in at least
1 domain



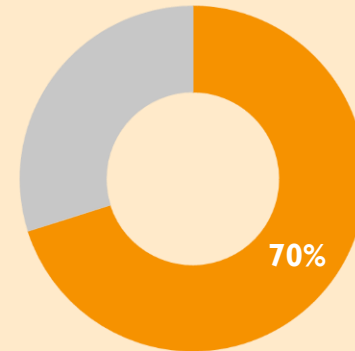
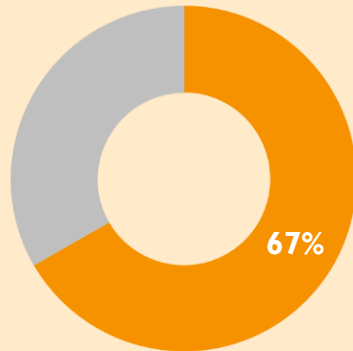
OBJECTIVE I RESULTS:

CHANGE IN ANY DOMAIN

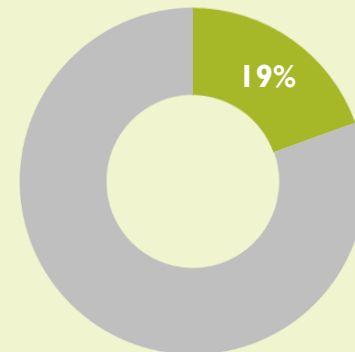
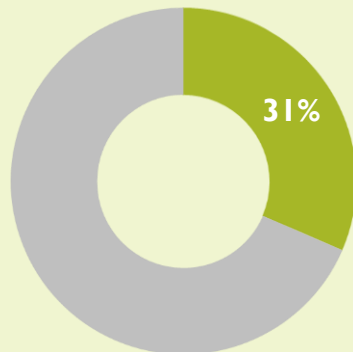
 Children
2-5 years old

 Children / Adolescents
6-18 years old

Deterioration
in at least
1 domain



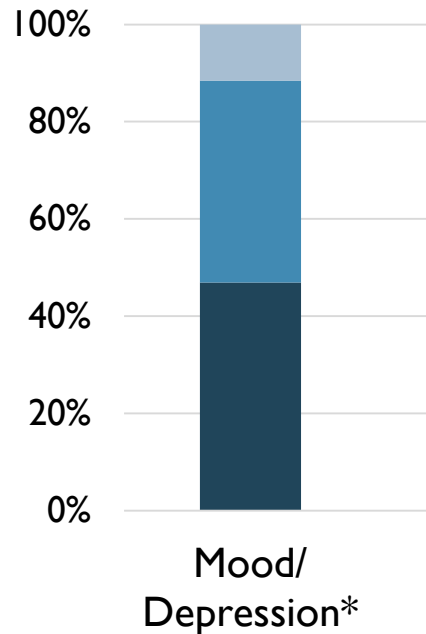
Improvement
in at least
1 domain



OBJECTIVE 1 RESULTS:

CHANGE IN *ALL* DOMAINS

Prevalence of Mental Health Status Change
Parent-report, All ages



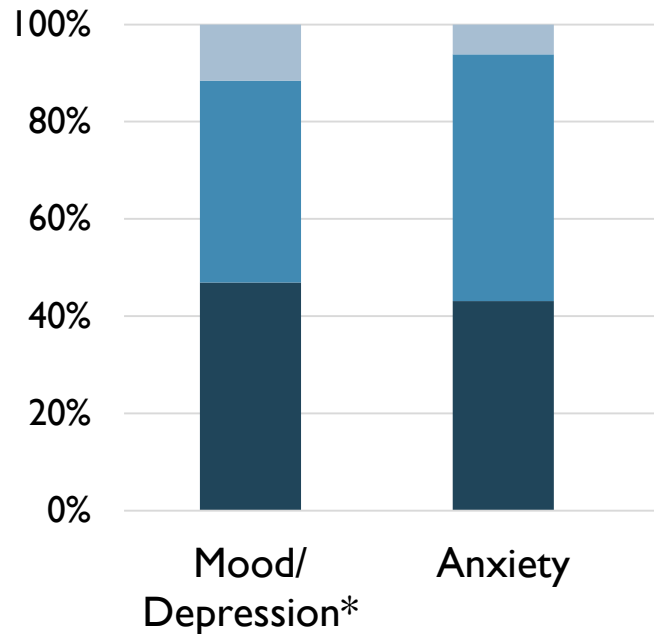
Parent-report
improved
unchanged
deteriorated

* Only measured in children/adolescents 6-18 years old

OBJECTIVE 1 RESULTS:

CHANGE IN *ALL* DOMAINS

Prevalence of Mental Health Status Change
Parent-report, All ages



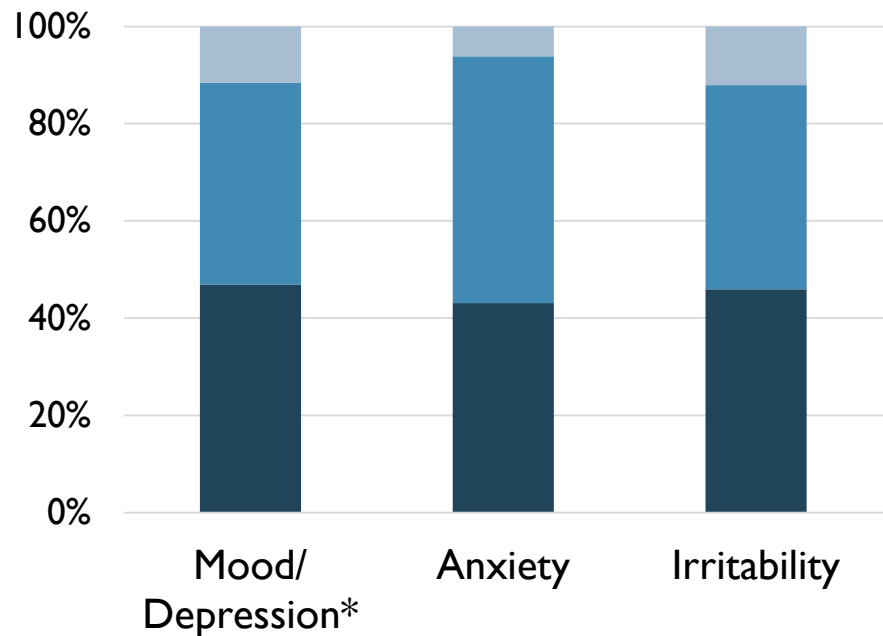
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OBJECTIVE 1 RESULTS:

CHANGE IN *ALL* DOMAINS

Prevalence of Mental Health Status Change
Parent-report, All ages



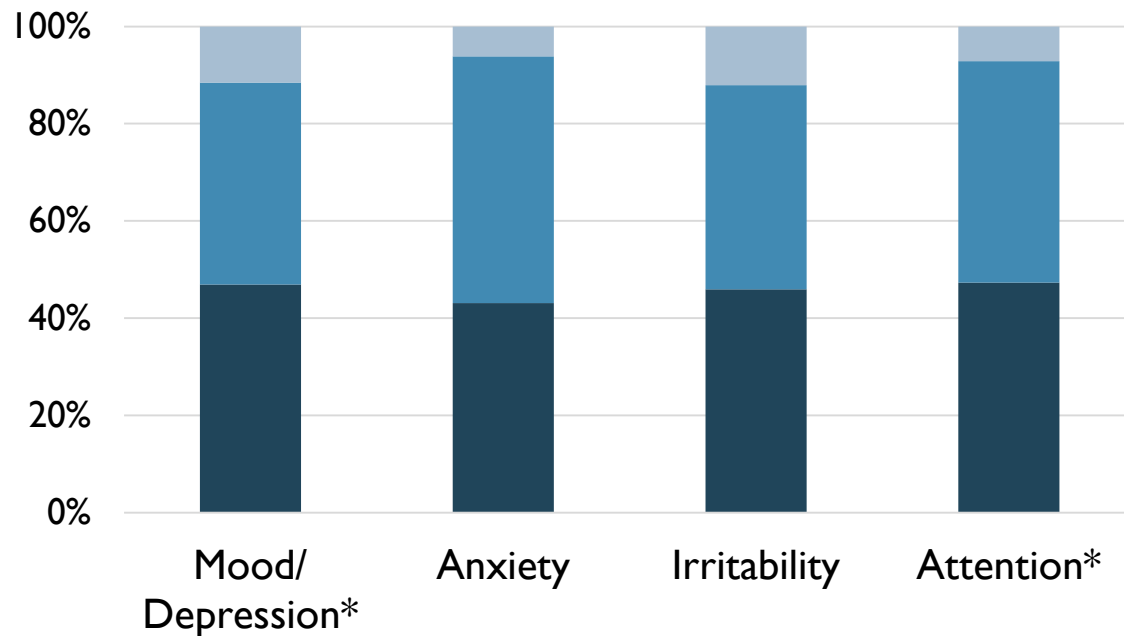
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OBJECTIVE 1 RESULTS:

CHANGE IN *ALL* DOMAINS

Prevalence of Mental Health Status Change
Parent-report, All ages



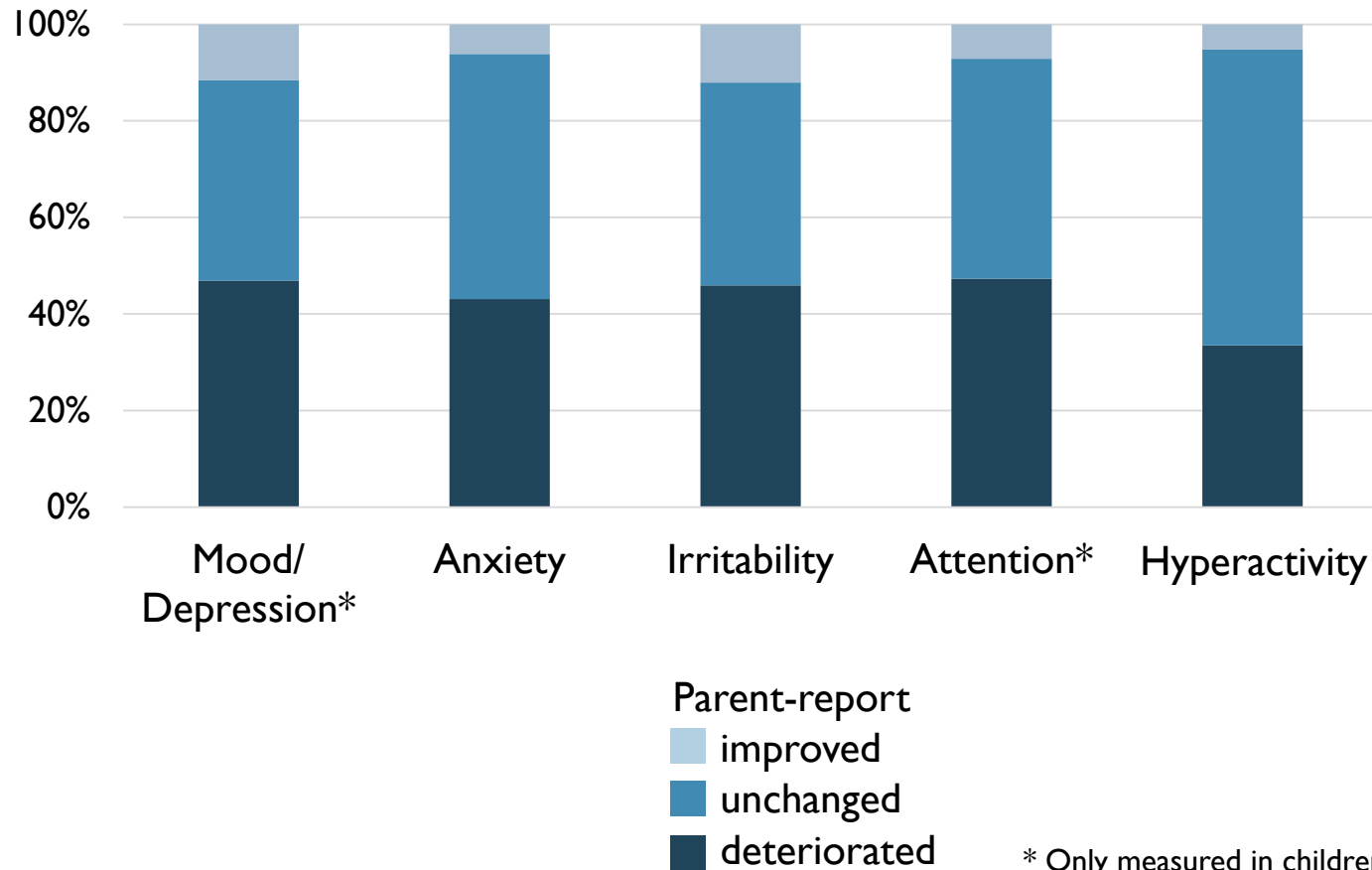
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OBJECTIVE 1 RESULTS:

CHANGE IN *ALL* DOMAINS

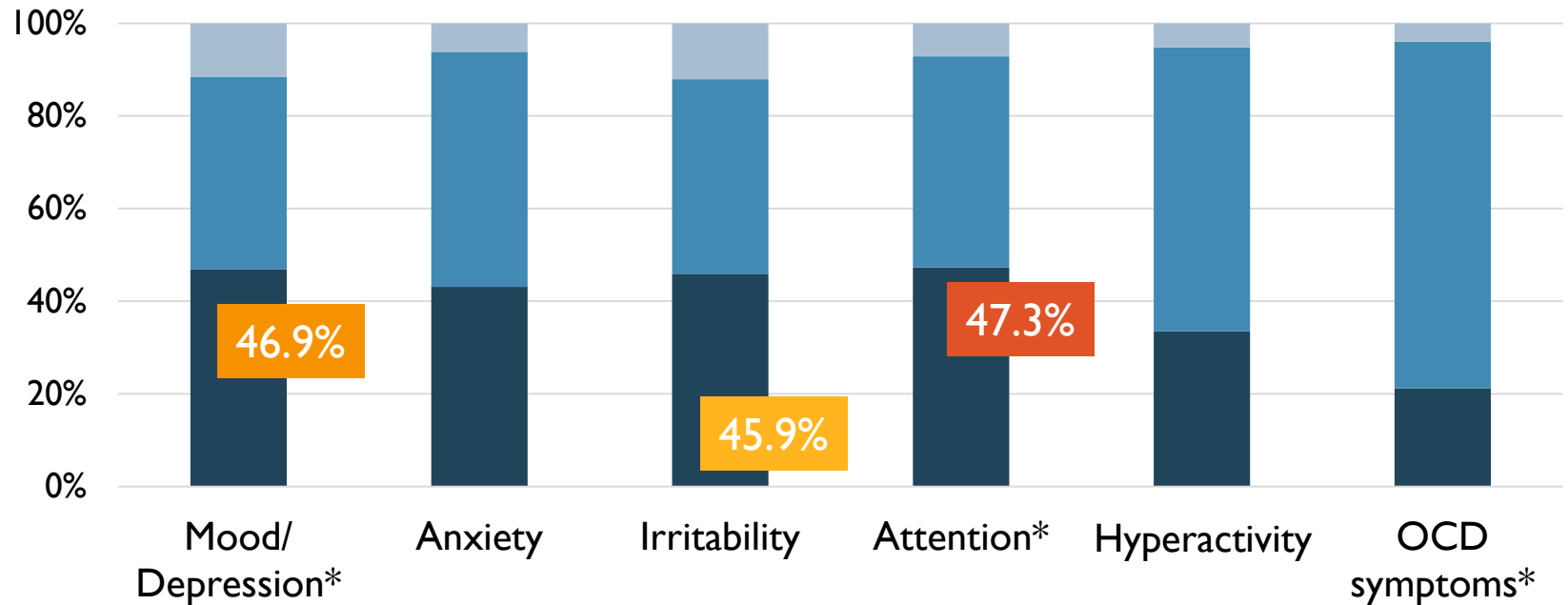
Prevalence of Mental Health Status Change
Parent-report, All ages



OBJECTIVE 1 RESULTS:

CHANGE IN *ALL* DOMAINS

Prevalence of Mental Health Status Change
Parent-report, All ages



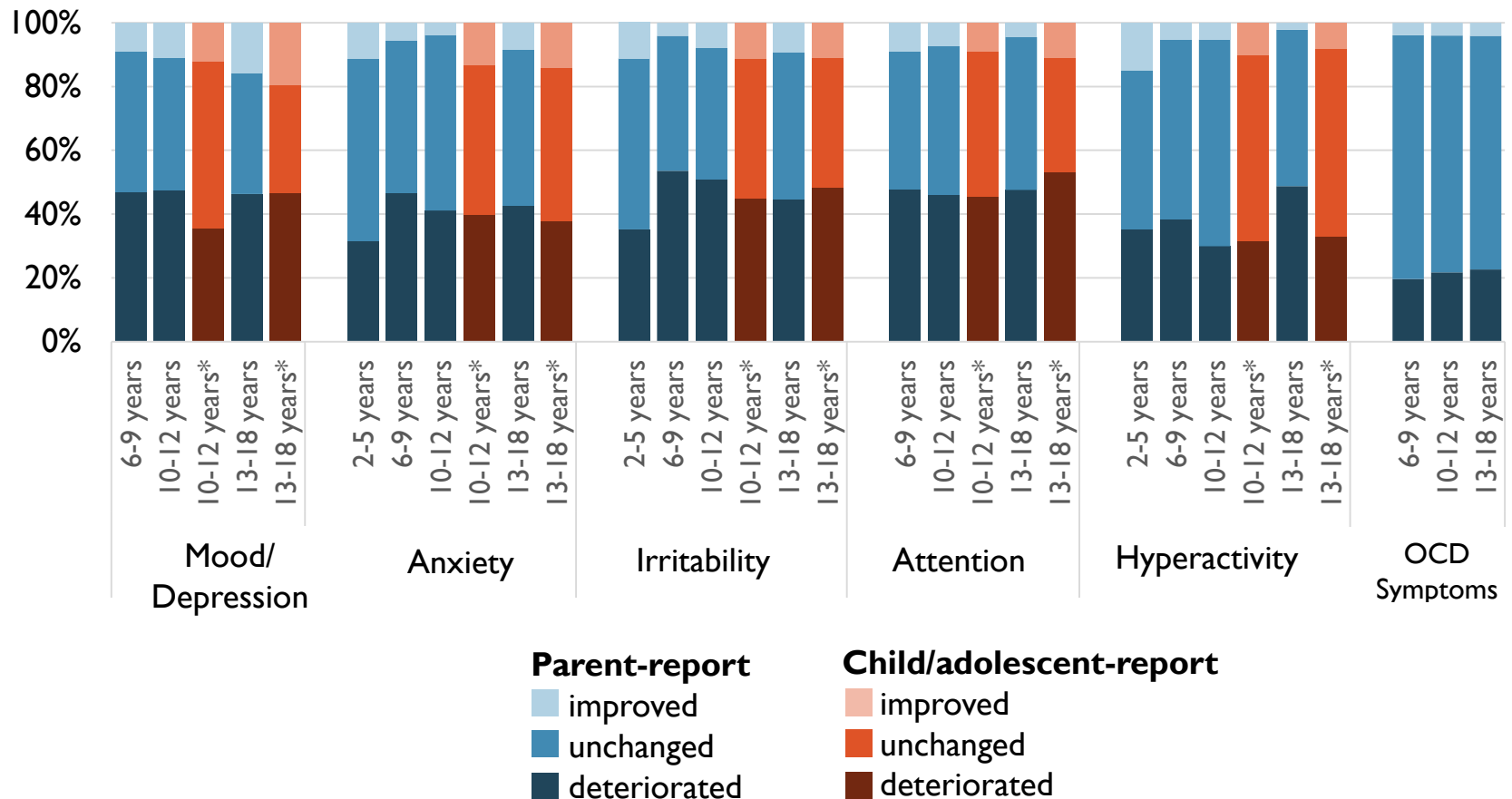
Parent-report
improved
unchanged
deteriorated

* Only measured in children/adolescents 6-18 years old

OBJECTIVE I RESULTS:

CHANGE IN DOMAINS *BY AGE GROUP*

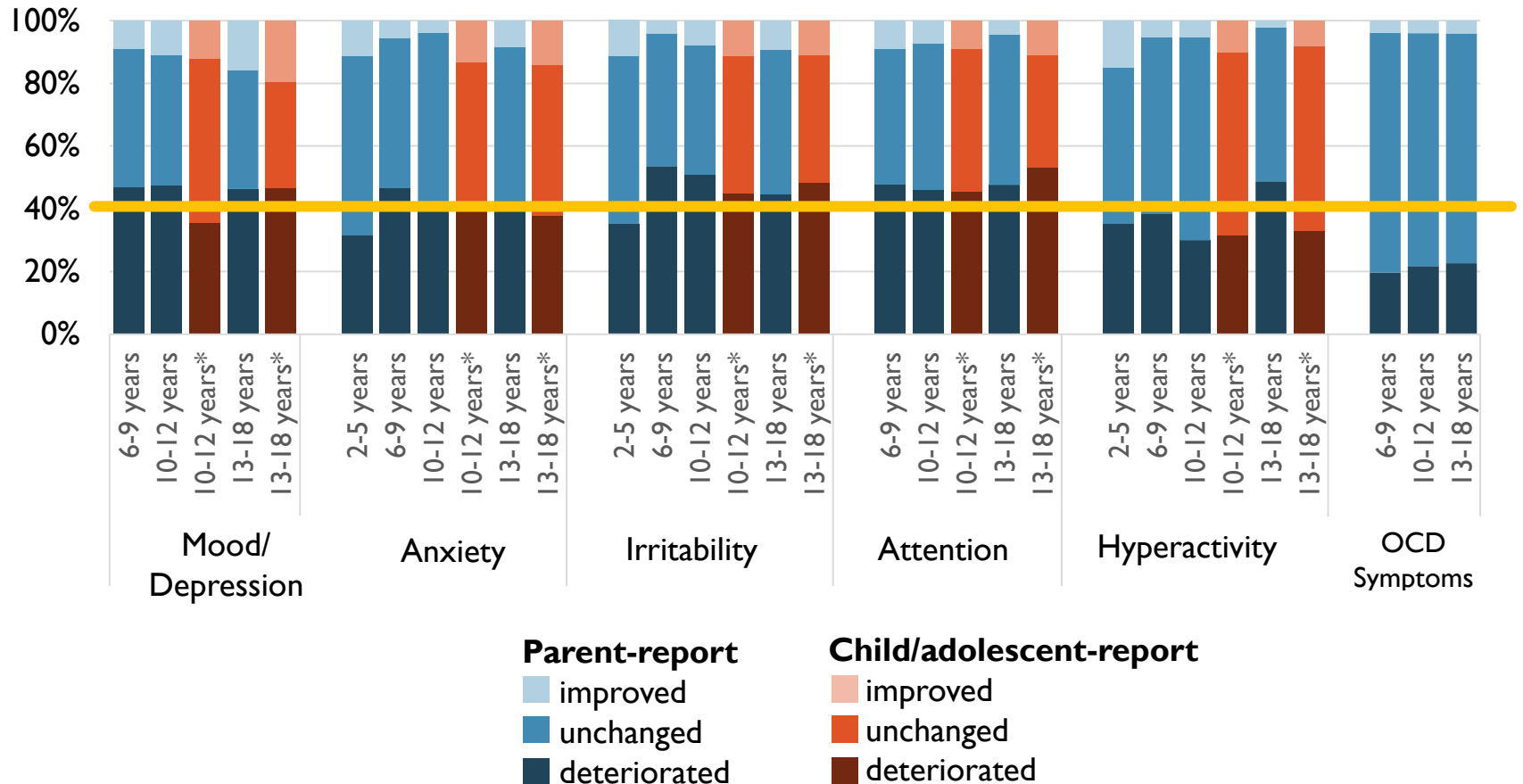
Prevalence of Mental Health Status Change by Domain
by Age Group and by Informant



OBJECTIVE I RESULTS:

CHANGE IN DOMAINS *BY AGE GROUP*

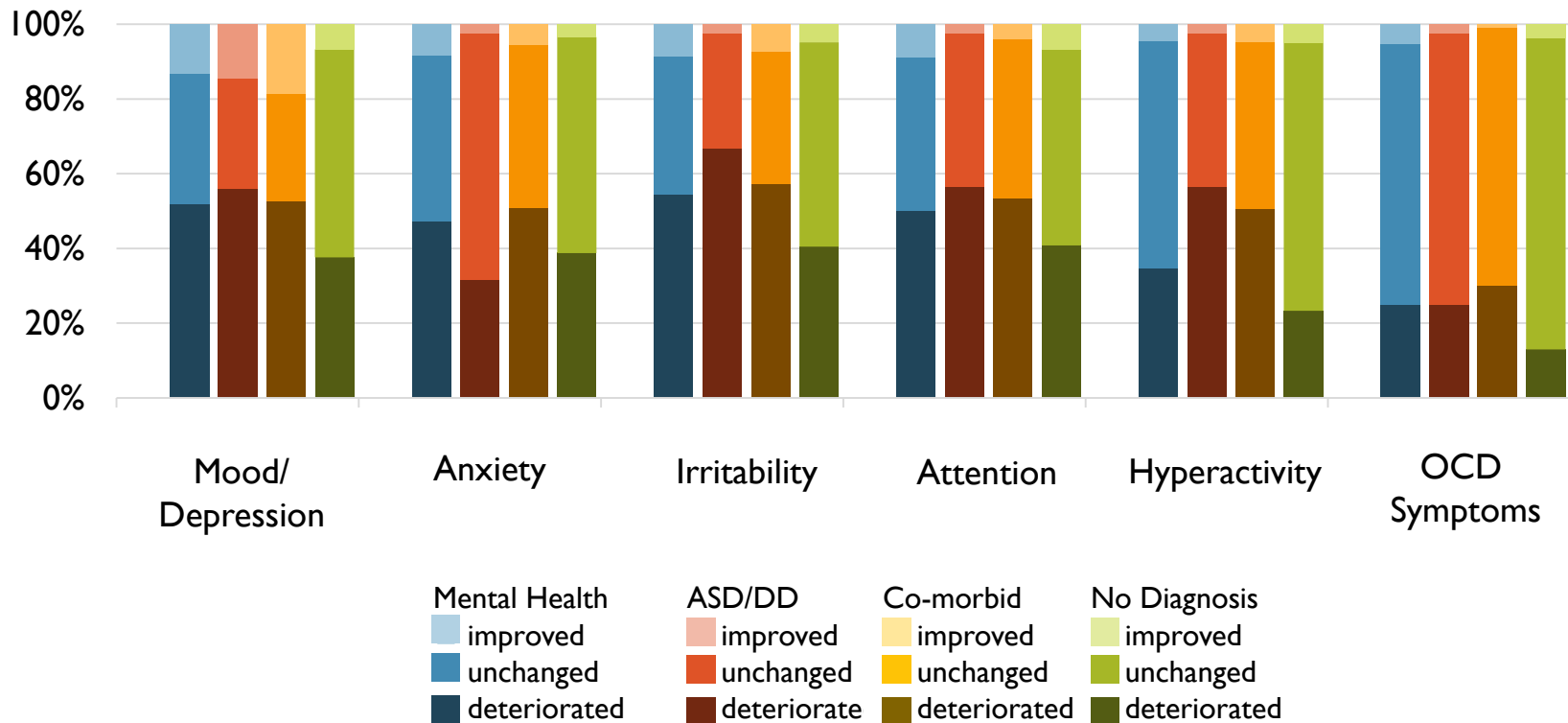
Prevalence of Mental Health Status Change by Domain
by Age Group and by Informant



OBJECTIVE 1 RESULTS:

CHANGE IN DOMAIN *BY DIAGNOSIS*

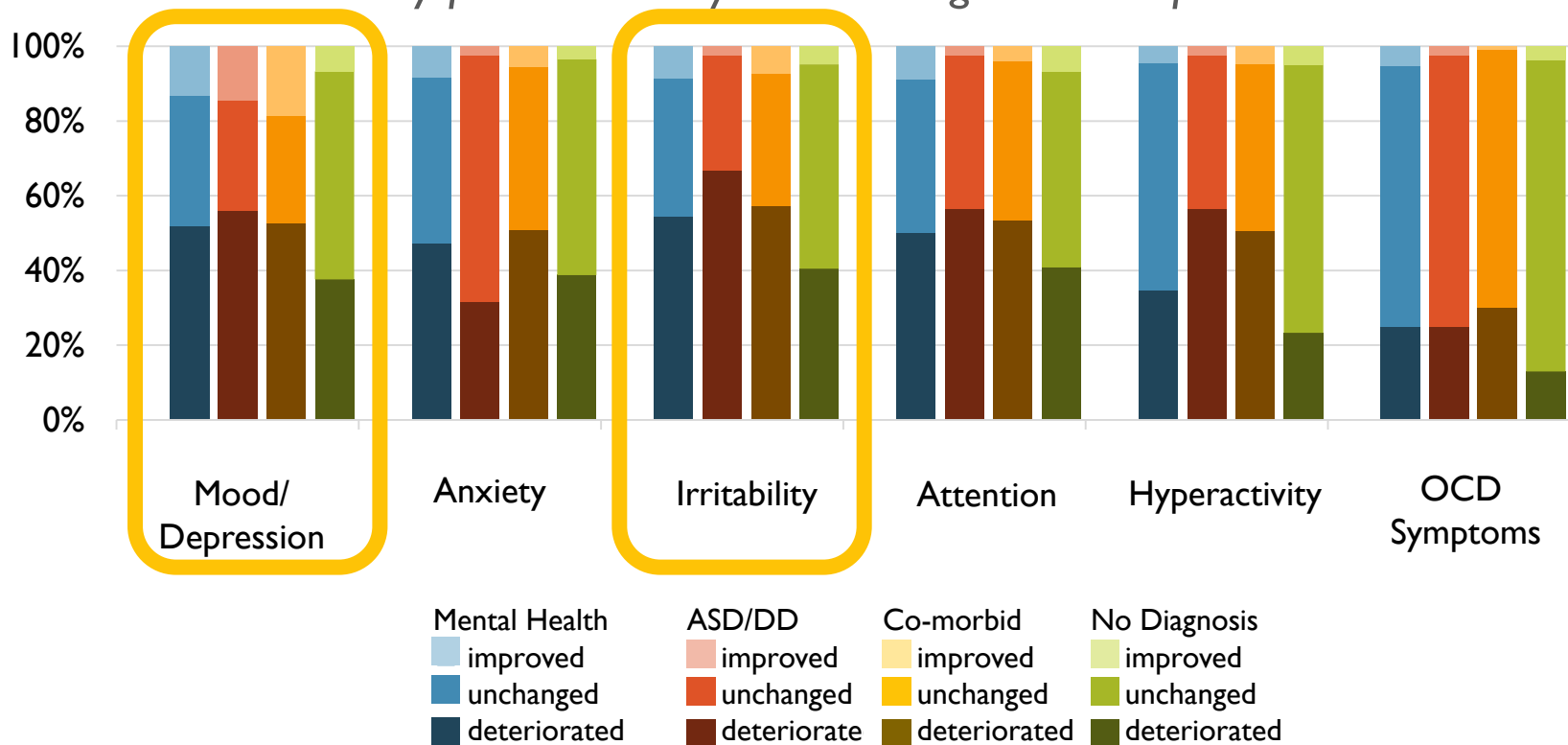
Prevalence of Mental Health Status Change
by *pre-COVID Psychiatric Diagnosis Group*



OBJECTIVE I RESULTS:

CHANGE IN DOMAIN *BY DIAGNOSIS*

Prevalence of Mental Health Status Change
by pre-COVID Psychiatric Diagnosis Group

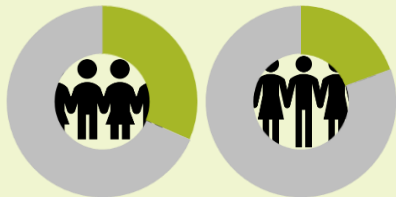


KEY FINDINGS I



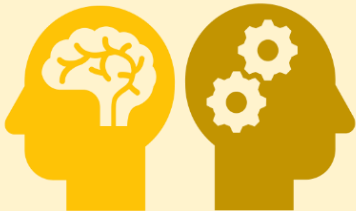
■ Deterioration

- Many children/adolescents experienced deterioration
- Highest rate of deterioration in **attention**



■ Improvement

- Some children/adolescents experienced improvement
- Rates of improvement were variable across domains and age groups
- Improvement in at least one domain was greatest in youngest children



■ Pre-morbid psychiatric diagnosis

- Experienced greater rates of deterioration, particularly in irritability
- ASD/DD or comorbid diagnoses experienced the greatest rates of deterioration
- Children/adolescents **without** pre-morbid psychiatric diagnoses still experienced significant rates of deterioration

OBJECTIVE 2

To determine the relative impacts on mental health status change in children and youth ages 6-18 of

- Emergency Measures compliance
- Stress associated with social isolation
- COVID exposure
- while controlling for:
 - household income, COVID economic concerns, child assigned sex, child age, child race/ethnicity, pre-morbid psychiatric health diagnosis

Analysis:

- 6 Multinomial logistic regressions

OBJECTIVE 2 RESULTS:

VARIABLES ASSOCIATED WITH CHANGE IN *DEPRESSION*

Improved



Previous psychiatric diagnosis



Lower stress
associated with
social changes

Deteriorated



Previous psychiatric diagnosis



Greater stress
associated with
social isolation

OBJECTIVE 2 RESULTS:

VARIABLES ASSOCIATED WITH CHANGE IN *ANXIETY*

Improved

♀ Female assigned sex



Previous psychiatric diagnosis



Greater COVID
economic concerns



Lower stress
associated with
social changes

Deteriorated



Greater stress
associated with
social isolation

OBJECTIVE 2 RESULTS: VARIABLES ASSOCIATED WITH CHANGE IN *IRRITABILITY*

Improved



Previous psychiatric diagnosis

Deteriorated

European ethnicity/ancestry

Older child age



Previous psychiatric diagnosis



**Greater stress
associated with
social isolation**

OBJECTIVE 2 RESULTS:

VARIABLES ASSOCIATED WITH CHANGE IN *ATTENTION*

Improved



Greater COVID
economic concerns

Deteriorated



Greater stress
associated with
social isolation

OBJECTIVE 2 RESULTS:


VARIABLES ASSOCIATED WITH CHANGE IN *HYPERACTIVITY*


Improved

Deteriorated

♂ Male assigned sex

Older child age

 Previous psychiatric diagnosis


 Greater stress associated with social isolation

OBJECTIVE 2 RESULTS:


VARIABLES ASSOCIATED WITH CHANGE IN *OCD SYMPTOMS*


Improved


Non-European ethnicity/ancestry

 Greater COVID economic concerns

Deteriorated

 Previous psychiatric diagnosis

 Greater COVID economic concerns

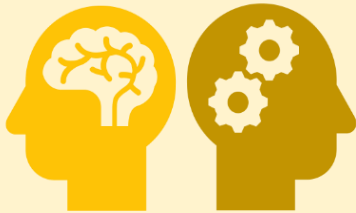
 Greater stress associated with social isolation

KEY FINDINGS 2



■ Stress from social isolation

- Greater strongest association with **deterioration** in all domains
- Greater only association with **deterioration** in anxiety, attention
- Less associated with **improvement** in depression, anxiety, irritability



■ Pre-morbid psychiatric diagnosis

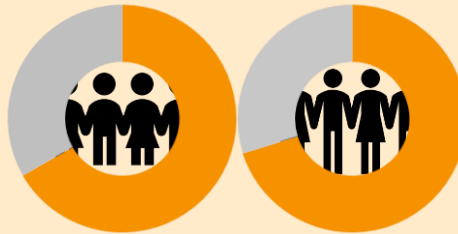
- With both **improvement** and **deterioration** in depression, irritability
- Only with **deterioration** in hyperactivity, OCD symptoms
- Only with **improvement** in anxiety



■ Greater COVID economic concerns

- With **improvement** in anxiety, attention
- With both **improvement** and **deterioration** in OCD symptoms

IMPLICATIONS



Many children/adolescents experienced deterioration in the first wave of COVID-19.

What can we do to help children and adolescents adjust to life during a pandemic?

IMPLICATIONS



Public health measures that result in social isolation are associated with deterioration of mental health.

What can we do to make sure that children and adolescents are getting the social interactions that they need to thrive?

IMPLICATIONS



Children/adolescents with pre-morbid psychiatric diagnoses may require more support to manage the mental health impacts of public health measures.

What can we do to connect children and adolescents with the services that they need?

IMPLICATIONS



Greater economic concerns are (seemingly) paradoxically associated with improvement in several domains, potentially due to less work-life conflict.

What can we do to make sure that families who need economic support continue to receive it?

What can we do to help families maintain work-life balance when they return to paid work?



THANK YOU

- children, adolescents, and families who participated in this research
- our collaborative team
- our funders
- our supporters, including Public Health Ontario
- all the folks who've supported me throughout this project
- all the research assistants working on this project, especially Reva Schacter & Avalon Henry

PARTICIPANT CHARACTERISTICS

PARENT REPORT 6 - 18 YEARS OLD

Parent-report of children ages 6-18 years old	% (n)	mean (std. dev.)	N
Self-report household income ($\geq 80,000$ CAD/year)	71.71% (616)	-	859
Parent/caregiver relationship to child (mother)	90.1% (864)	-	959
Ethnicity/ancestry of the child			946
Caucasian, European, Non-aboriginal North American ethnicity/ancestry origins	61.1% (578)		
Single Ethnicity/ancestry Carribean, Latin/Central/South American, African, Asian, Oceania, North American Aboriginal origins	16.1% (152)		
Multiple ethnicity/ancestry origins	22.8% (216)		
Assigned sex of the child (male)		-	958
male	56.5% (541)		
female	43.5% (417)		
Child gender identity	56.2% (539)		958
Boy	56.3% (539)		
Girl	42.7% (409)		
Trans boy	0.3% (3)		
Trans girl	0% (0)		
Non-binary or self-identified	0.7% (7)		
Any Premorbid psychiatric diagnosis			959
Child Mental Health Diagnosis	45.6% (437)	-	
Child Autism Spectrum Disorder or Developmental Delay Diagnosis	4.3% (41)	-	
Child Comorbid Mental Health Diagnosis & Neurodevelopmental Disorder Diagnosis	12.1% (116)	-	
No mental health or neurodevelopmental disorder diagnosis	38.1% (365)	-	
Child/adolescent age (years)	-	10.82 (3.35)	959
Economic Impact of COVID 19	-	0.27 (0.25)	959
EM Compliance	-	0.39 (0.34)	948
Stress associated with social isolation	-	0.42 (0.23)	948
COVID 19 exposure (postive exposure)	4.2% (40)	-	959

PARTICIPANT CHARACTERISTICS

PARENT REPORT 2 - 5 YEARS OLD

Parents of children ages 2-5 years old	% (n)	mean (std. dev.)	N
Self-report household income (\geq 80,000CAD/year)	90.4% (47)	-	52
Parent/caregiver relationship to child (biological or adoptive mother)	96.4% (54)	-	56
Ethnicity/ancestry of the child			49
Caucasian, European, Non-aboriginal North American ethnicity/ancestry origins	51.0% (25)		
Single Ethnicity/ancestry Carribean, Latin/Central/South American, African, Asian, Oceania, North American Aboriginal origins	20.4% (10)		
Multiple ethnicity/ancestry origins	28.6% (14)		
Assigned sex of the child			56
male	48.2% (27)	-	
female	51.8% (29)	-	
Child age (in months; range 35-60 months)		51.66 (5.89)	56
Economic Impact of COVID 19	-	0.06 (0.17)	55
EM Compliance	-	0.07 (0.18)	55
Stress associated with social isolation		0.40 (0.29)	25
COVID 19 exposure (positive exposure)	5.5% (3)	-	55

PARTICIPANT CHARACTERISTICS

CHILD / ADOLESCENT REPORT 10-18 YEARS OLD

Children/Adolescent ages 10-18 years		% (n)	mean (std. dev.)	N
EM Compliance	-		0.39 (0.33)	347
Stress associated with social isolation	-		0.36 (0.22)	347

OUTCOME:

CONSTRUCTING IMPROVED, UNCHANGED, DETERIORATED IN MULTIPLE DATASETS

In the 3 datasets, we asked the question(s) :

Compared to before COVID-19 emergency measures would you say your/your child's (*) is:

- Much better
- A little better
- About the same
- A little worse
- Much worse

* anxiety: worries
depression: mood
Irritability
Attention

hyperactivity: ability to control your fidgeting and restlessness
OCD symptoms: thoughts and behaviours

OUTCOME:

CONSTRUCTING IMPROVED, UNCHANGED, DETERIORATED IN MULTIPLE DATASETS

In the youngest children, we have the Strengths and Difficulties Questionnaire (SDQ) *before* and *after* COVID-19 – and no change questions...

So we can construct a better, same, worse variable using the pre-post scores:

- compute a difference score using data collected on the SDQ in the 12 months prior to COVID-19.
 - subtract the pre-COVID SDQ scores from the SDQ scores obtained during the study period.
 - operationalise better, same, worse using the minimally clinically significant difference in SDQ scores, a change of 2 points.
 - If the difference in SDQ scores was ≤ -2 , the SDQ score was improved
 - If the difference in SDQ scores was ≥ 2 , the SDQ score was deteriorated
 - If the difference in SDQ scores was < 2 and > -2 , the SDQ score was unchanged

Anxiety
Conduct problems/ Irritability
Hyperactivity

OBJECTIVE 1 RESULTS

Table 2. Prevalence of mental health status change by informant and age group.

+ improved . unchanged - deteriorated	Any Informant-report of children/adolescent ages 6-18 years old			Parent-report of children ages 2-5 years old			Parent-report of children ages 6-9 years old			Parent-report of children ages 10-12 years old			Child-report ages 10-12 years old			Parent-report of adolescent ages 13-18 years old			Adolescent-report ages 13-18 years old		
	+	.	-	+	.	-	+	.	-	+	.	-	+	.	-	+	.	-	+	.	-
	%(n)	%(n)	%(n)	%(n)	%(n)	%(n)	%(n)	%(n)	%(n)	%(n)	%(n)	%(n)	%(n)	%(n)	%(n)	%(n)	%(n)	%(n)	%(n)	%(n)	%(n)
Mood/Depression	14.5% (133)	34.7% (319)	50.8% (467)	-	-	-	8.8% (33)	44.2% (165)	46.9% (175)	11.0% (29)	41.4% (109)	47.5% (125)	12.0% (19)	52.2% (83)	35.4% (56)	15.7% (44)	38.1% (107)	46.3% (130)	19.6% (37)	33.9% (64)	46.6% (88)
Anxiety / emotional problems	10.0% (92)	42.3% (390)	47.7% (439)	11.1% (6)	57.4% (31)	31.5% (17)	5.6% (21)	47.9% (180)	46.5% (175)	3.8% (10)	55.1% (146)	41.1% (109)	13.3% (21)	46.8% (74)	39.9% (63)	8.3% (23)	49.1% (136)	42.6% (118)	14.1% (26)	48.1% (89)	37.8% (70)
Irritability / conduct problems	8.7% (77)	35.2% (313)	56.1% (498)	16.7% (9)	53.7% (29)	29.6% (19)	4.1% (15)	42.3% (153)	53.6% (194)	8.0% (20)	41.0% (103)	51.0% (128)	11.4% (18)	43.7% (69)	44.9% (71)	9.2% (25)	46.1% (125)	44.6% (121)	10.9% (20)	40.8% (75)	48.4% (89)
Attention	9.4% (82)	36.0% (315)	54.6% (477)	-	-	-	9.0% (32)	43.1% (153)	47.9% (170)	7.3% (18)	46.6% (115)	46.2% (114)	8.9% (14)	45.6% (72)	45.6% (72)	4.4% (12)	47.9% (128)	47.6% (127)	11.0% (20)	35.7% (65)	53.3% (97)
Hyperactivity	7.1% (62)	52.4% (458)	40.5% (354)	14.8% (8)	50.0% (27)	35.2% (19)	5.4% (19)	56.1% (199)	38.6% (137)	5.3% (13)	64.8% (160)	30.0% (74)	10.1% (16)	58.2% (92)	31.6% (50)	2.2% (8)	49.0% (180)	48.8% (179)	8.2% (15)	58.8% (107)	33.0% (60)
OCD symptoms	4.0% (35)	74.9% (659)	21.1% (186)	-	-	-	3.9% (14)	76.5% (276)	19.7% (71)	4.0% (10)	74.3% (185)	21.7% (54)	-	-	-	4.1% (11)	73.3% (198)	22.6% (61)	-	-	-

Parents of children/adolescents ages 6-18 years old						Cronbach's alpha
Economic Impact of COVID-19: <i>0 = no impact, 1 = high impact</i>	not at all / NO	slightly	moderately	very	extremely / YES	0.77
How has the COVID-19 crisis affected your family financially?	35.1% (337)	28.1% (269)	21.6% (207)	10.4% (100)	4.8% (46)	
To what degree are you concerned about the stability of your living situation?	44.8% (430)	27.4% (263)	17.4% (167)	7.6% (73)	2.7% (26)	
EM Compliance: <i>0 = high compliance, 1 = low compliance</i>	not at all	1-2 days per week	a few days per week	several days per week	every day	n/a
How often does your child leave the home (e.g., going to stores, parks, etc.)?	25.9% (246)	33.9% (321)	15.0% (142)	10.4% (99)	14.8% (140)	
Stress associated with social isolation: <i>0 = no stress, 1 = high stress</i>	not at all	slightly	moderately	very	extremely	0.75
How stressful have the restrictions on leaving home been for your child?	15.7% (149)	30.6% (290)	25.2% (239)	19.1% (181)	9.4% (89)	
How much difficulty has your child had following the recommendations for keeping away from close contact with people?	33.5% (318)	34.1% (323)	15.4% (146)	11.3% (107)	5.7% (54)	
How stressful have these changes in friendships been for your child?	23.2% (218)	30.3% (284)	22.3% (209)	17.1% (160)	7.1% (67)	
How much has cancellation of important events (such as vacation, etc.) in your life been difficult for your child?	9.2% (87)	21.9% (208)	27.5% (261)	24.2% (229)	17.2% (163)	
COVID-19 Exposure: <i>0 = no exposure, 1 = exposure</i>	NO	YES				n/a
Have you or your child been suspected or diagnosed with COVID-19?	98.9% (948)	1.1% (11)				
Has anyone else in your family been suspected or diagnosed with COVID-19?	96.7% (927)	3.3% (32)				

Children/Adolescents ages 10-18 years old						Cronbach's alpha
EM Compliance: <i>0 = high compliance, 1 = low compliance</i>	not at all	1-2 days per week	a few days per week	several days per week	every day	
How often does you leave the home (e.g., going to stores, parks, etc.)?	23.3% (81)	33.7% (117)	17.0% (59)	13.8% (48)	12.1% (42)	
Stress associated with social isolation: <i>0 = no stress, 1 = high stress</i>	not at all	slightly	moderately	very	extremely	0.68
How stressful have the restrictions on leaving home been for you?	25.4% (88)	25.9% (90)	28.8% (100)	13.8% (48)	6.1% (21)	
How much difficulty have you had following the recommendations for keeping away from close contact with people?	37.8% (131)	32.0% (111)	15.6% (54)	11.5% (40)	3.2% (11)	
How stressful have these changes in friendships been for you?	39.8% (138)	29.7% (103)	14.1% (49)	11.2% (39)	5.2% (18)	
How much has cancellation of important events (such as vacation, etc.) in your life been difficult for you?	13.9% (48)	25.1% (87)	20.8% (72)	24.0% (83)	16.2% (56)	

OBJECTIVE 2 RESULTS:

VARIABLES ASSOCIATED WITH CHANGE IN *DEPRESSION*

	Parent-report of children/adolescent ages 6-18 years old: improved vs unchanged (ref)				Parent-report of children/adolescent ages 6-18 years old: deteriorated vs unchanged (ref)			
	OR	95%LLCI	95%ULCI	p	OR	95%LLCI	95%ULCI	p
Depression (intercept)	0.13	0.04	0.45	0.001	0.09	0.04	0.21	0.000
Self-report household income	1.31	0.75	2.29	0.344	1.37	0.93	2.03	0.112
Child ethnicity	0.61	0.37	1.01	0.053	0.80	0.58	1.10	0.161
Child assigned sex	0.83	0.52	1.32	0.436	1.21	0.89	1.65	0.216
Child premorbid psychiatric diagnosis	3.12	1.81	5.37	0.000	2.04	1.45	2.86	0.000
Child age	1.05	0.98	1.13	0.166	1.01	0.96	1.06	0.651
COVID exposure	0.91	0.28	2.93	0.874	1.06	0.50	2.24	0.875
COVID economic concerns	1.71	0.63	4.61	0.290	0.56	0.28	1.10	0.093
Emergency measures compliance	1.55	0.81	2.99	0.188	1.09	0.69	1.72	0.706
Stress associated with social changes	0.16	0.04	0.56	0.004	55.24	24.55	124.30	0.000

OBJECTIVE 2 RESULTS:

VARIABLES ASSOCIATED WITH CHANGE IN ANXIETY

	Parent-report of children/adolescent ages 6-18 years old: improved vs unchanged (ref)				Parent-report of children/adolescent ages 6-18 years old: deteriorated vs unchanged (ref)			
	OR	95%LLCI	95%ULCI	p	OR	95%LLCI	95%ULCI	p
Anxiety (intercept)	0.05	0.01	0.24	0.000	0.08	0.03	0.18	0.000
Self-report household income	0.85	0.42	1.73	0.649	1.34	0.91	1.97	0.140
Child ethnicity	0.59	0.30	1.16	0.128	0.97	0.71	1.33	0.872
Child assigned sex	1.84	1.02	3.31	0.041	1.19	0.88	1.60	0.262
Child premorbid psychiatric diagnosis	2.42	1.17	5.01	0.018	1.24	0.89	1.73	0.194
Child age	1.00	0.91	1.09	0.947	1.01	0.96	1.06	0.724
COVID exposure	0.45	0.06	3.50	0.442	1.27	0.62	2.62	0.510
COVID economic concerns	5.57	1.64	18.97	0.006	1.17	0.61	2.24	0.629
Emergency measures compliance	0.89	0.37	2.13	0.792	0.88	0.57	1.37	0.581
Stress associated with social changes	0.12	0.02	0.62	0.011	54.36	25.03	118.03	0.000

OBJECTIVE 2 RESULTS:

VARIABLES ASSOCIATED WITH CHANGE IN *IRRITABILITY*

	Parent-report of children/adolescent ages 6-18 years old: improved vs unchanged (ref)				Parent-report of children/adolescent ages 6-18 years old: deteriorated vs unchanged (ref)			
	OR	95%LLCI	95%ULCI	p	OR	95%LLCI	95%ULCI	p
Irritability (intercept)	0.06	0.01	0.27	0.000	0.24	0.11	0.57	0.001
Self-report household income	0.69	0.37	1.29	0.243	1.21	0.84	1.75	0.311
Child ethnicity	0.76	0.41	1.39	0.365	0.58	0.42	0.80	0.001
Child assigned sex	1.20	0.68	2.11	0.529	1.31	0.96	1.79	0.086
Child premorbid psychiatric diagnosis	2.13	1.10	4.13	0.024	2.08	1.48	2.92	0.000
Child age	1.02	0.93	1.11	0.668	0.93	0.88	0.98	0.003
COVID exposure	1.59	0.49	5.12	0.436	1.04	0.48	2.24	0.920
COVID economic concerns	2.81	0.88	8.96	0.081	1.18	0.60	2.32	0.623
Emergency measures compliance	1.20	0.52	2.73	0.670	0.95	0.61	1.48	0.816
Stress associated with social changes	0.97	0.24	3.98	0.969	43.25	19.59	95.46	0.000

OBJECTIVE 2 RESULTS:

VARIABLES ASSOCIATED WITH CHANGE IN *ATTENTION*

	Parent-report of children/adolescent ages 6-18 years old: improved vs unchanged (ref)				Parent-report of children/adolescent ages 6-18 years old: deteriorated vs unchanged (ref)			
	OR	95%LLCI	95%ULCI	p	OR	95%LLCI	95%ULCI	p
Attention (intercept)	0.19	0.04	0.88	0.034	0.21	0.09	0.47	0.000
Self-report household income	0.70	0.35	1.40	0.315	1.09	0.75	1.59	0.657
Child ethnicity	0.80	0.44	1.45	0.461	0.83	0.61	1.14	0.250
Child assigned sex	1.19	0.69	2.08	0.529	1.15	0.85	1.55	0.367
Child premorbid psychiatric diagnosis	1.48	0.80	2.73	0.210	1.38	0.99	1.92	0.059
Child age	0.91	0.84	1.00	0.057	0.99	0.94	1.04	0.619
COVID exposure	1.47	0.39	5.63	0.570	1.73	0.80	3.77	0.166
COVID economic concerns	3.97	1.29	12.22	0.016	1.21	0.63	2.32	0.574
Emergency measures compliance	1.56	0.71	3.41	0.267	0.83	0.54	1.29	0.418
Stress associated with social changes	0.93	0.24	3.68	0.918	24.93	11.76	52.87	0.000

OBJECTIVE 2 RESULTS:

VARIABLES ASSOCIATED WITH CHANGE IN *HYPERACTIVITY*

	Parent-report of children/adolescent ages 6-18 years old: improved vs unchanged (ref)				Parent-report of children/adolescent ages 6-18 years old: deteriorated vs unchanged (ref)			
	OR	95%LLCI	95%ULCI	p	OR	95%LLCI	95%ULCI	p
Hyperactivity (intercept)	0.19	0.03	1.14	0.070	0.26	0.11	0.62	0.002
Self-report household income	0.60	0.28	1.27	0.180	1.16	0.77	1.75	0.470
Child ethnicity	0.71	0.34	1.47	0.358	0.98	0.70	1.36	0.888
Child assigned sex	1.27	0.66	2.45	0.468	0.72	0.52	0.99	0.043
Child premorbid psychiatric diagnosis	1.39	0.67	2.86	0.375	2.23	1.56	3.19	0.000
Child age	0.89	0.79	0.99	0.034	0.92	0.88	0.97	0.002
COVID exposure	0.57	0.07	4.50	0.591	1.33	0.65	2.75	0.437
COVID economic concerns	2.51	0.64	9.88	0.188	1.81	0.94	3.48	0.075
Emergency measures compliance	1.37	0.53	3.50	0.516	0.95	0.60	1.51	0.833
Stress associated with social changes	0.76	0.15	3.78	0.732	16.74	7.94	35.29	0.000

OBJECTIVE 2 RESULTS:

VARIABLES ASSOCIATED WITH CHANGE IN OCD SYMPTOMS

	Parent-report of children/adolescent ages 6-18 years old: improved vs unchanged (ref)				Parent-report of children/adolescent ages 6-18 years old: deteriorated vs unchanged (ref)			
	OR	95%LLCI	95%ULCI	p	OR	95%LLCI	95%ULCI	p
OCD Symptoms (intercept)	0.02	0.00	0.11	0.000	0.04	0.01	0.10	0.000
Self-report household income	0.91	0.38	2.16	0.823	1.08	0.70	1.64	0.732
Child ethnicity	2.49	1.18	5.24	0.016	1.15	0.80	1.66	0.456
Child assigned sex	1.35	0.67	2.73	0.397	0.97	0.68	1.38	0.877
Child premorbid psychiatric diagnosis	1.47	0.66	3.25	0.347	1.96	1.30	2.98	0.002
Child age	1.01	0.91	1.13	0.792	1.02	0.96	1.08	0.496
COVID exposure	0.57	0.07	4.43	0.587	0.64	0.27	1.51	0.307
COVID economic concerns	5.20	1.27	21.21	0.022	2.91	1.45	5.85	0.003
Emergency measures compliance	0.97	0.35	2.73	0.961	0.66	0.39	1.13	0.130
Stress associated with social changes	0.33	0.06	1.79	0.197	11.12	5.01	24.70	0.000