ON THE RELATIONSHIP BETWEEN SOCIAL MEDIA AND ADOLESCENT MENTAL HEALTH

OUTLINE

INTRODUCTION	SUMMARY OF THE ARTIFACTS	CONCLUSIONS
~10 mins	~20 mins	~8 mins

DEFINTIONS

ON THE RELATIONSHIP BETWEEN
SOCIAL MEDIA AND ADOLESCENT MENTAL HEALTH

“Interactive technologies that facilitate the creation and sharing of information, ideas, interests, and other forms of expression through virtual communities and networks.”
- American Psychological Association (APA)

DEFINTIONS

ON THE RELATIONSHIP BETWEEN

SOCIAL MEDIA AND ADOLESCENT MENTAL HEALTH

“A young person who has begun puberty but has not yet become an adult... generally occurs between the ages of 10 and 19 years.”
- National Institute of Health (NIH)

DEFINTIONS

ON THE RELATIONSHIP BETWEEN

SOCIAL MEDIA AND ADOLESCENT MENTAL HEALTH

Mental health is... difficult to define, but it "includes emotional, psychological, and social well-being. It is more than the absence of a mental illness—it's essential to our overall health and quality of life."

- National Institute of Mental Health (NIMH)

ON THE RELATIONSHIP BETWEEN SOCIAL MEDIA AND ADOLESCENT MENTAL HEALTH

Why?

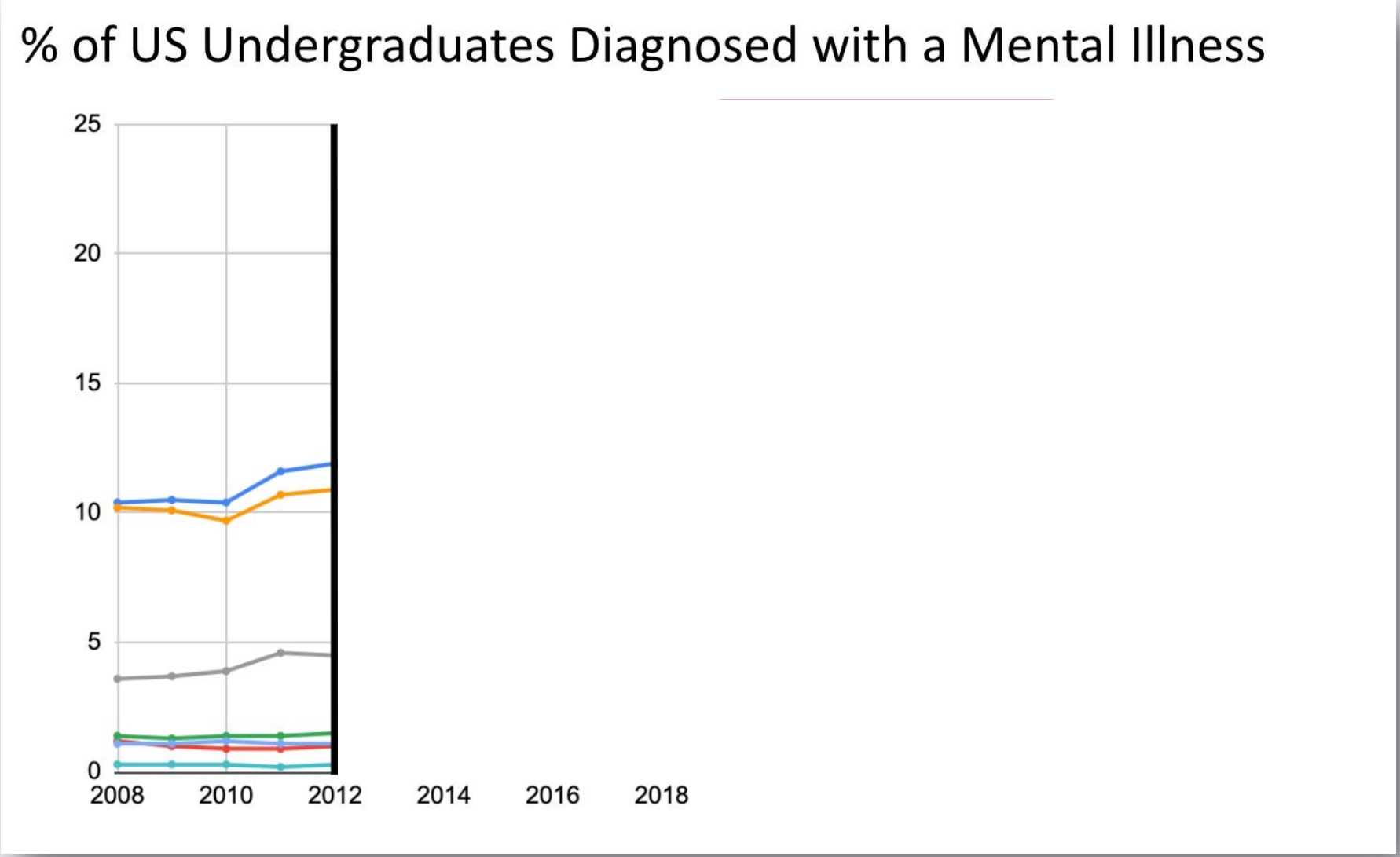
HUMANITARIAN MOTIVATION

“...we are experiencing a national youth mental health crisis...”

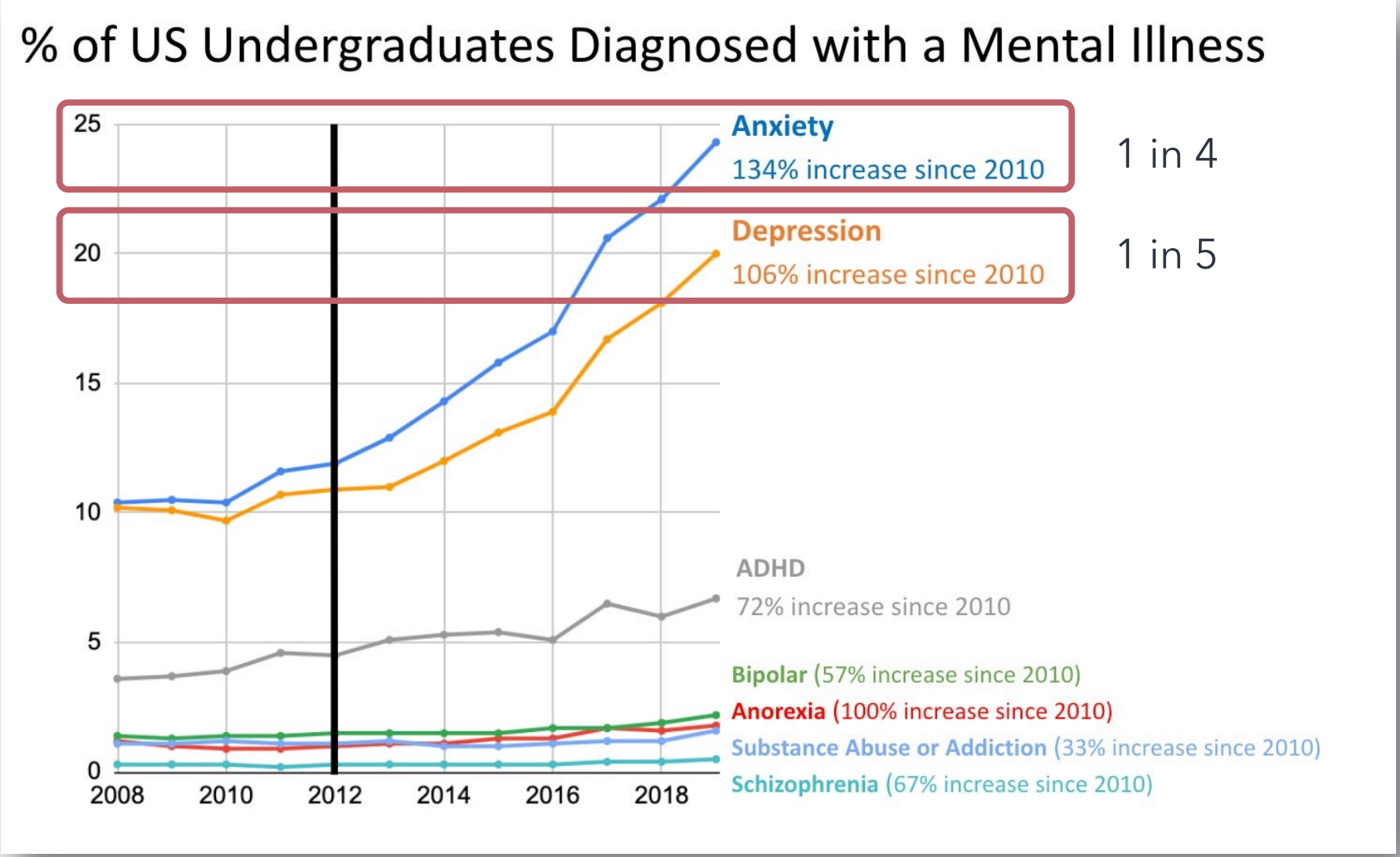
- Vivek Murthy (U.S. Surgeon General)

Office of the Surgeon General (OSG). (2023)

HUMANITARIAN MOTIVATION



HUMANITARIAN MOTIVATION



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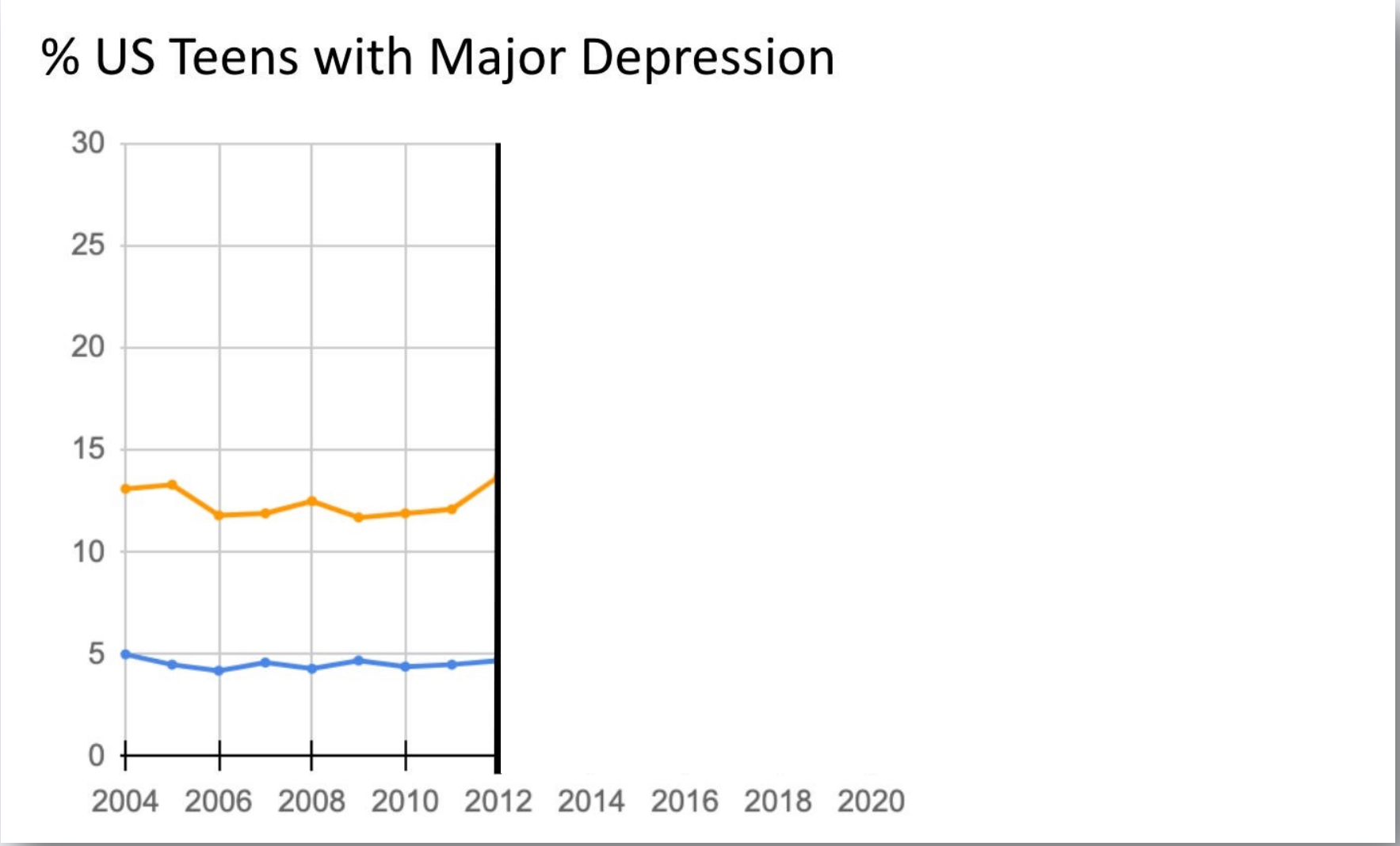
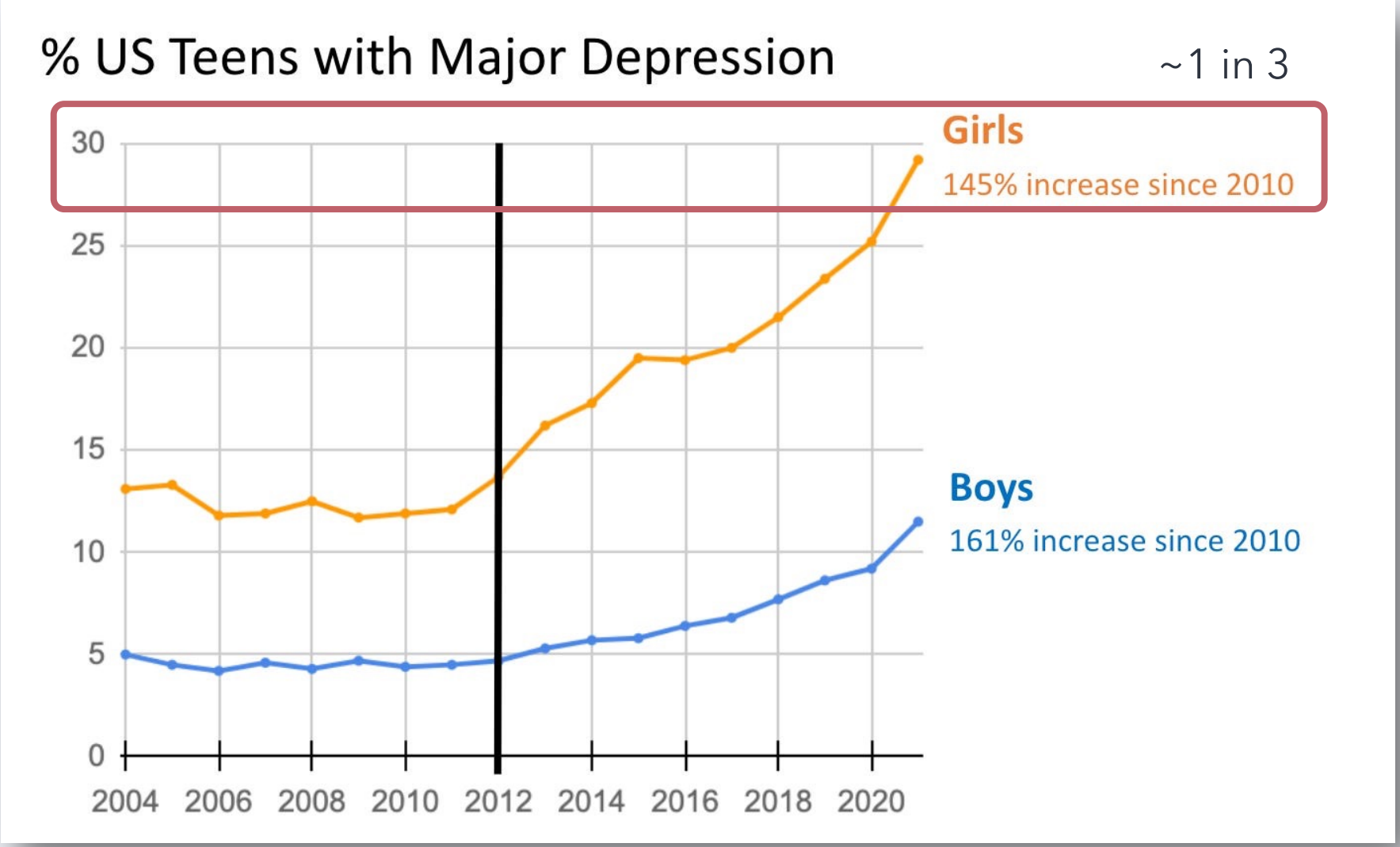


American College Health Association (ACHA); National Survey on Drug Use and Health (NSDUH)

HUMANITARIAN MOTIVATION



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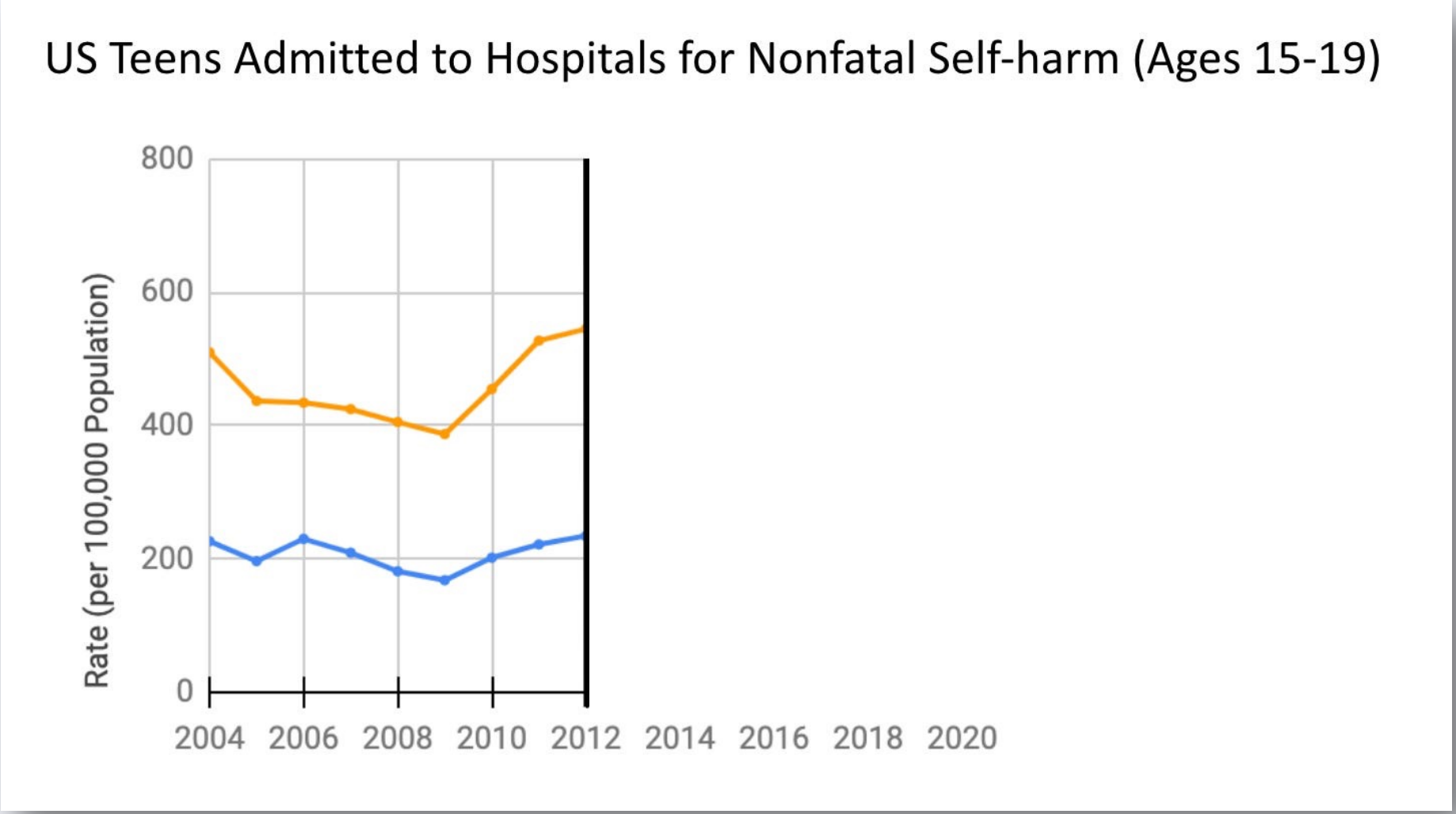
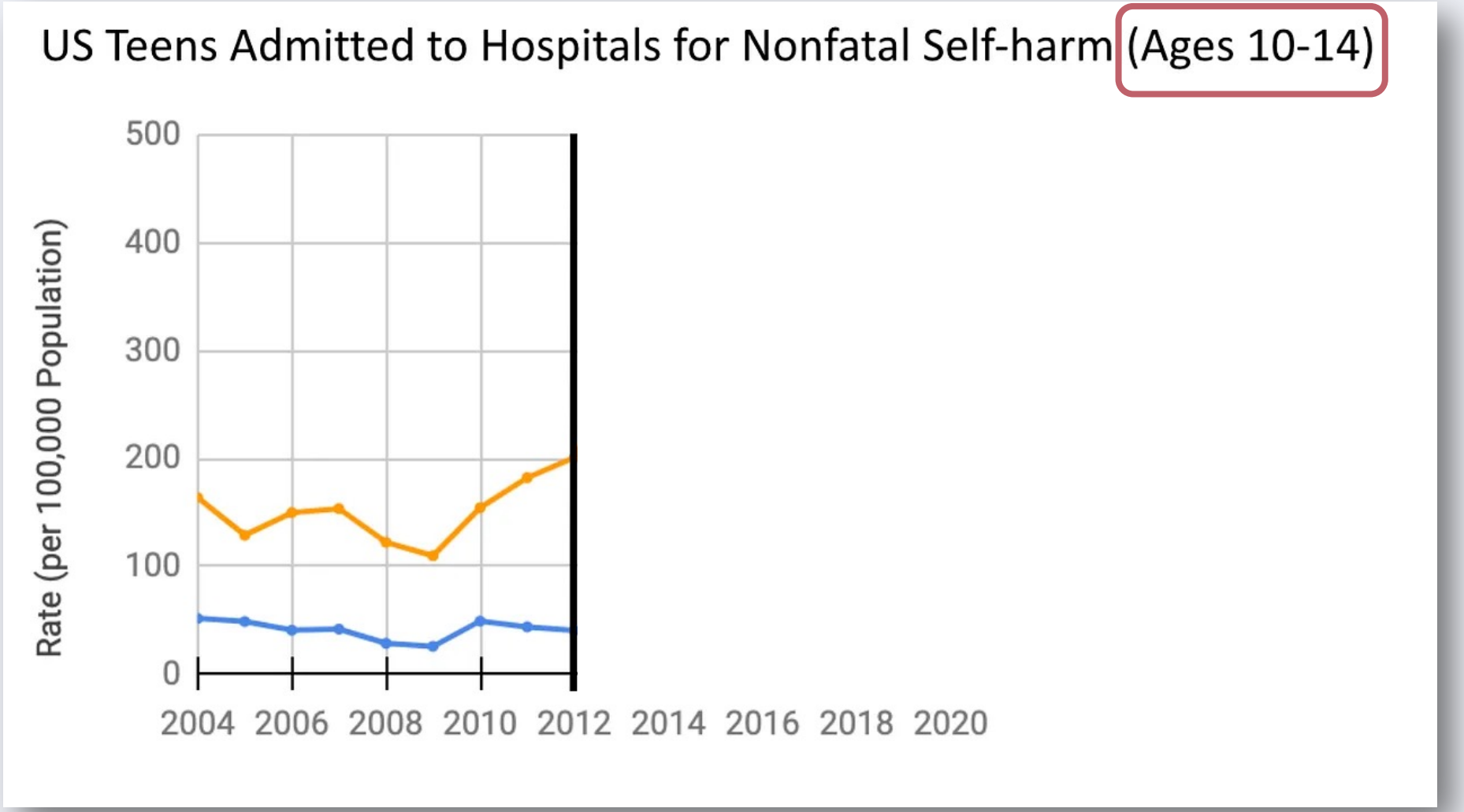


Centers for Disease Control and Prevention (CDC) WISQARS Nonfatal Injury Reports, 2004-2020

HUMANITARIAN MOTIVATION



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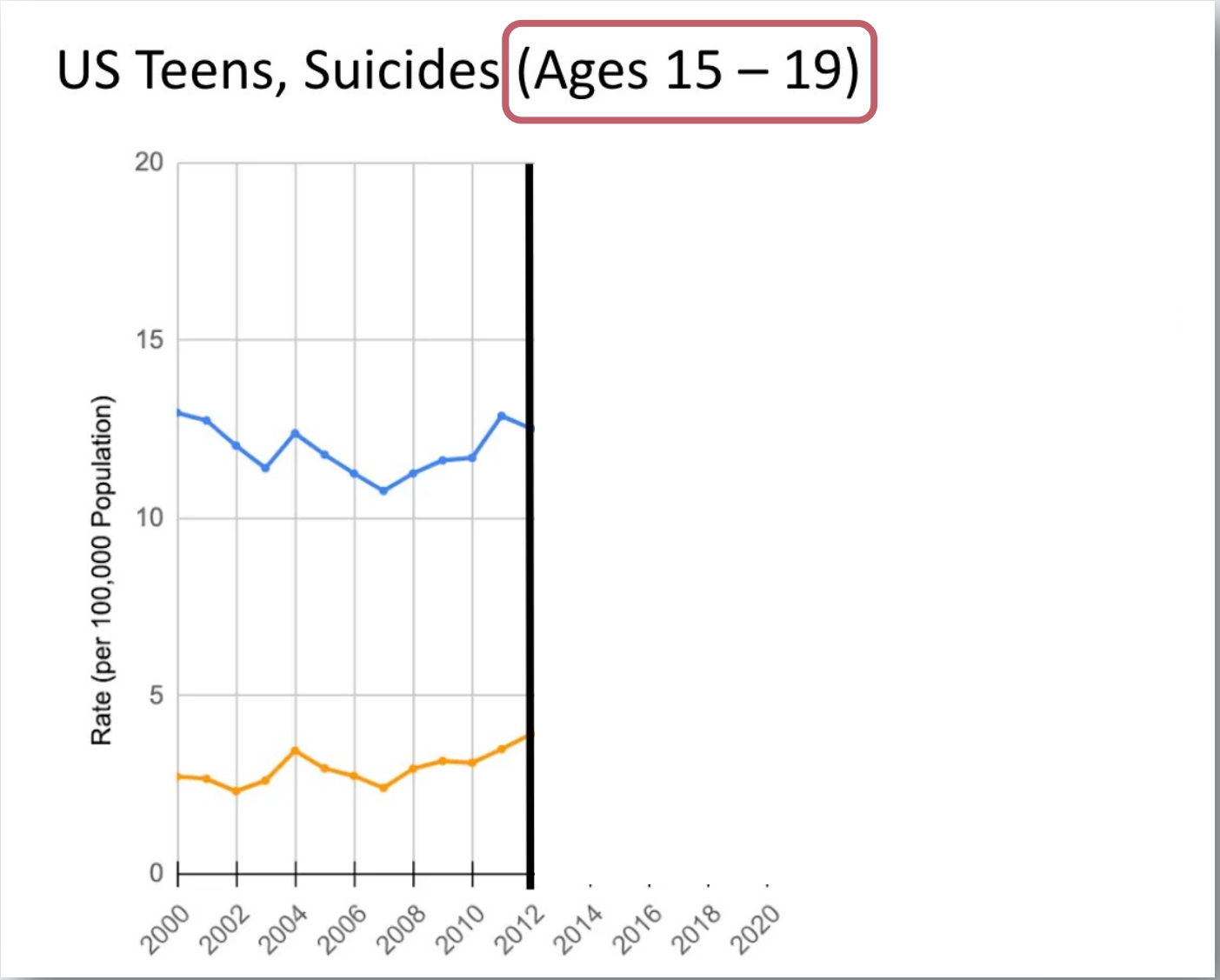

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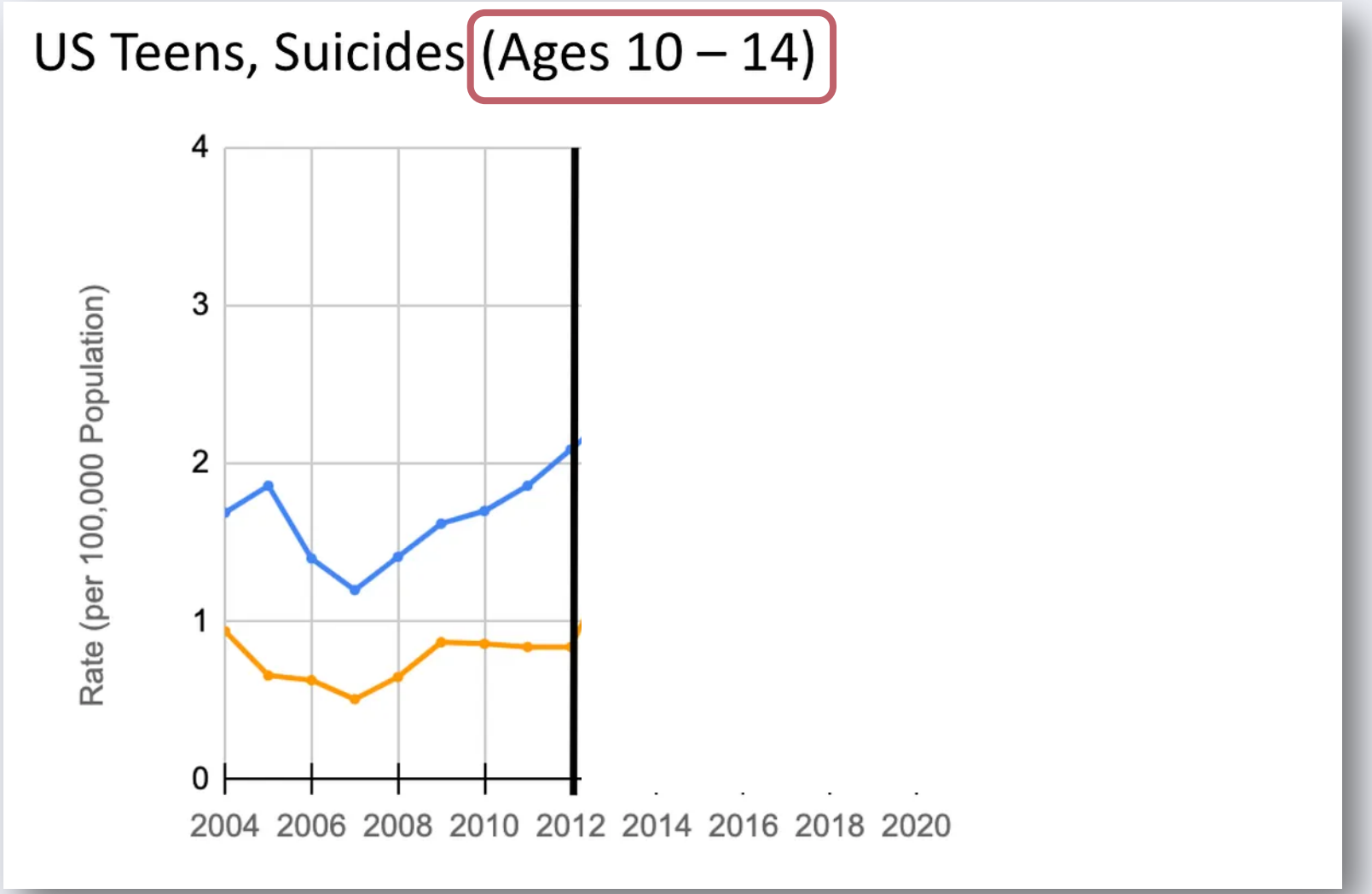

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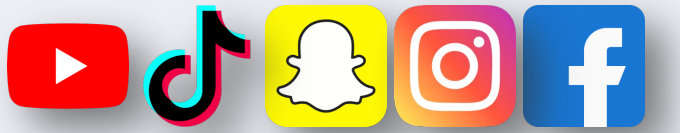
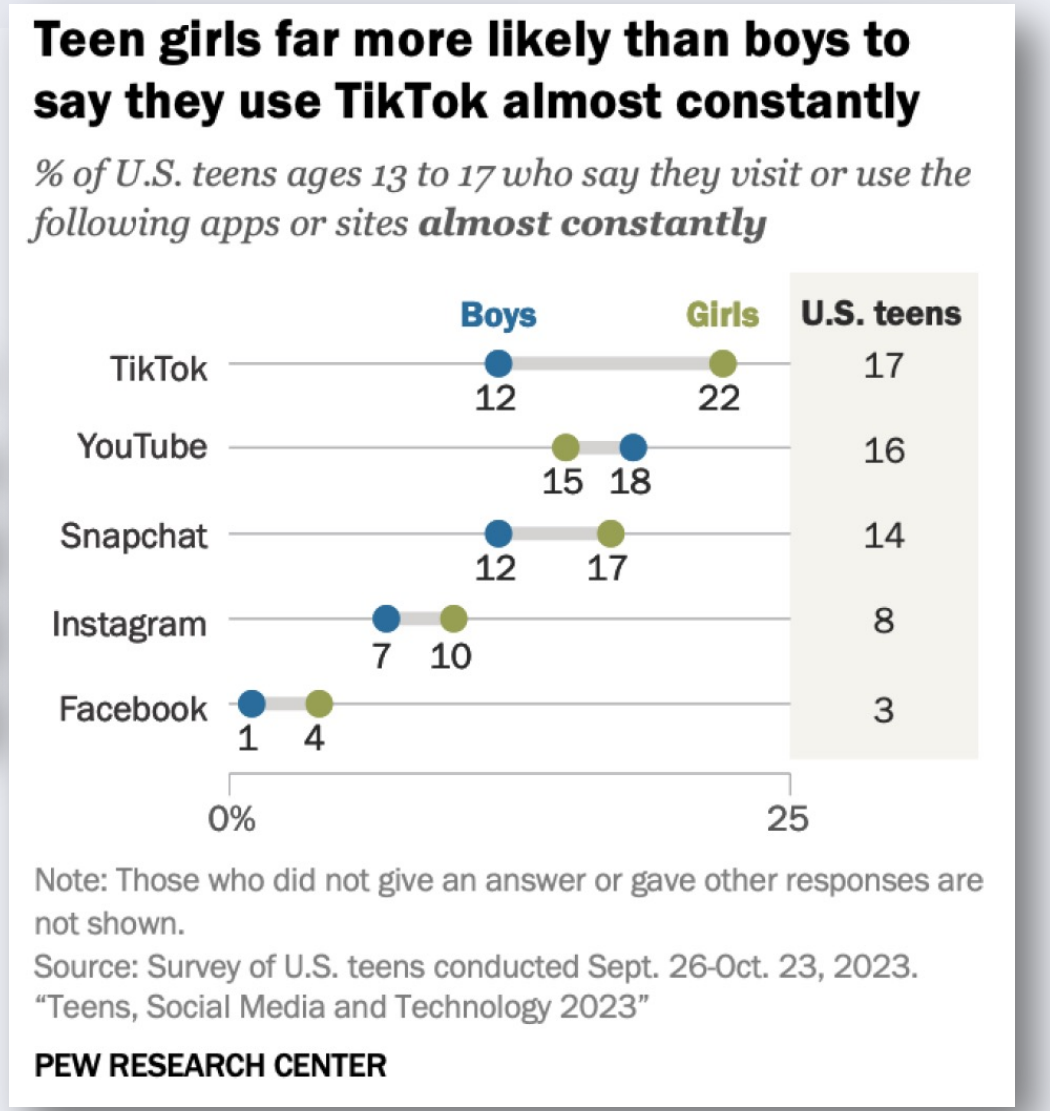


Gottfried, M. A., Michelle Faverio and Jeffrey. (2023, December 11)

HUMANITARIAN MOTIVATION



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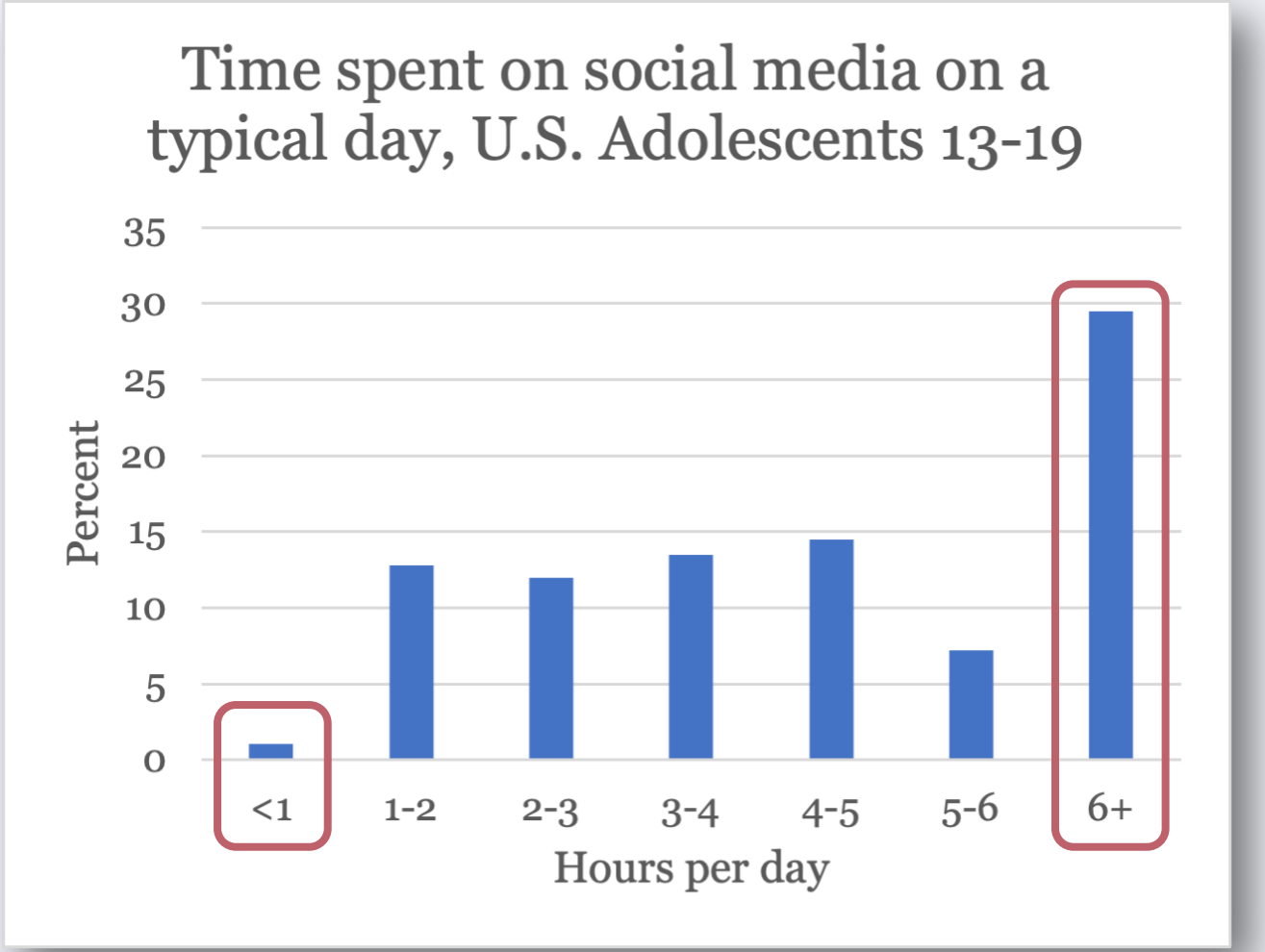


Mean = 4.8
Median = 4

Rothwell, J. (2023)

HUMANITARIAN MOTIVATION

(5 hours per day) x (40 million teenagers) x (10 years of adolescence) = **a significant exposure**

OBJECTIVE

Is social media a **causal factor** in the adolescent mental health crisis?

Too big of a question...

OBJECTIVE

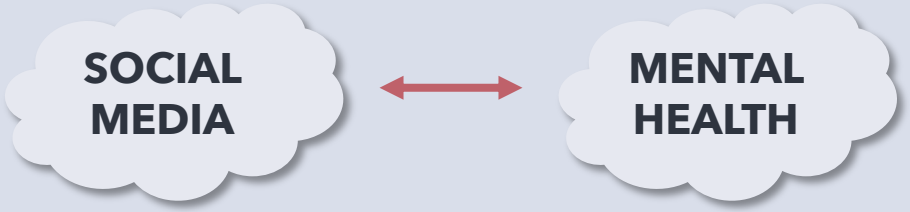
Can we **rule out** social media
as a potential contributing factor?

No.

OBJECTIVE

Is social media a **causal factor** in the adolescent mental health crisis?

Characterize:



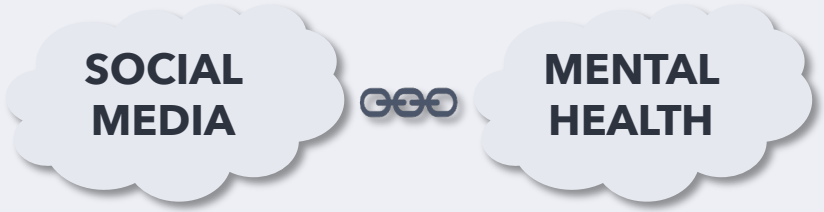
COURSE OF STUDY

Type of Evidence	**Indicates an effect**	**Indicates little/no effect**
Correlational	3 studies	3 studies
Longitudinal	3 studies	3 studies
Experimental	6 studies	3 studies

+1 mixed

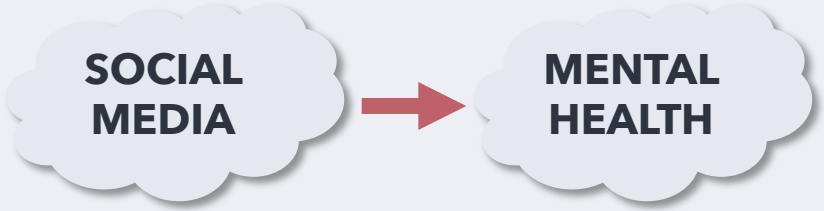
COURSE OF STUDY

- **CORRELATIONAL STUDIES:** Is there an association between social media use and adolescent mental health?



- **LONGITUDINAL STUDIES:** Does social media use at time 1 predict anything about mental health at time 2?

- **EXPERIMENTAL STUDIES:** Is there a causal effect of social media on mental health?



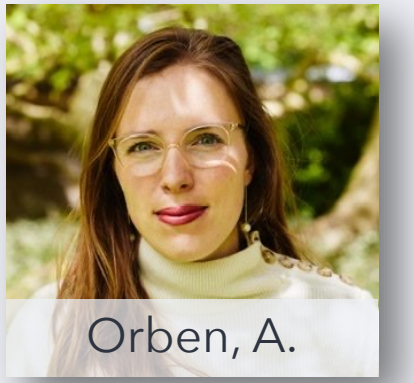
CORRELATIONAL STUDIES

Studies that indicate an association	Studies that indicate little/no association
~~[yi Lin et al., 2016] (see 4.1.1)~~	~~[Berryman et al., 2018] (see 4.2.1)~~
~~[Woods and Scott, 2016] (see 4.1.2)~~	**[Orben and Przybylski, 2019a]** (see 4.2.2)
[Twenge et al., 2018] (see 4.1.3)	**[Orben and Przybylski, 2019b]** (see 4.2.3)
	~~[Beyens et al., 2020] (see 4.3.1)~~

Table 1: Correlational studies organized by whether they indicate an association between social media use and negative mental health outcomes (left) or little/no association (right).

CORRELATIONAL STUDIES


Twenge, J. M.


Orben, A.

COURSE OF STUDY

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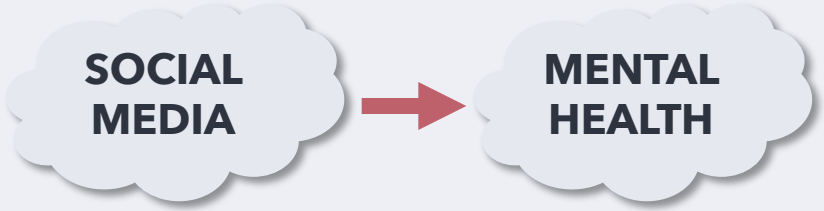

CORRELATIONAL STUDIES

Study	Exposure	Gender?	Size of Association	Comparison

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Twenge et al., 2020b: "Look at social media and stratify by gender, also correct these 5 things."	**Social Media**	Yes	$\boldsymbol{r_{girls} = -0.17}$ $r_{boys} = -0.07$	> hard drug use + well-being, > exercise + well-being

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Twenge et al., 2022: "Right? Here's what happens when we focus on social media AND stratify by gender."	**Social Media**	**Yes**	$\boldsymbol{\beta_{girls} = -0.20}$ $\beta_{boys} = -0.04$	> binge drinking + well-being, > marijuana use + well-being

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Orben et al., 2022: "I take your point..." **proceeds to amass some of the most detailed and compelling cross-sectional and longitudinal evidence on the relationship between social media and adolescent mental health**	**Social Media**	**Yes + Age**	standby	standby

CORRELATIONAL STUDIES

nature COMMUNICATIONS

ARTICLE

https://doi.org/10.1038/s41467-022-29296-3 OPEN

Check for updates

Windows of developmental sensitivity to social media

Amy Orben[1✉], Andrew K. Przybylski[2], Sarah-Jayne Blakemore[3,4] & Rogier A. Kievit[5,1]

Orben, A., Przybylski, A. K., Blakemore, S.-J., & Kievit, R. A. (2022)

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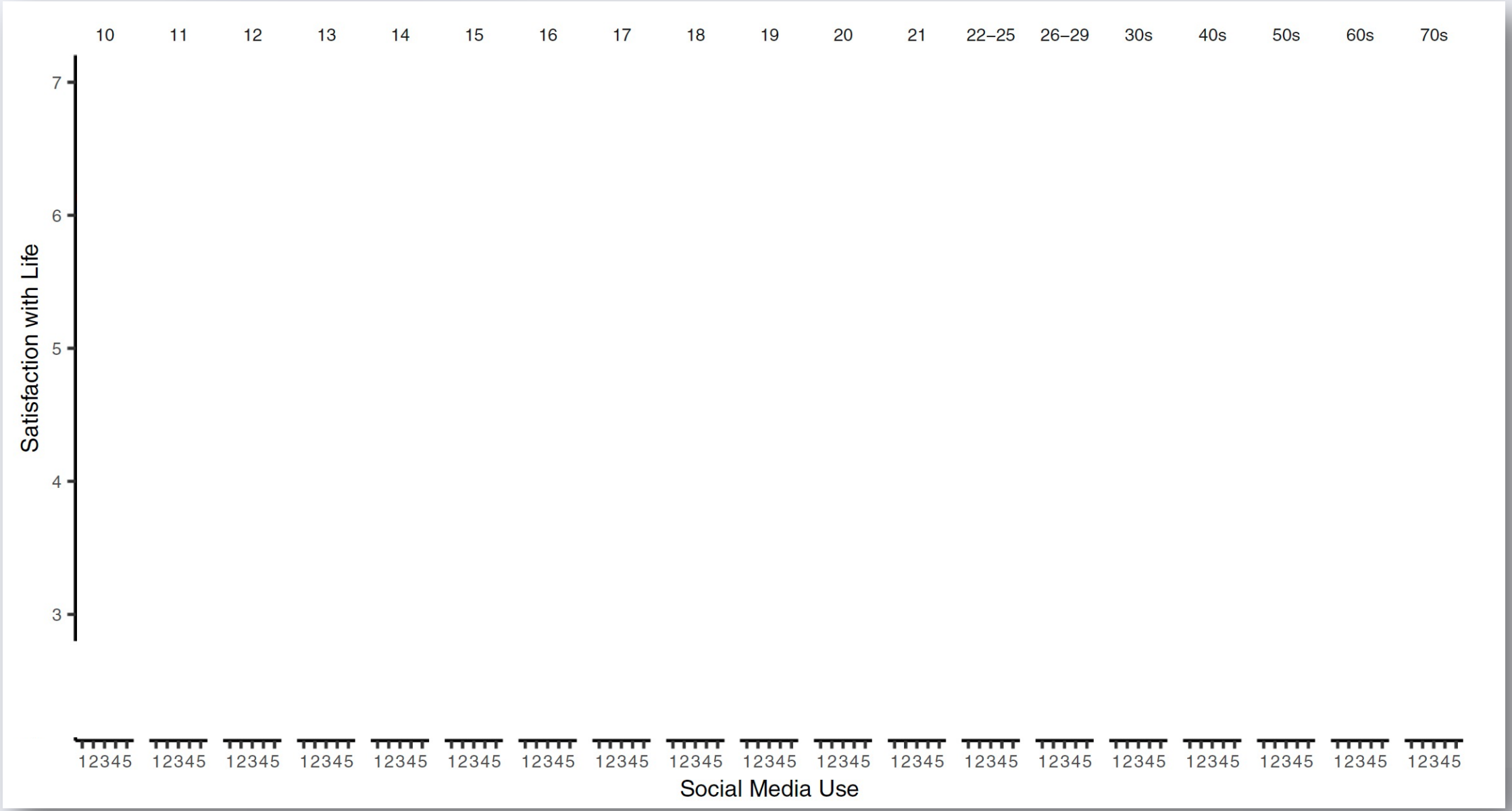

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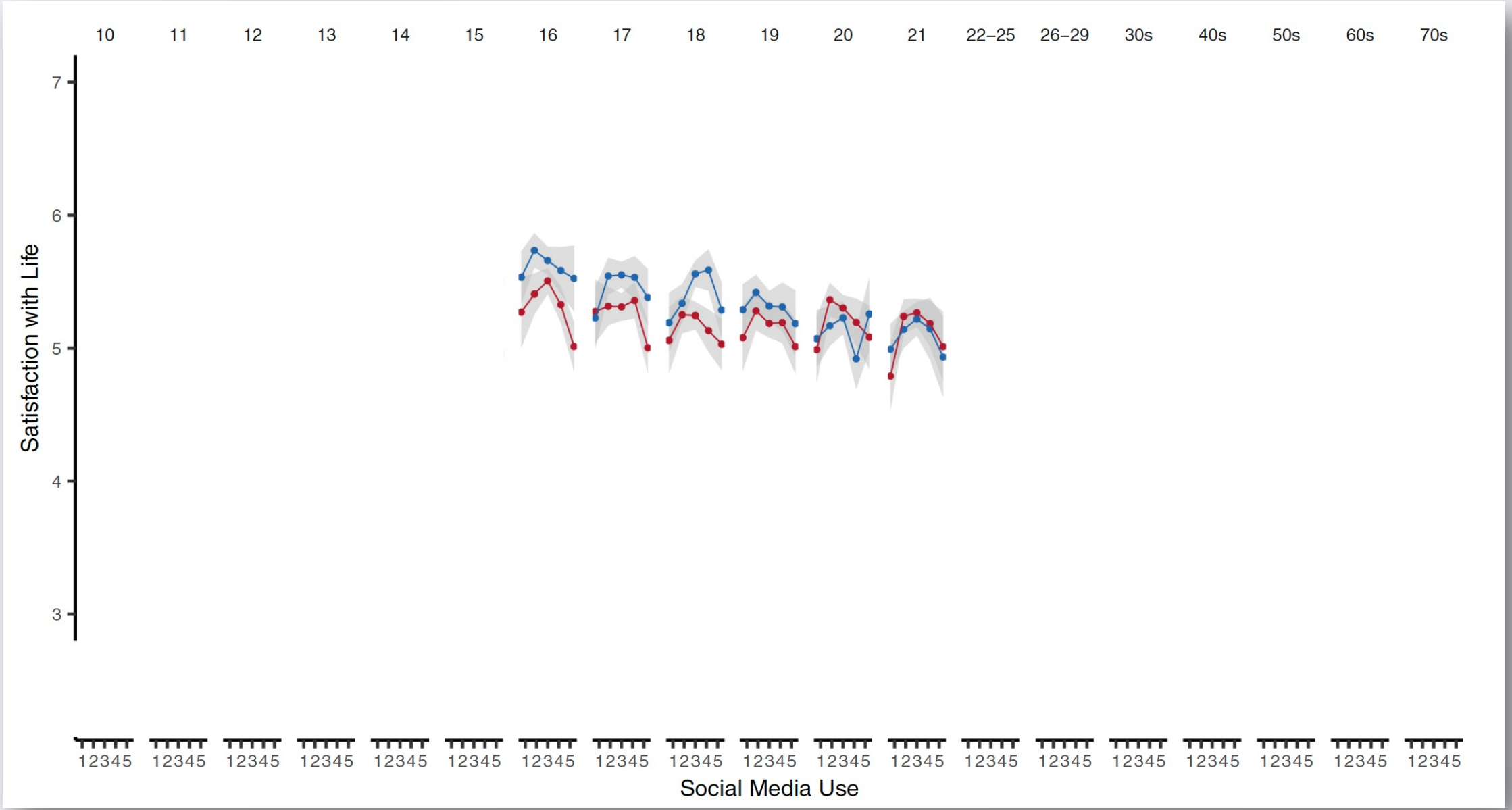

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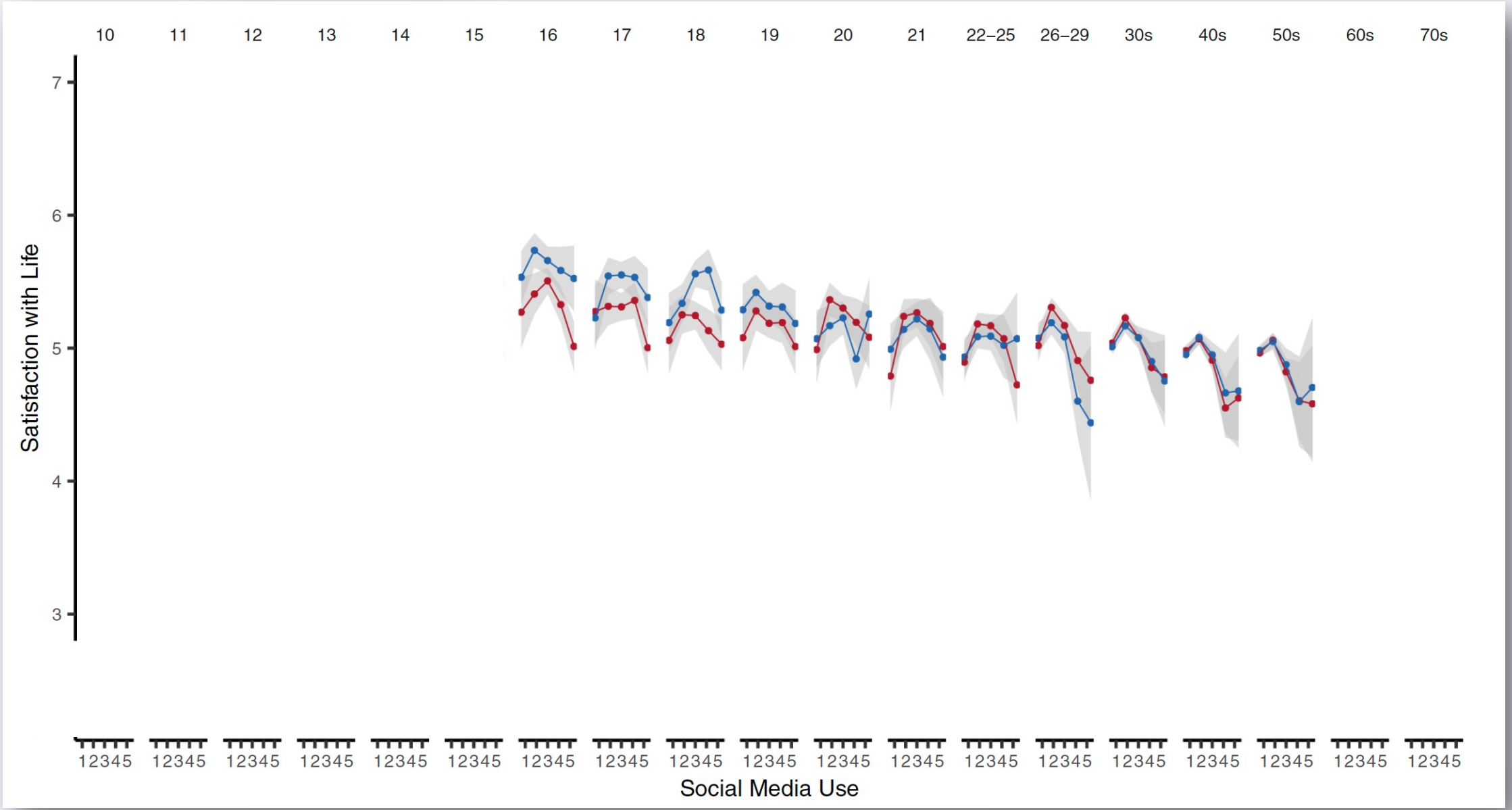

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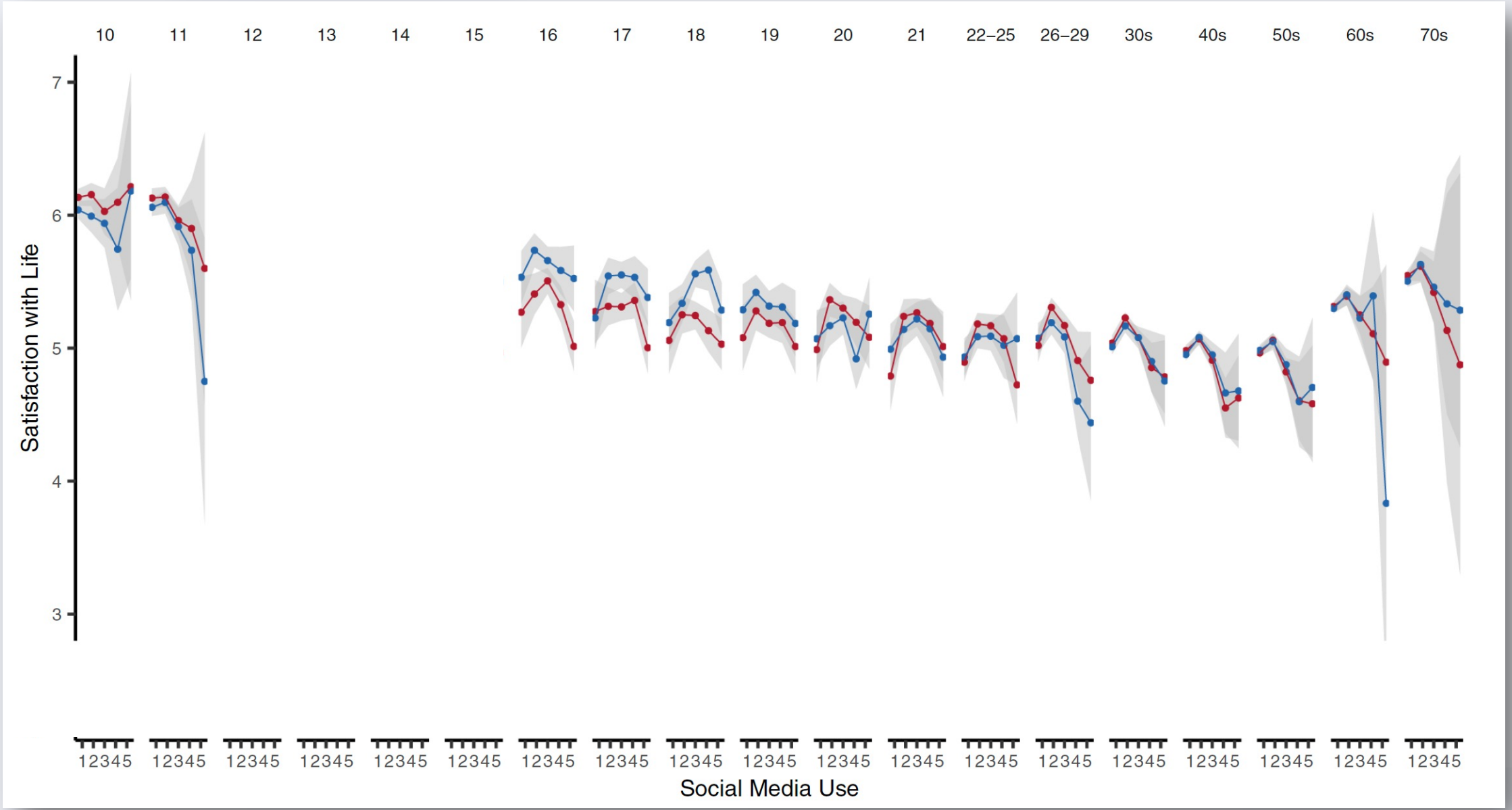

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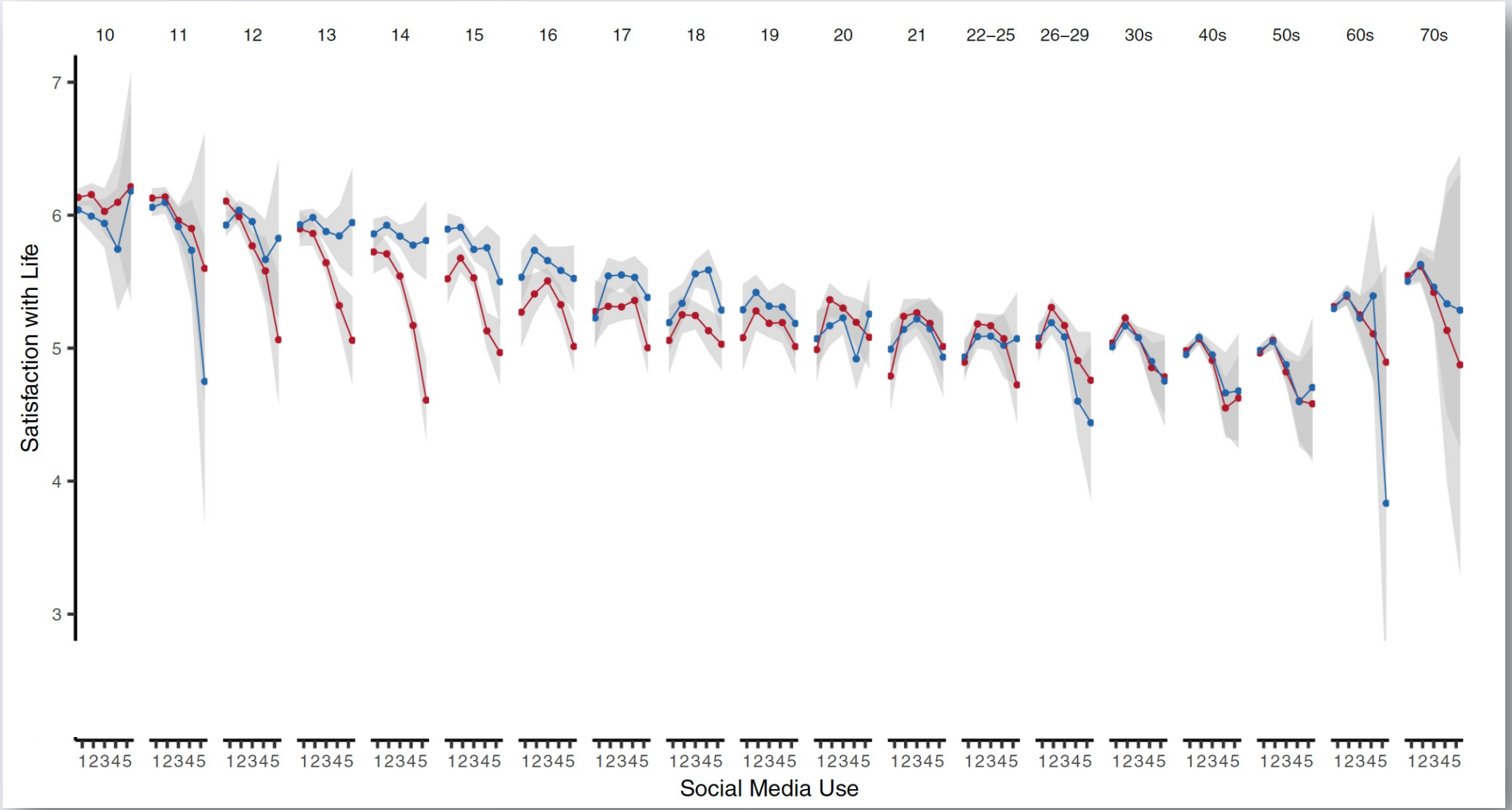

LONGITUDINAL STUDIES

Studies that indicate an effect at time 2	Studies that indicate little/no effect at time 2
~~[Verduyn et al., 2015] (see 5.1.1)~~	~~[Burke and Kraut, 2016] (see 5.2.1)~~
~~[Shakya and Christakis, 2017] (see 5.1.2)~~	~~**[Orben et al., 2019]** (see 5.2.2)~~
~~**[Boers et al., 2019]** (see 5.1.3)~~	~~[Coyne et al., 2020] (see 5.2.3)~~

Table 2: Longitudinal studies organized by whether or not social media use at time 1 predicts anything about mental health at time 2.

LONGITUDINAL STUDIES

nature COMMUNICATIONS

ARTICLE

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LONGITUDINAL STUDIES

Moderated by age and gender:
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Unmoderated by age and gender:
Lower than average life satisfaction is associated with an increase in social media use one year later

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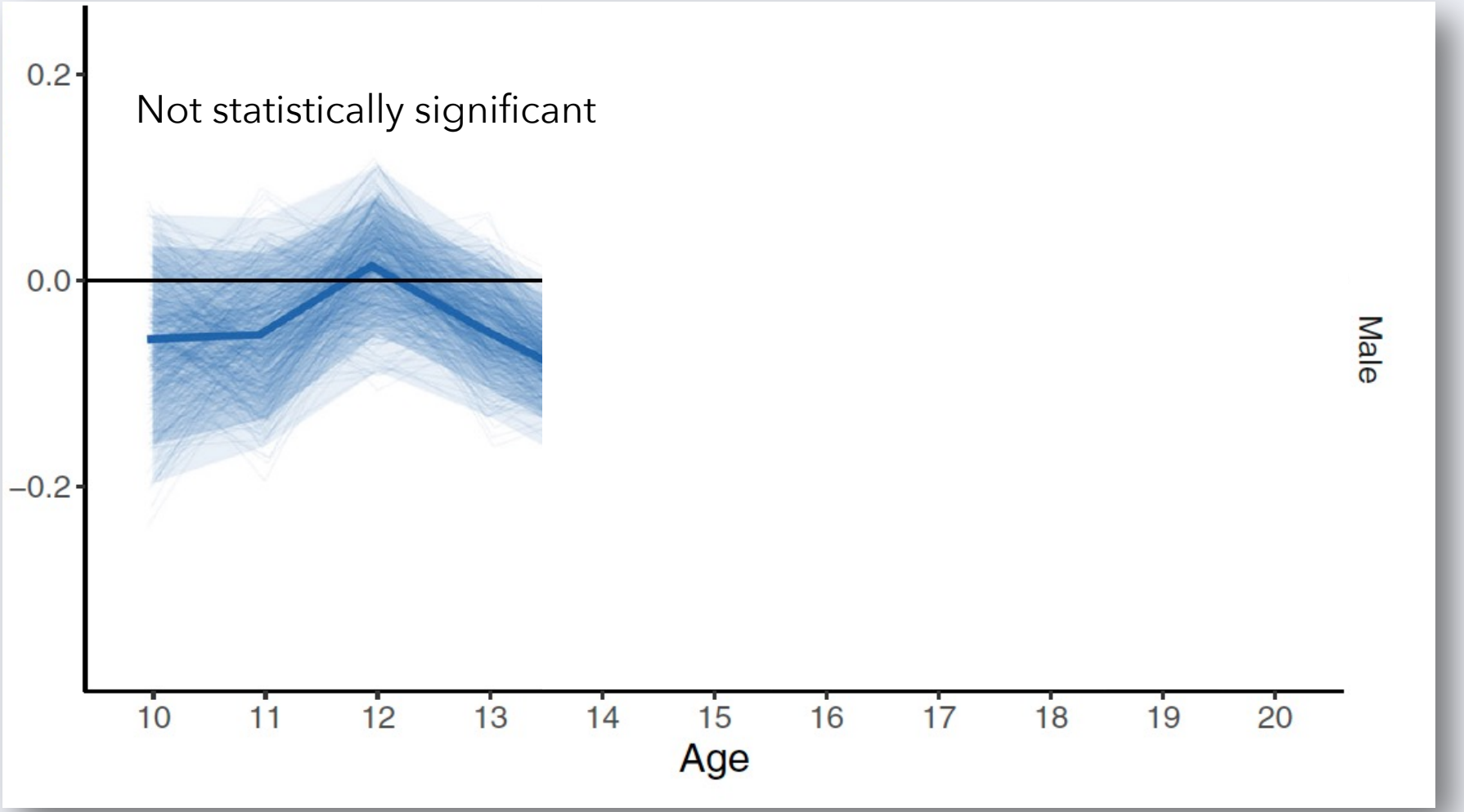
LONGITUDINAL STUDIES



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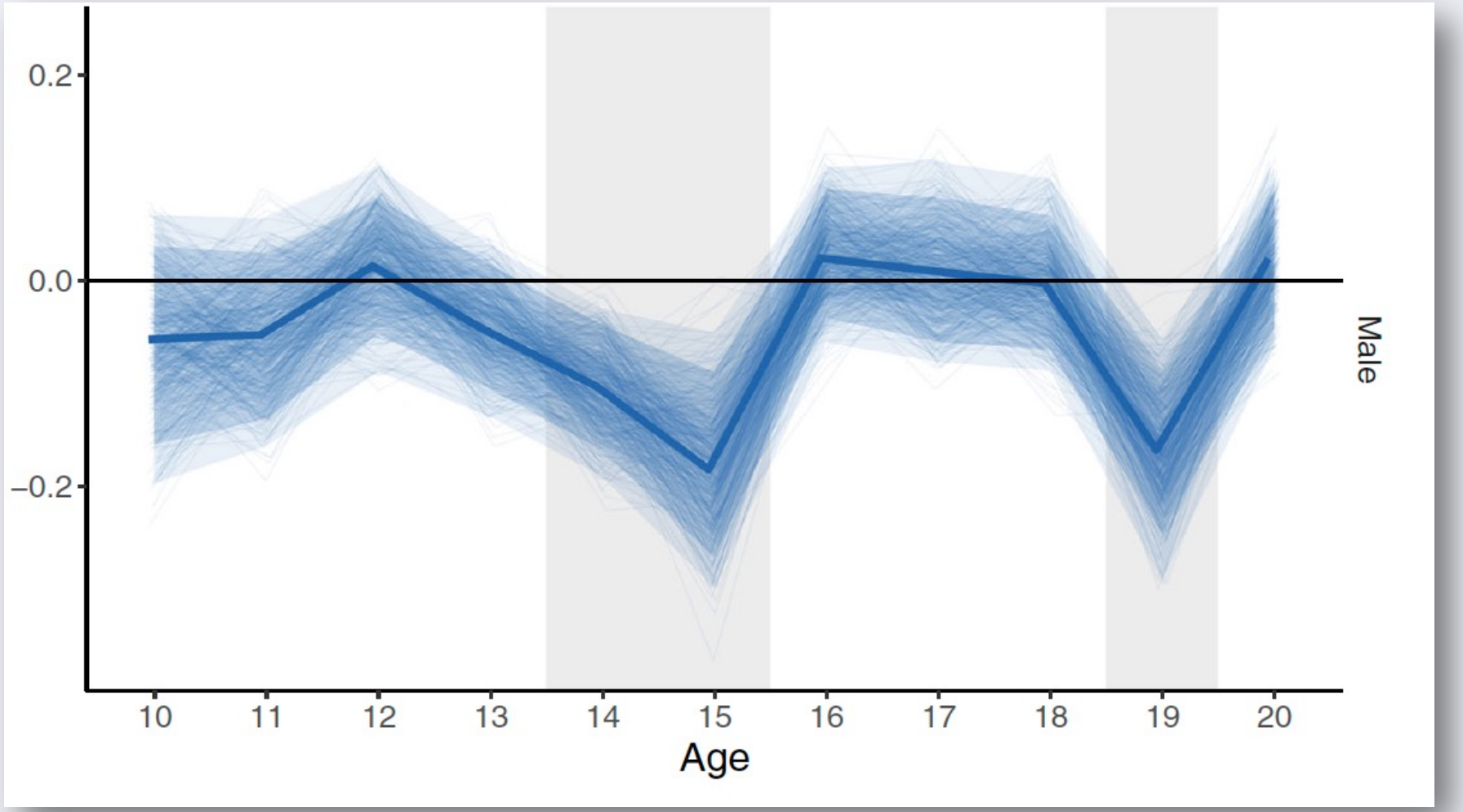

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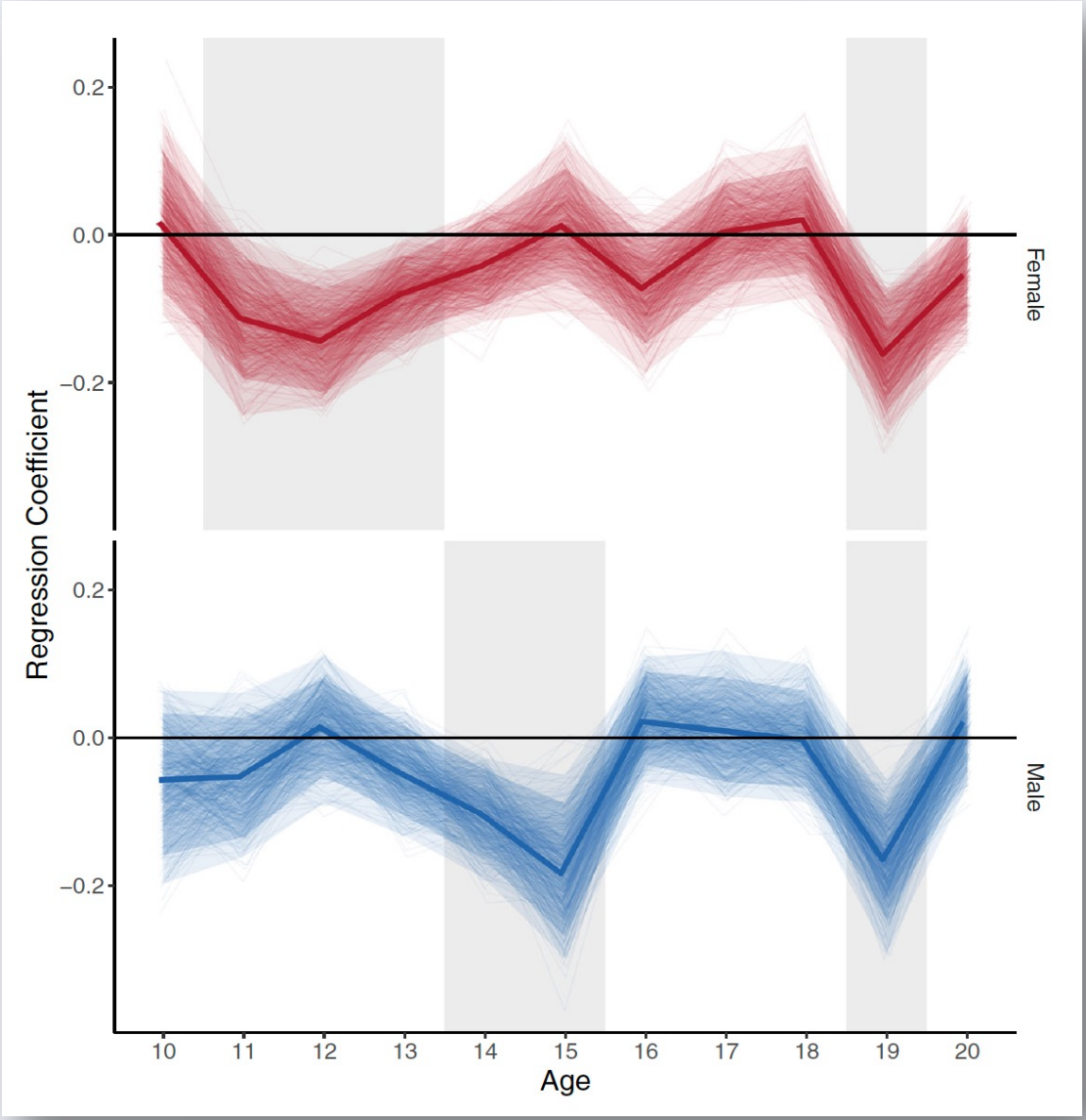

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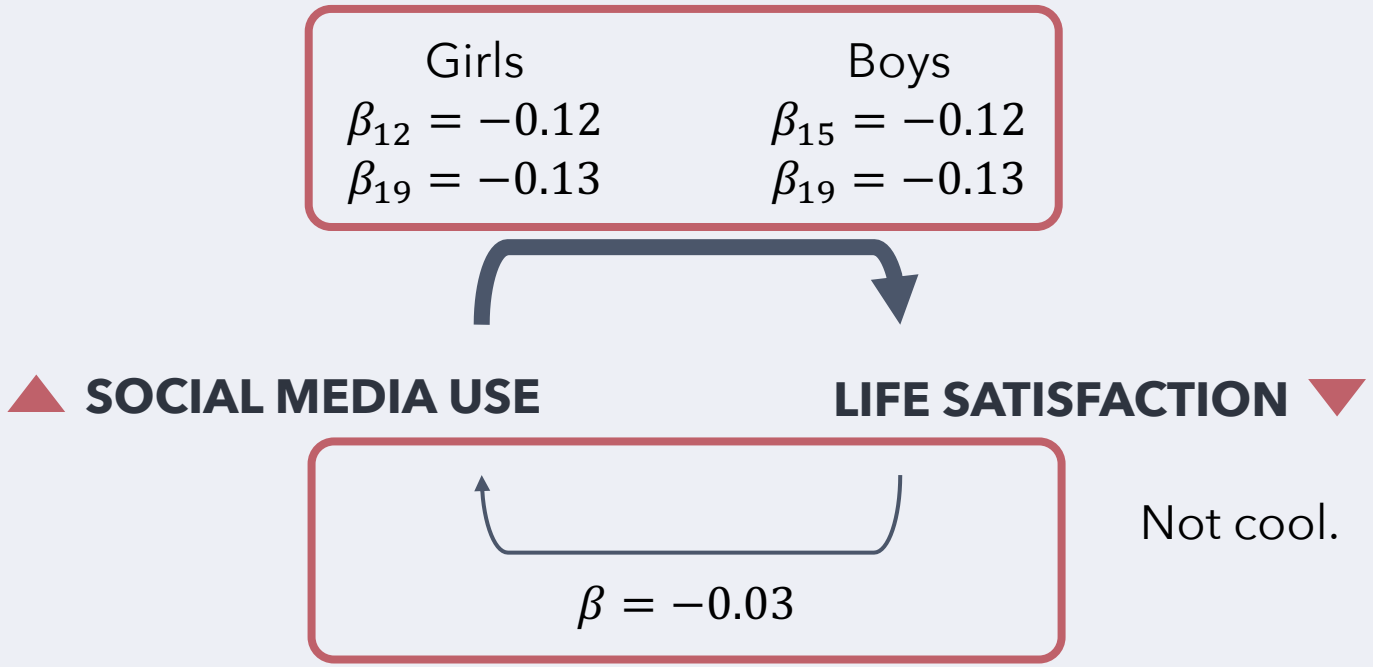
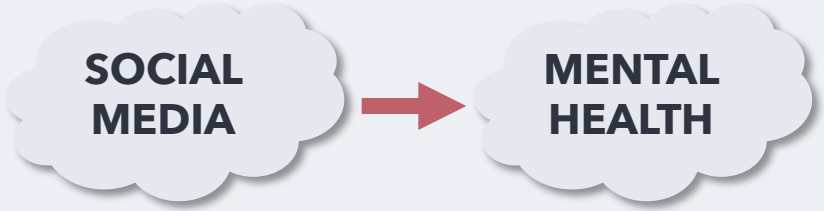


COURSE OF STUDY

- **CORRELATIONAL STUDIES:** Is there an association between social media use and adolescent mental health?

- **LONGITUDINAL STUDIES:** Does social media use at time 1 predict anything about mental health at time 2?

- **EXPERIMENTAL STUDIES:** Is there a causal effect of social media on mental health?



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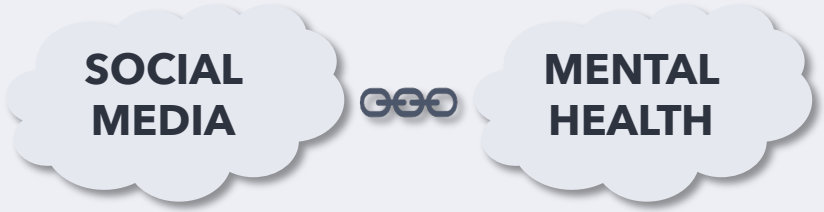

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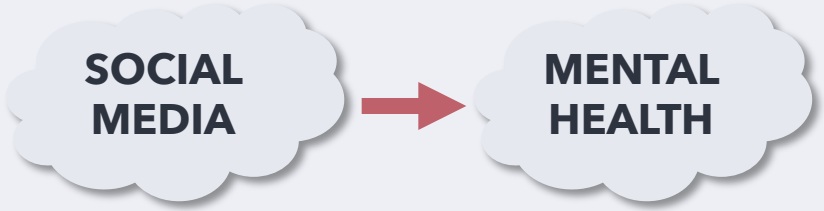

EXPERIMENTAL STUDIES

Studies that indicate a causal effect	Studies that indicate little/no causal effect
[Sagioglou and Greitemeyer, 2014]	[Vanman et al., 2018]
[Hunt et al., 2018]	~~[Hall et al., 2021]~~
[Kleemans et al., 2018]	[Przybylski et al., 2021]
[Sherlock and Wagstaff, 2019]	
[Allcott et al., 2020]	
[Braghieri et al., 2022]	

Table 3: Experimental studies organized by whether or not they indicate a causal effect between social media use and negative mental health outcomes.

EXPERIMENTAL STUDIES

Study	Causal Effect?	~Age	Treatment	Time-to-Assessment	Result

EXPERIMENTAL STUDIES

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Sagioglou and Greitemeyer, 2014	Yes	Young adults	Exposed to 20min of FB	Immediately afterward	decreased positive mood

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Kleemans et al., 2018	Yes	Girls	Exposed to idealized IG	Immediately afterward	decreased body image
Sherlock and Wagstaff, 2019	Yes	Young women	Exposed to idealized IG	Immediately afterward	decreased self-rated attractiveness

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Sherlock and Wagstaff, 2019	Yes	Young women	Exposed to idealized IG	Immediately afterward	decreased self-rated attractiveness
Allcott et al., 2020	Yes	Adults	Abstained from FB	4 weeks later	improved happiness, life satisfaction, depression, anxiety, and well-being

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Przybylski et al., 2021	No	Adults	Abstained from SM	1 day later	no effect

EXPERIMENTAL STUDIES - What happens when we limit social media?

Study	Causal Effect?	~Age	Treatment	Time-to-Assessment	Result
Sagioglou and Greitemeyer, 2014	Yes	Young adults	Exposed to 20min of FB	Immediately afterward	decreased positive mood
Hunt et al., 2018	Yes	Undergrads	Limited SM to 20min/day	4 weeks later	improved loneliness and depression
Kleemans et al., 2018	Yes	Girls	Exposed to idealized IG	Immediately afterward	decreased body image
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Przybylski et al., 2021	No	Adults	Abstained from SM	1 day later	no effect

EXPERIMENTAL STUDIES - What about when we're exposed to social media?

Study	Causal Effect?	~Age	Treatment	Time-to-Assessment	Result
Sagioglou and Greitemeyer, 2014	Yes	Young adults	Exposed to 20min of FB	Immediately afterward	decreased positive mood
Hunt et al., 2018	Yes	Undergrads	Limited SM to 20min/day	4 weeks later	improved loneliness and depression
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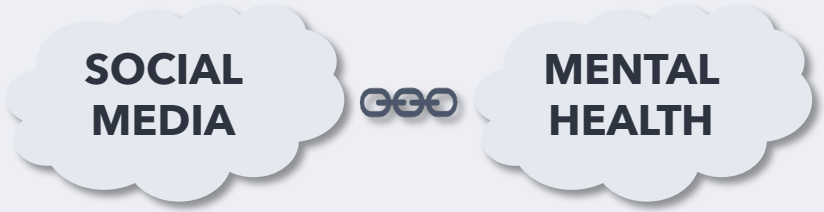
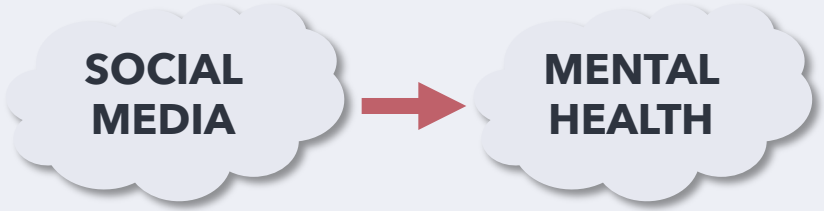
COURSE OF STUDY

- **CORRELATIONAL STUDIES:** Is there an association between social media use and adolescent mental health?



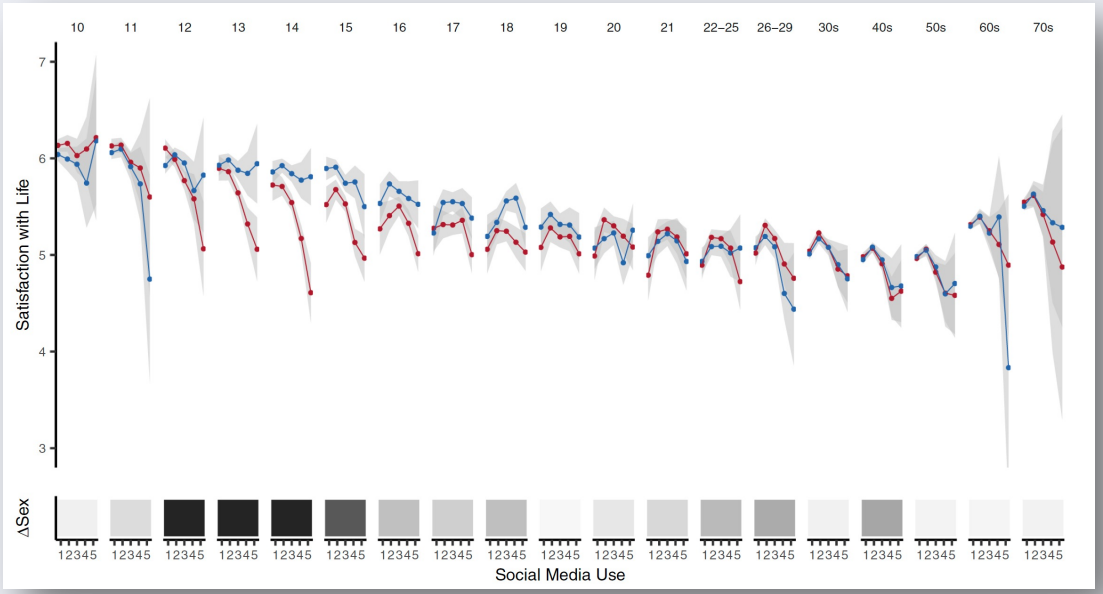
- **LONGITUDINAL STUDIES:** Does social media use at time 1 predict anything about mental health at time 2?

- **EXPERIMENTAL STUDIES:** Is there a causal effect of social media on mental health?



CONCLUSIONS

- **CORRELATIONAL STUDIES:**
  - the link is moderated by age and gender
  - for young adults and adults
    - no strong gender differences
    - the link is inverse-U-shaped
  - for adolescents,
    - there are stark gender differences
    - strong negative (~linear) relationships for young girls

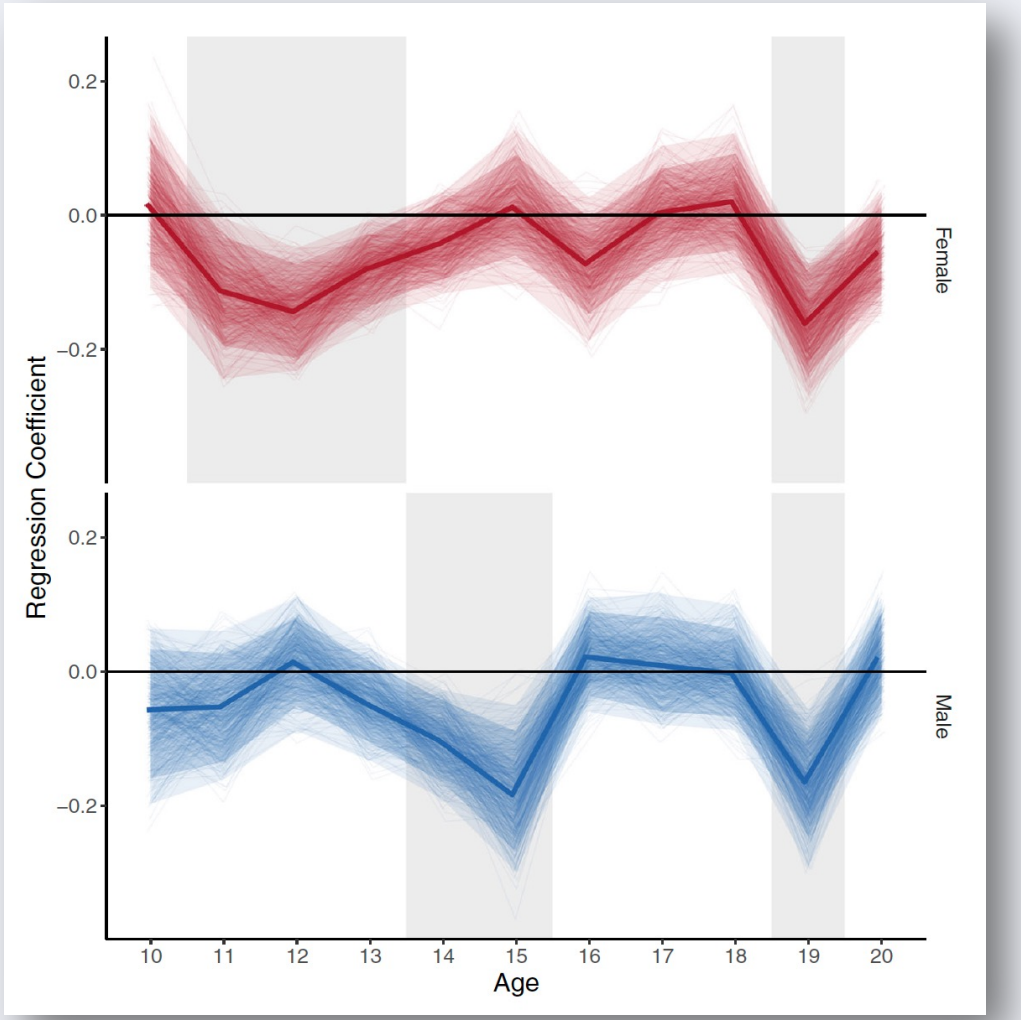


Orben, A., Przybylski, A. K., Blakemore, S.-J., & Kievit, R. A. (2022)

CONCLUSIONS

- **LONGITUDINAL STUDIES:**
  - both paths exist and are negative – the relationship is cyclic (not cool)
  - the pathway from SM to LS is stronger than the reverse pathway and is moderated by age and gender (the reverse is not)

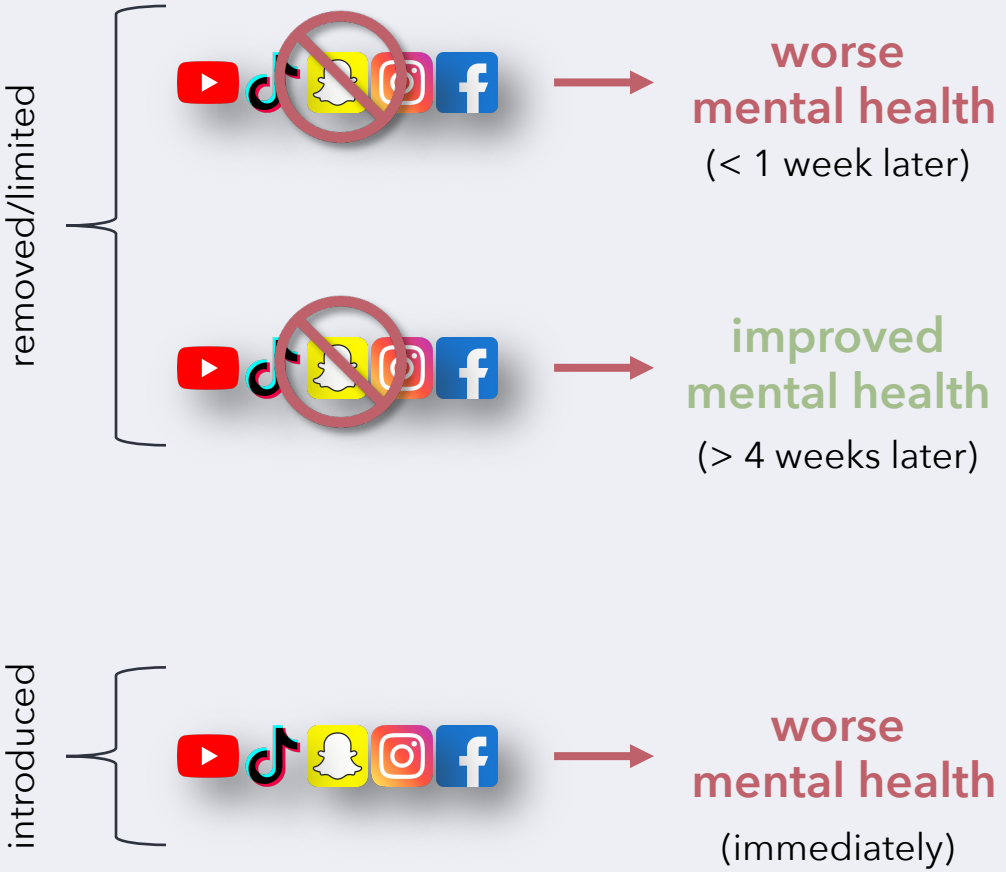
  - boys and girls experience different windows of sensitivity to social media, with strong negative links (SM -> LS) at
    - girls: ages 11-13, 19
    - boys: ages 14-15, 19
  - at no point does SM predict an increase in LS (1yr later)



Orben, A., Przybylski, A. K., Blakemore, S.-J., & Kievit, R. A. (2022)

CONCLUSIONS

- **EXPERIMENTAL STUDIES:**
  - when social media is randomly removed/limited, the effect depends on time-to-assessment
    - shortly after (<1 week), causes worse mental health outcomes – inline with withdrawal-like symptoms
    - after ~4 weeks, consistently improves mental health
  - when social media is randomly introduced, consistently results in worse mental health ~immediately afterward

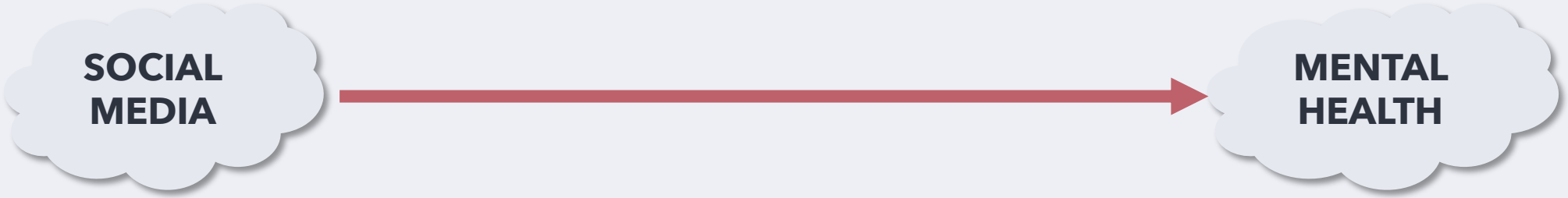


WHAT'S NEXT?

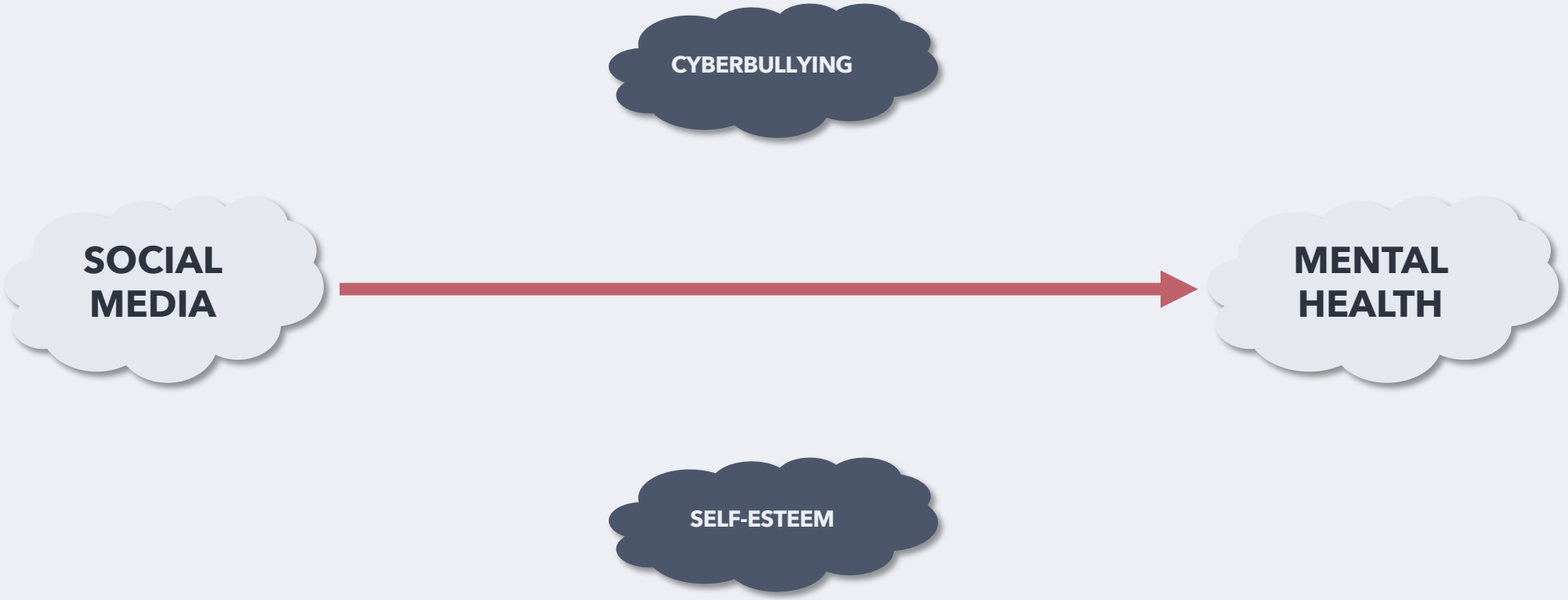
Mechanisms

MECHANISMS

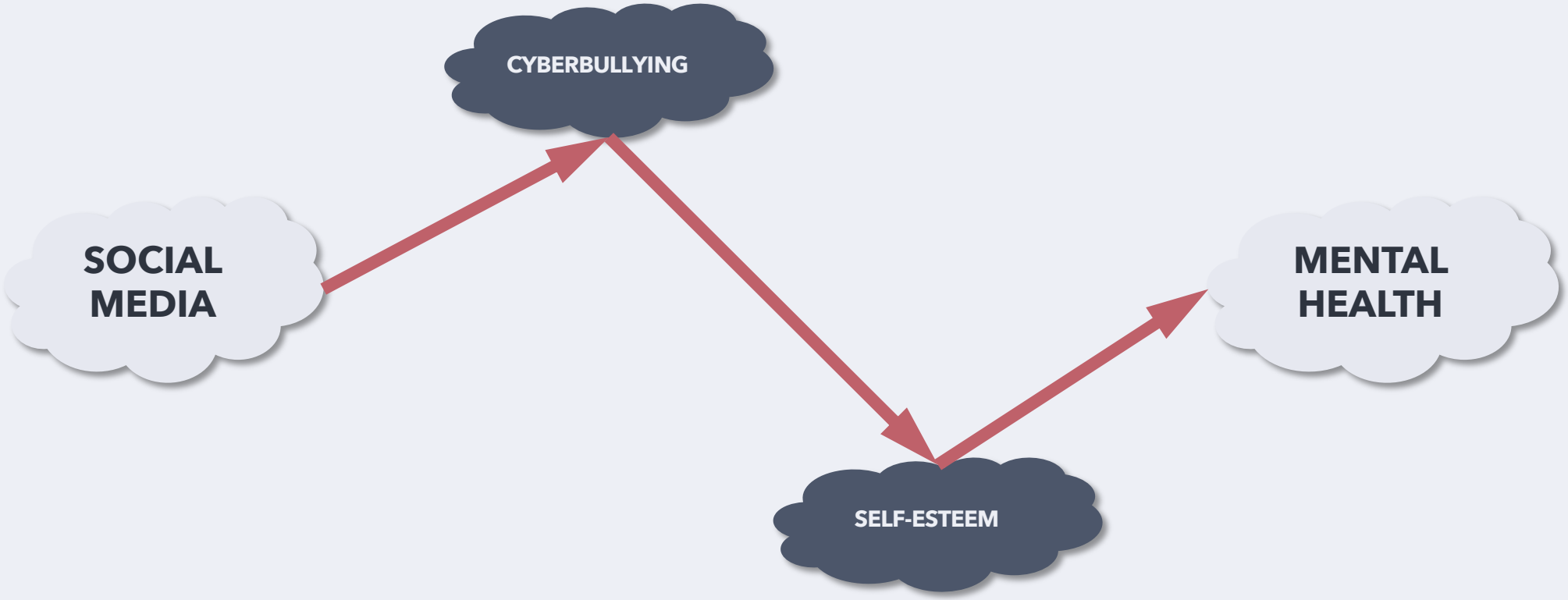
What are the underlying this processes that facilitate this causal pathway?



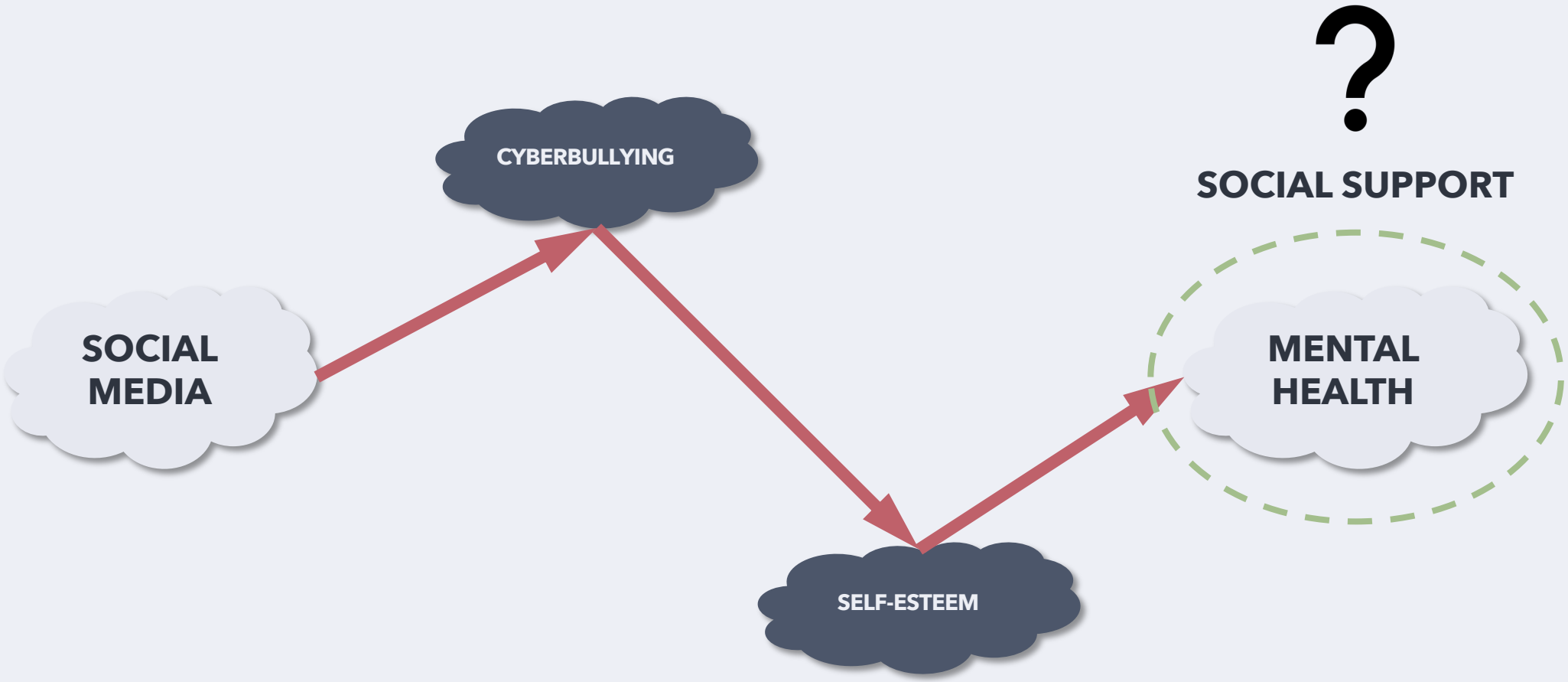
MECHANISMS



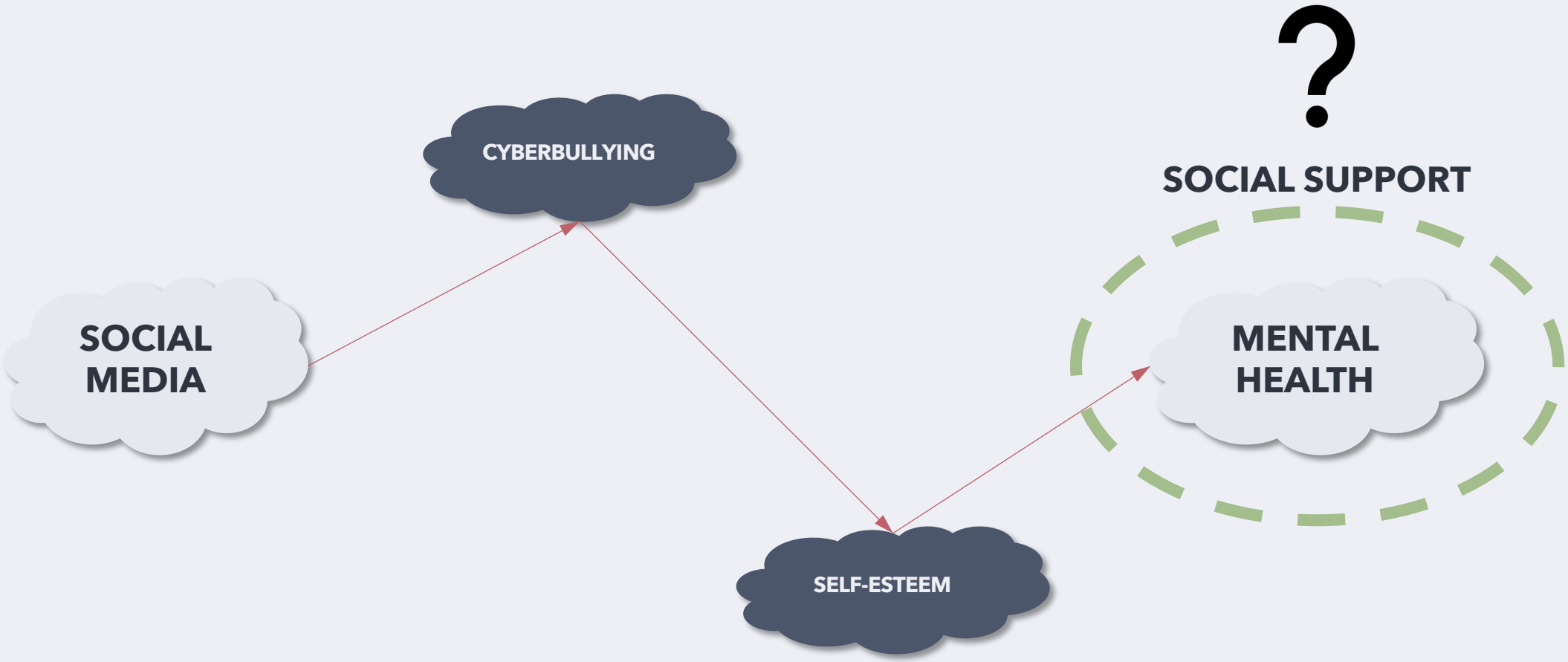
MECHANISMS



MECHANISMS


?
SOCIAL SUPPORT
CYBERBULLYING
SOCIAL MEDIA
MENTAL HEALTH
SELF-ESTEEM

MECHANISMS


?
SOCIAL SUPPORT
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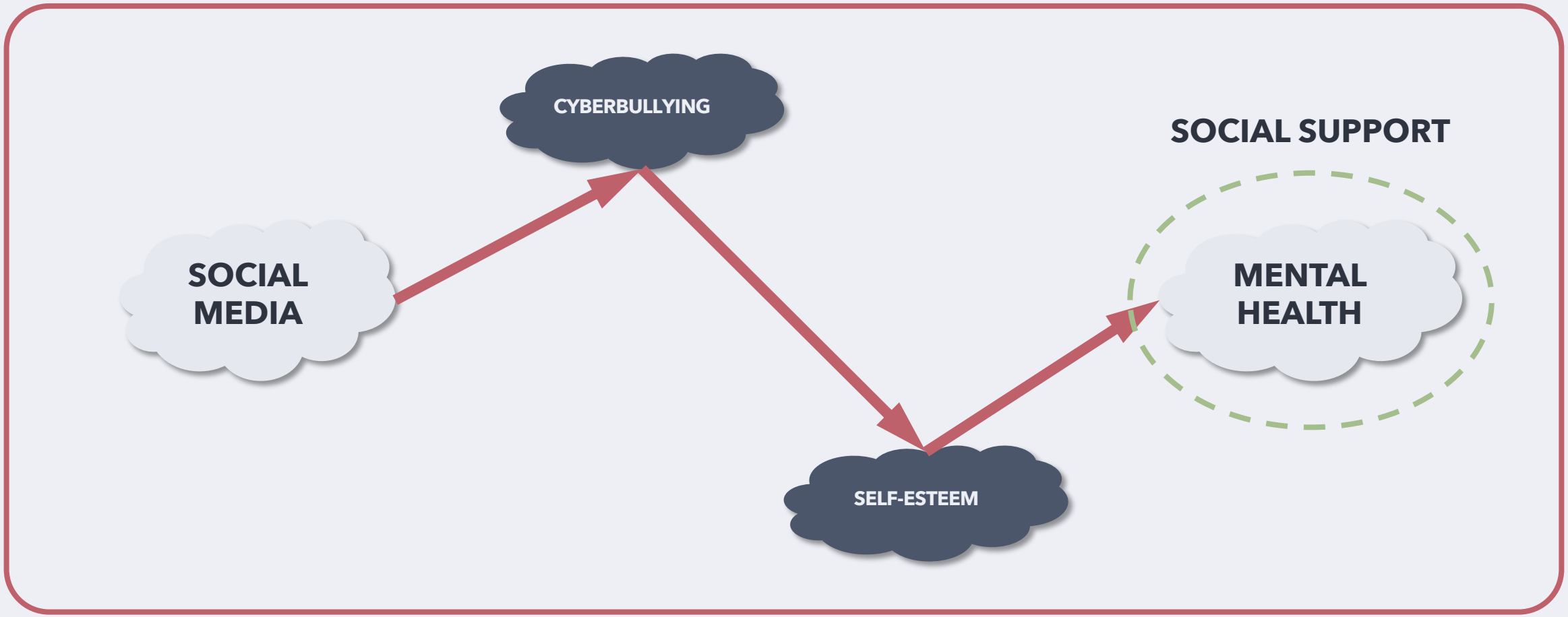
MECHANISMS

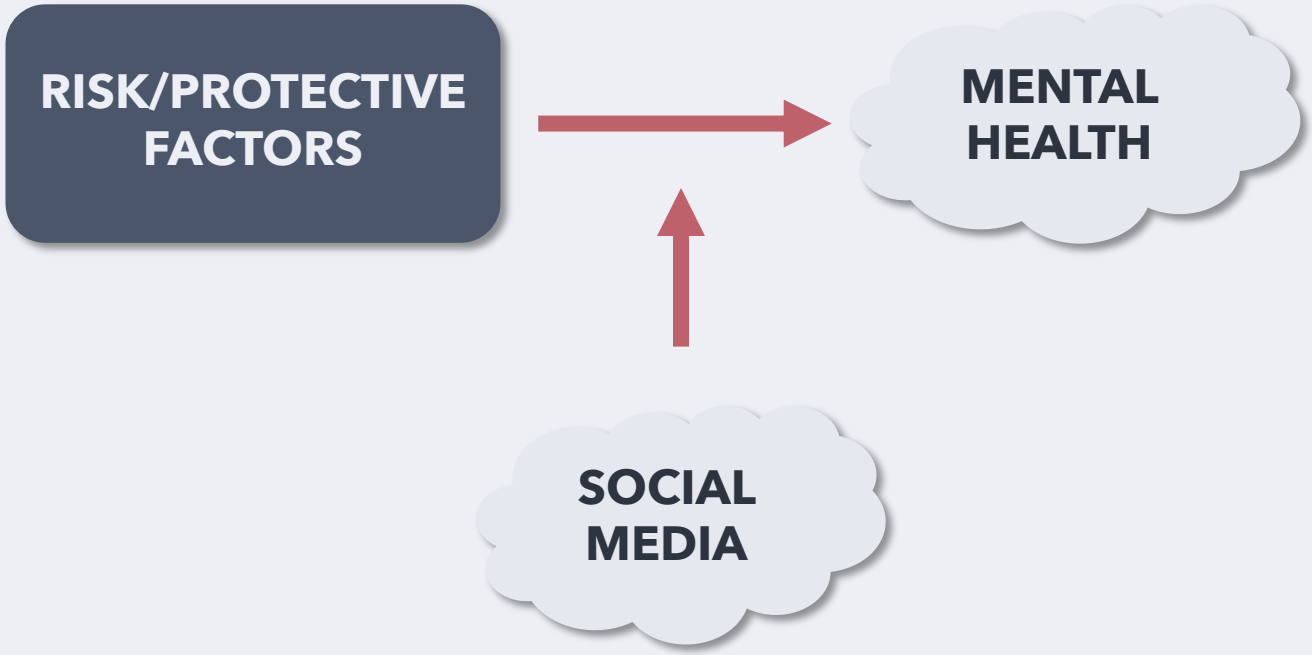
This is just one hypothesize mechanism...



MECHANISMS

MECHANISMS

Perhaps social media is the moderator!



MECHANISMS

In either case...

MECHANISMS

Specific aspects of social media...

- ALGORITHM
- DOOM-SCROLLING
- POSTING SELFIES
- TIME SPENT

RISK/PROTECTIVE FACTORS

Mental health of...

- CLINICAL POPULATIONS
- SEXUAL/ GENDER MINORITIES
- INDIVIDUAL/ COLLECTIVE CULTURES

MECHANISMS

A new research agenda:
To untangle the causal mechanisms underlying the relationships between social media and adolescent mental health.

Why?
So we can identify the **harmful** aspects of social media and **target** them, and identify the **beneficial** aspects of social media and **harness** them.

THANK YOU