

The Role of Cognitive Defense Strategies, Age, and Motivation in Children's Privacy Protection

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Incessant Online Activity

- **95% of teens have access to a smartphone**
 - 45% reporting that they are online “almost constantly” (Pew Research Center 2018)
- **Children and teens increasing online**
 - Youth aged 5-15 spend around 15 hours/week
 - overtaking time spent watching traditional TV (Ofcom 2016)
- **Pre-schoolers, aged 3-4, spend 8+ hours/week online**
 - Some parents admit they struggle with the allure of screens and are increasingly distracted by their devices (Pew Research Center 2018)



Capturing Children's Attention?

How do we encourage children to protect their information online?



Research Questions...

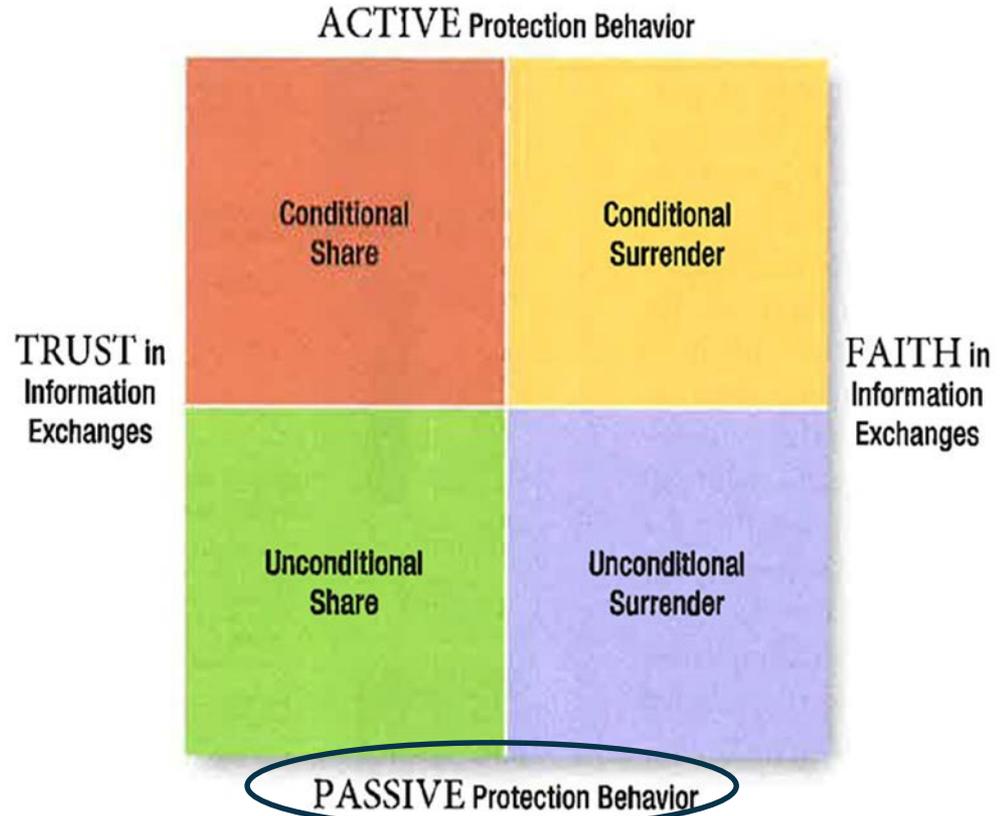
- Are children, teens, and parents protecting themselves online?
- Are there ways to empower children and teens regarding their online safety knowledge and behaviors?
- Is it better to have children learn online safety themselves or have parents enforce privacy?



Do children and teens place 'conditions' when they exchange information online?

Are they **passive** or **active** in protecting their information?

Can they be motivated to restrict sharing access?



Walker's SSIM (JPPM 2016)

Cognitive Defense Strategies, Age Groups & Motivation

- Motivation to Restrict Online Information (in general)
- Enhancing Ability: Cognitive Defense Strategies to Improve Privacy Knowledge (Brucks et al. 1988)
 - Educational Video: “Be a Smart Cookie” Video Clip
 - Quiz with Feedback: “Tips for Online Safety”

Accounted for ability differences in 7 item T/F quiz
with feedback

“Tips for Online Safety” Quiz

Please answer the following questions by marking either “true” or “false” to the best of your knowledge about online safety issues.

1. True or False? Every time you go online, a part of yourself is left behind.

- True
- False
- Don't Know

Correct! It is TRUE that every time you go online, a part of yourself is left behind.

Sorry, but you got this one wrong. It is actually TRUE that every time you go online, a part of yourself is left behind.

The answer is TRUE. Every time you go online, a part of yourself is left behind.

2. True or False? Your posts, likes, and shares will go away – they never stick.

- True
- False
- Don't Know

Correct! It is FALSE that your posts, likes, and shares will go away - they never stick.

Sorry, but you got this one wrong. It is actually FALSE because your posts, likes, and shares DO NOT go away - they DO stick.

The correct answer is FALSE. Your posts, likes, and shares DO NOT go away they DO stick.

3. True or False? Third-party shadows follow wherever you click.

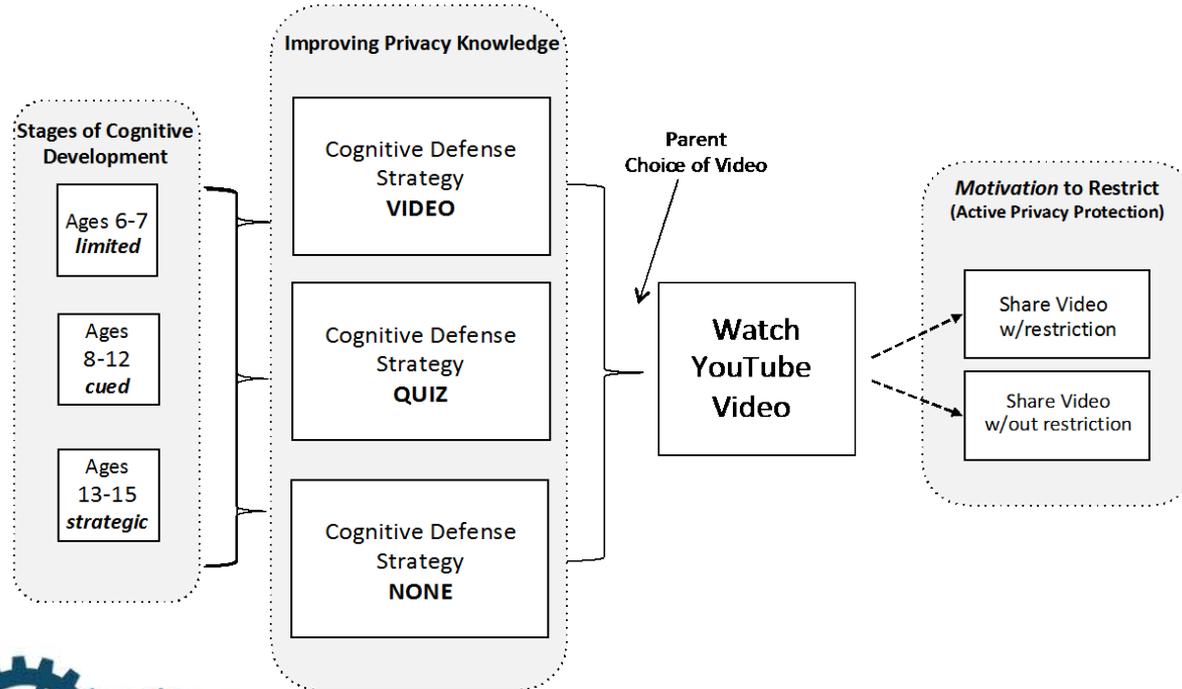
- True
- False
- Don't Know

Correct! It is TRUE that third-party shadows follow wherever you click.

Sorry, but you got this one wrong. It is actually TRUE that third-party shadows follow wherever you click.

The correct answer is TRUE. Third-party shadows follow wherever you click.

Study Framework



Study Predictions

H1: The quiz (with feedback) cognitive defense strategy should lead to



favorable beliefs about online safety, importance for restricting YouTube (YT) video watched, and willingness to restrict sharing access (than the other cognitive defense cue strategies)

H2: Children/teens with a higher motivation to restrict access/sharing (in general)



favorable beliefs about online safety, importance for restricting YouTube (YT) video watched, and willingness to restrict sharing access (than those with lower motivation to restrict sharing access in general)

H3: The strategic (years 13-15) age group should have



favorable beliefs about online safety, importance for restricting YouTube (YT) video watched, and willingness to restrict sharing access (than limited or cued)

Method

Data Collection

- Expert firm in online surveys and with experience with children/teens (IRB approval)
- Double consent procedure (parents then children/teens) for ages 6-15

3 x 3 between-subjects design

- **cognitive defense strategy** (none, quiz with feedback, educational video)
- **age difference category** (limited, cued, strategic)
- **high/ low motivation** to restrict online information (in general) (median split on 3-item, 7-point scale, $\alpha = .90$); [18 treatment cond.]

Main Study (after pretests) 513 children/teens



VIDEO

Read Quiz or Watch Video (or none)

Answered questions about online information opinions/beliefs



Watch a video online (parent's choice)

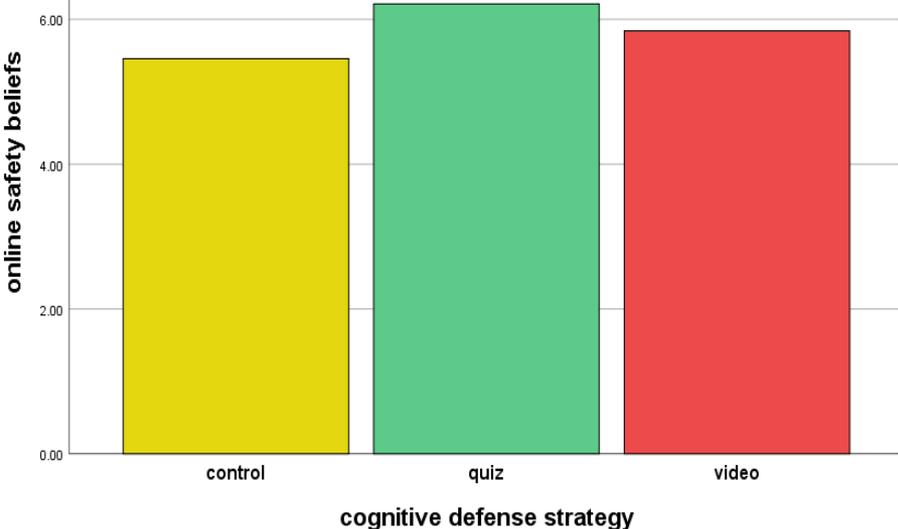
Key dependent measures

- **Online safety beliefs** (5-item, 7-point scale $\alpha = .85$)
- **Importance of restricting** YT video watched (single item, 7-point scale)
- **Willingness to share** YT video watched (single item, 7-point scale)
- **(If yes) with whom** (single item, 7-point scale)

Manipulation checks, as well as demographic information collected

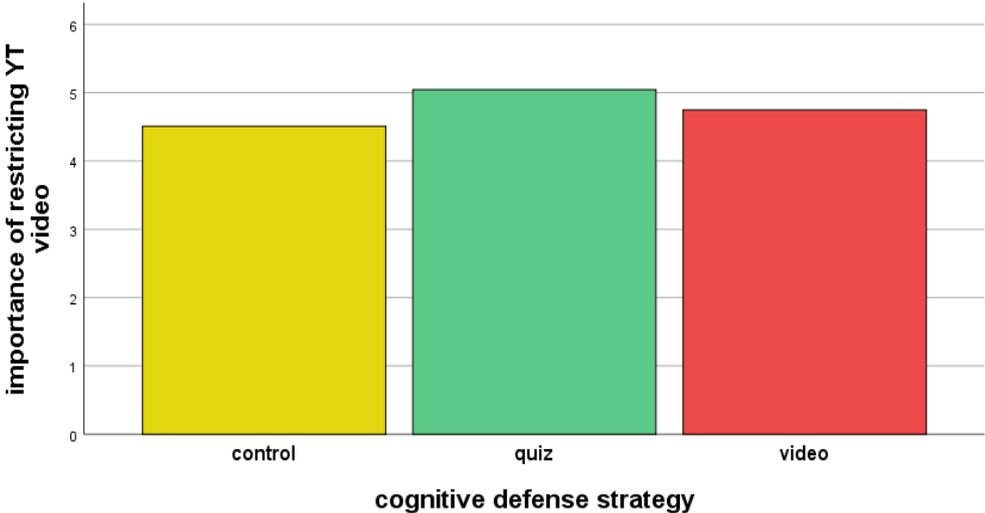
Online Safety Beliefs & Importance of Restricting YouTube Video Watched

Effects of Cognitive Defense Strategy on Online Safety Beliefs



Quiz > Video and Control; p <.05)

Effects of Cognitive Defense Strategy on Importance of Restricting the YouTube Video

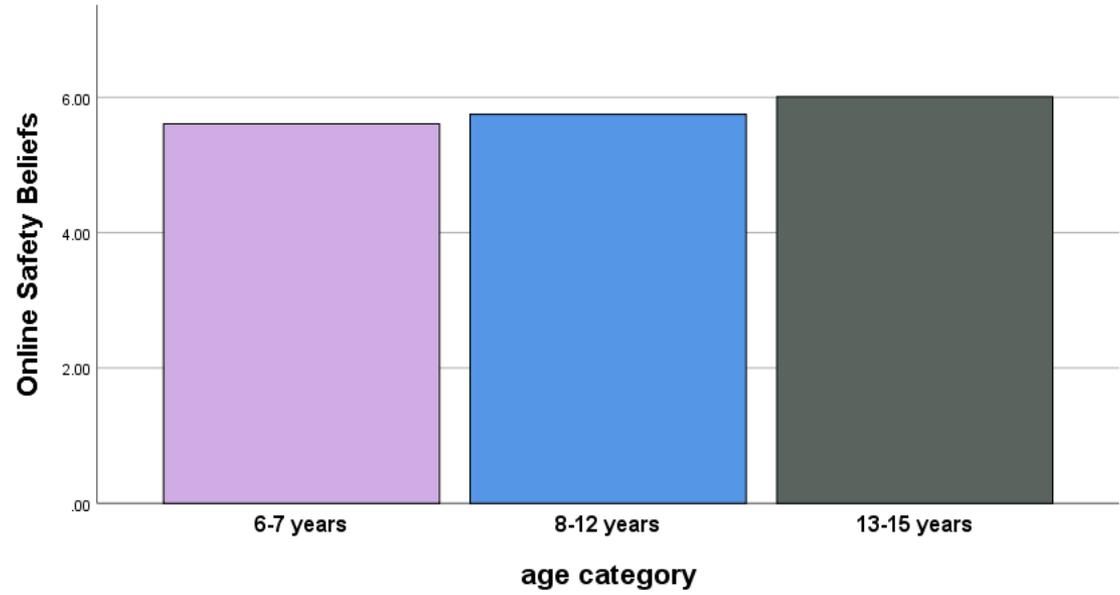


Quiz > Control; p <.05)



Online Safety Beliefs & Importance of Restricting YouTube Video Watched

Effects of Age Category on Online Safety Beliefs



13-15 yrs. > 8-12 years old and 6-7 years old; $p < .05$



Means (and SDs): Effects of Cognitive Defense Strategy (CDS), Age (A), and Motivation (M) on Online Safety Beliefs and Importance of Restricting YT Video

	Online Safety Beliefs	Importance Restricting YT Video
<i>Cognitive Defense</i>		
Control (a)	5.46 (1.26) ^{b,c}	4.93 (1.69) ^{b,c}
Ed. Video (b)	5.84 (1.03) ^{a,c}	5.52 (1.41) ^a
Quiz (c)	6.21 (0.94) ^{a,b}	5.53 (1.51) ^a
<i>Age Category</i>		
6-7 yrs. (a)	5.61 (1.23) ^c	4.64 (2.16)
8-12 yrs. (b)	5.75 (1.21) ^c	4.68 (2.02)
13-15 yrs. (c)	6.01 (0.97) ^{a,b}	4.90 (2.07)
<i>Motivation</i>		
Low (a)	5.31 (1.08) ^b	4.30 (1.81) ^b
High (b)	6.29 (1.02) ^a	5.20 (2.24) ^a

Note: Comparisons made down column. Significance ($p \leq .05$ or better) for SNK contrasts by predictions.

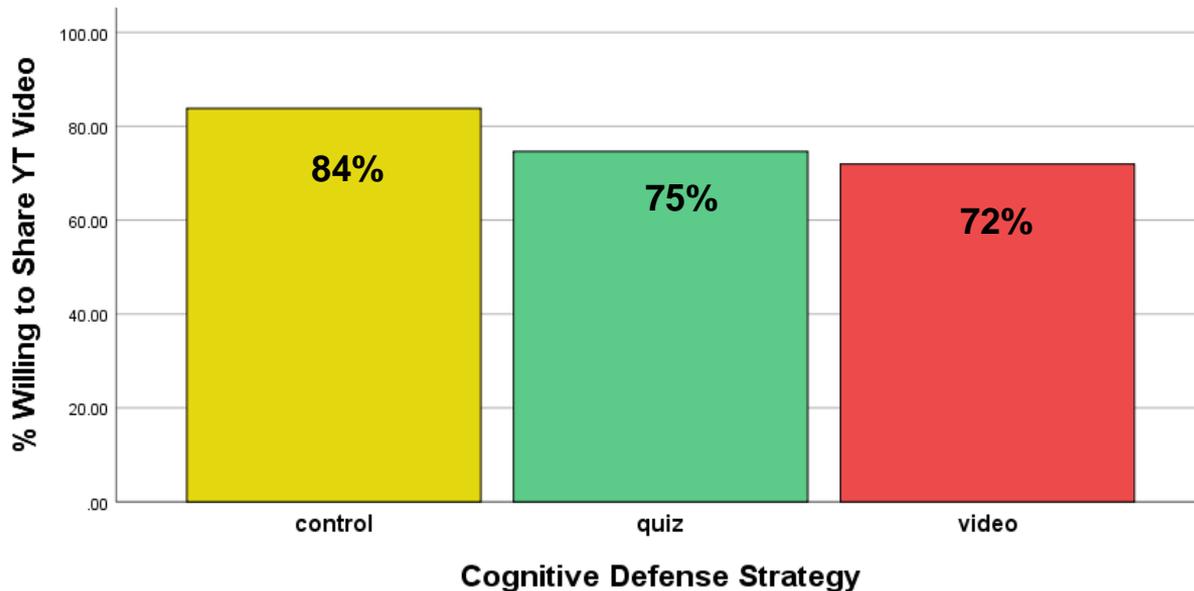
Decisions Willingness to Share YT Video/to Whom

χ^2 and Logistic Regression Results

- Willingness to Share the *YT Video watched?*
- *If Willing to Share, is it with Everyone?*

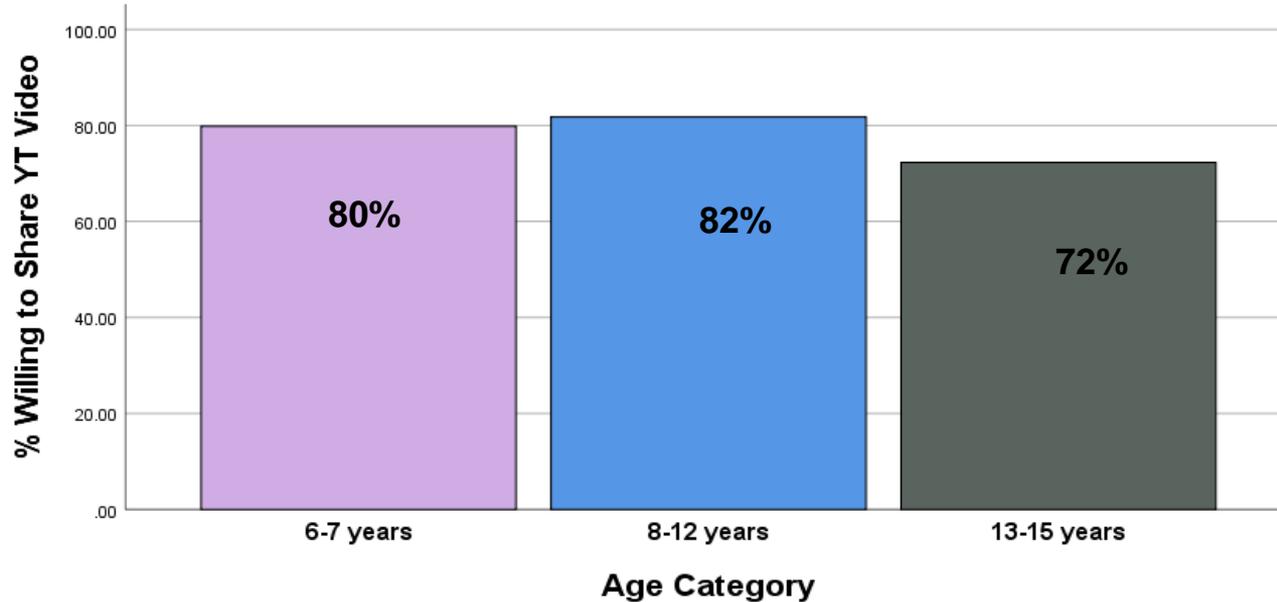


Effects of Cognitive Defense Strategy on Willingness to Share the YouTube Video



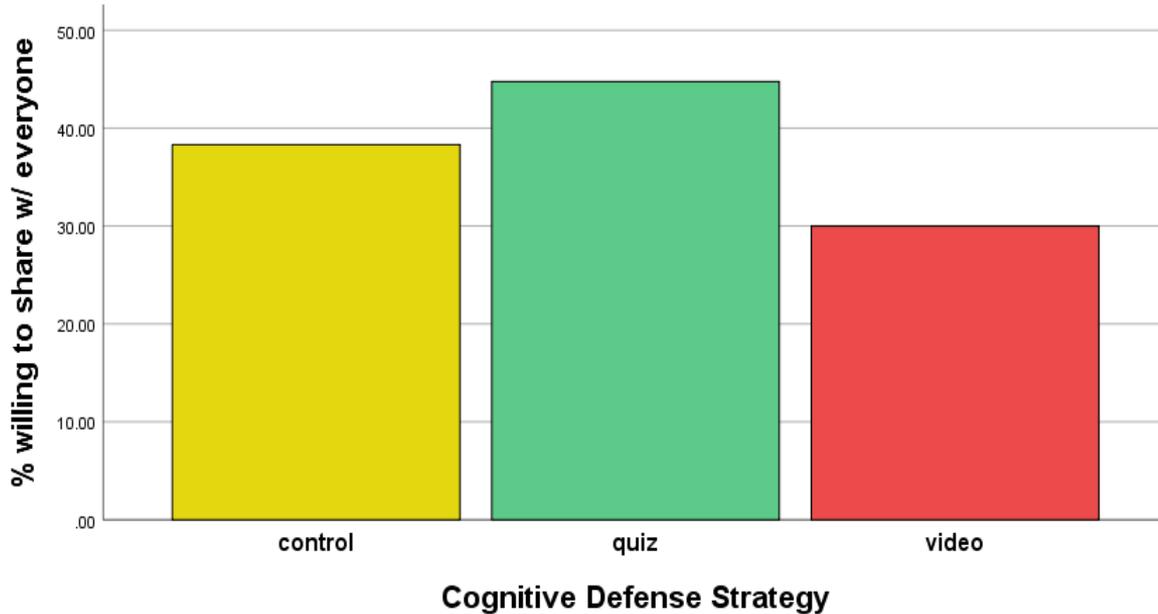
- $\chi^2(2) = 6.92; p < .05$
- Control > ed. video; [OR] = 2.02, $p < .05$; [95% CI: 1.15-3.55]
- Control > quiz; [OR] = 1.76, $p < .05$; [95% CI: 1.02-3.08]

Effects of Age Category on Willingness to Share the YouTube Video



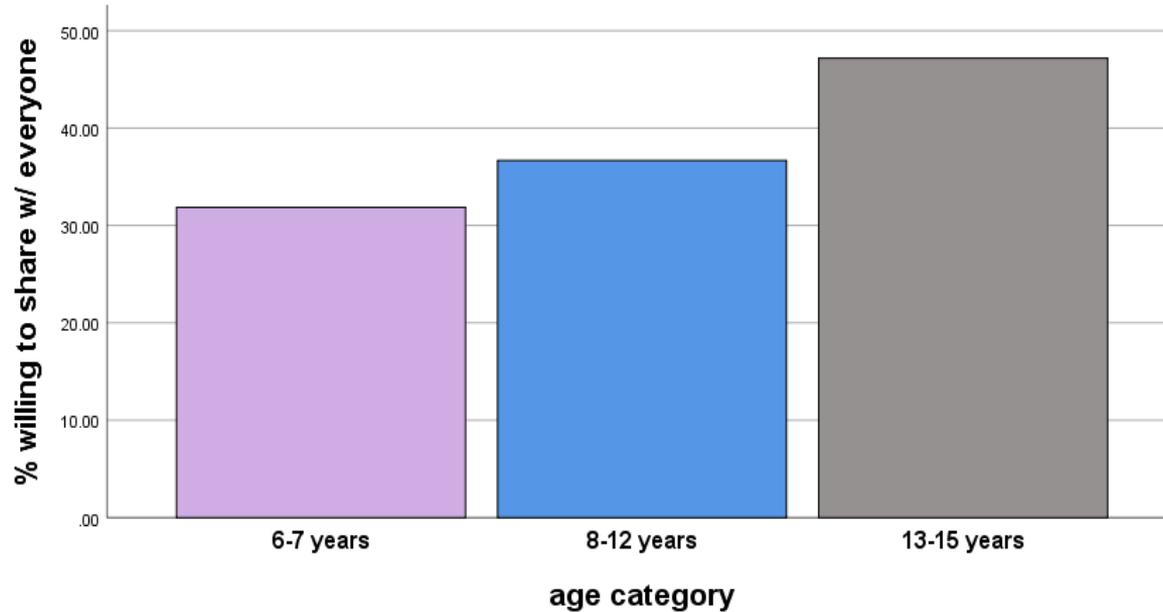
- $\chi^2(2) = 4.32$; $p = .12$
- 8-12 yrs. > 13-15 yrs.;
[OR] = 1.72, $p < .05$;
[95% CI: 0.99-2.89]

Effects of Cognitive Defense Strategy on Willingness to Share the YouTube Video with Everyone



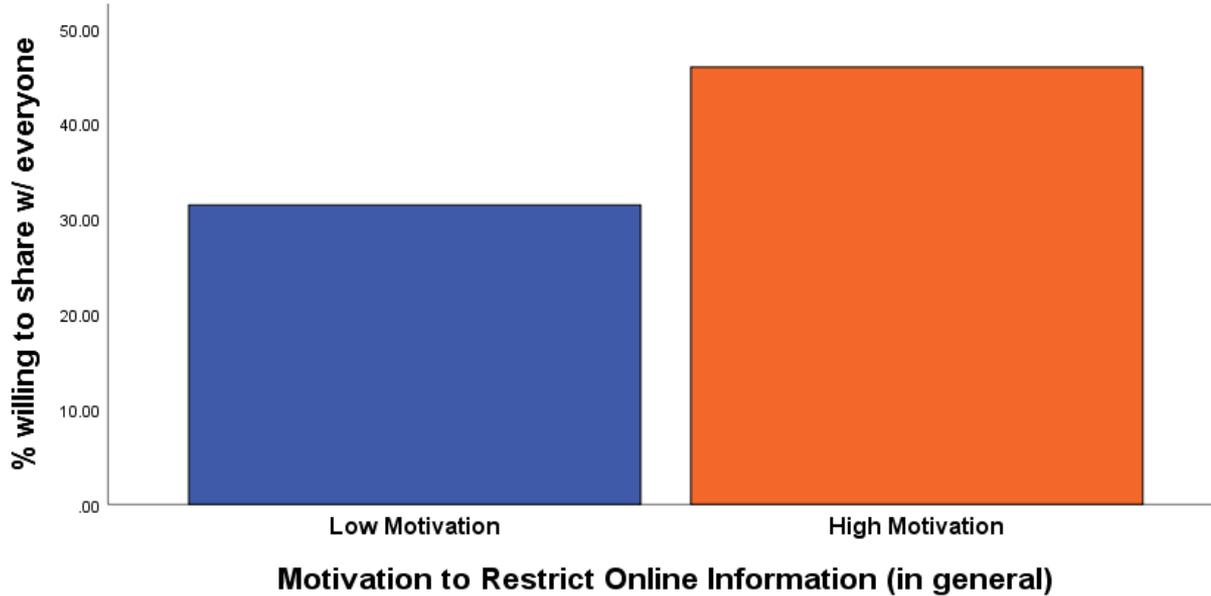
- $\chi^2 (2) = 4.16; p=.12$
- Quiz > ed. video;
B = .677; [OR] = 1.89,
 $p<.05$; [95% CI:1.02-3.49]

Effects of Age Category on Willingness to Share the YouTube Video with Everyone



- $\chi^2 (2) = 4.32; p=.12$
- 13-15 yrs. > 6-7 yrs.;
B = .647; [OR] = 1.91,
p<.05; [95% CI: 1.10-3.31]

Effects of Motivation on Willingness to Share the YouTube Video with Everyone



- $\chi^2 (1) = 7.52; p < .05$
- High motivation > low motivation; $B = .617$; [OR] = 0.54, $p < .05$; [95% CI: 0.35-0.77]

Discussion and Policy Implications

- **Online Safety Beliefs/Knowledge**
Quiz w/ Feedback; Strategic Age Group (13-15); and those w/ High Motivation to Restrict were best
- **Decisions to Restrict Sharing YT Video** Educational Video (72%) and Strategic Age Group (13-15; 72%) were best – but still high
- **If Willing to Share YT Video, is it *with Everyone*?**
Of those willing, older youth (13-15; 47%) and more motivated youth (46%) highest: overconfidence of some?
- **If Perceive Parental Restrictions** ➤ more positive online safety beliefs, greater importance of restricting YT video. Parents can have an influence!
- **Policy Implications**
Nudge industry/companies, encourage a national privacy campaign
~FDA's The Real Cost



Thank you!