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The role of social networking and messaging apps in adolescent exposure to sexually explicit materials: A 14-day window into adolescent smartphone usage

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'Nude selfies 'till I die!'

Kim Kardashian's speech at Webby awards 2016 after she received the Break the Internet award

Caution: This profile may include potentially sensitive content

You're seeing this warning because they Tweet potentially sensitive images or language. Do you still want to view it?

Yes, view profile

Despite regulations on social media, researchers and adolescents' experiences suggest there is sexual content

(Are & Paasonen, 2021; Lewis et al., 2018; Tiidenberg & Nagel, 2020)

But what are ,social media'?

Scrolling content vs. instant messaging (Valkenburg et al., 2022)



Social networking

- Allow for searching and viewing content
- Various levels of nudity policies and their enforcement



Instant messengers

- Allow for real time chatting, videocalling and sharing content
- No nudity policies enforced



RESEARCH QUESTION

What are the relationships between social networking and communication app use and exposure to sexually explicit content?

CONTRIBUTION

- Objective data of smartphone usage
 - Daily SEM exposure
 - Between- and within-person perspective

Methodology



Approach

- Smartphone app for research (,IRTIS app')
 - Combining ecological momentary assessment (EMA) & objective data collection

Data

- Project Modeling the FUTURE:
 - Czechia, N = 201 | 13 17 (Mage = 15.0, SD = 1.5, 41 % girls)



Statistical method

- Multilevel logistic regression: daily measurements (14) nested within participants
 - smartphone app use predictors divided to *between* part (mean use across 14 days) and *within* part (changes from day to day)



Measures



Entry questionnaire

- Gender
- Age
 - 0 M = 15.1, SD = 1.5
- Sensation seeking (Stephenson et al. 2003)
 - χ²(2) = 3.01, p = .222, TLI = 0.985, RMSEA = 0.050, SRMR = 0.020, internal consistency (ω = .795)
- Permissive attitudes
 - χ²(2) = 0.36, p = .835, TLI = 1.029, RMSEA = 0.000, SRMR = 0.007, internal consistency (ω = .822)



- Instant messaging apps usage
- Social networking app usage
- Sexual exposure
 - High consistency in reporting (categorical ω = 0.72)

Does social networking and messaging app usage increase odds of exposure to sexually explicit material?

- Average exposure: 2,5 days out of 14
- No association with both app usages
- Between-person perspective
 - meaning: when we look at differences between all adolescents, are those who use these apps more at higher risk of exposure?



Are the odds of exposure higher on the days when the person uses apps more than it is typical for them?

- No association with both app usages
- Within-person perspective
 - meaning: when we look at differences in individual behavior, is there a difference in odds of exposure?



Are the odds of exposure higher in boys compared to girls? (between-person)

Boys who use messaging apps have higher odds of exposure (44.3***)

Are the odds of exposure higher in boys compared to girls on the days when their app usage is higher than it is typical for them? (within-person) (n. s.)

...and the same with age (n. s. in both cases)

Does gender, age, sensation seeking, and permissive attitudes increase odds of exposure?



Gender Being a boy > 11.4***



Permissive attitudes

n. s.



Age n. s.



Sensation seeking

Higher sensation seeking > 2.3^{***}



		Full table of results - Model 3, N=178													
					95	% CI									
Fixed effects	coefficient	est	р	OR	LL	UL									
Intercept	γοο	-2.30	<.001	0.10	0.06	0.16									
SN AU (daily)	γ10	0.11	.368	1.11	0.88	1.40									
SN AU (person mean)*	γ01	0.44	.048	1.56	1.01	2.42									
M AU (daily)	γ20	-0.06	.832	0.95	0.55	15.85									
M AU (person mean)	γ02	-0.53	.498	0.59	0.13	2.72									
Gender	γоз	2.43	<.001	11.39	5.14	25.25									
Age	γ04	0.10	.447	1.10	0.86	1.41									
Sensation seeking	γ05	0.82	<.001	2.27	1.50	3.46									
Permissive attitudes	γ06	0.34	.088	1.41	0.95	2.09									
SN AU (person) × Gender	γ07	-0.28	.506	0.76	0.33	1.72									
SN AU (person) × Age	γοε	0.01	.953	1.01	0.74	1.38									
M AU (daily) × Gender	үоэ	3.79	.033	44.30	1.36	1440.87									
M AU (daily) × Age	γ10	-0.30	.490	0.74	0.32	1.73									

*The interaction term included in M3 suppressed the main effect of overal social networking app use, which became significant in M3. Therefore, these results should be interpreted with caution.

Key take-aways

- Exposure to sexually explicit materials among our participants was not related to their use of social networking and instant messaging apps
- Boys who use instant messengers are more likely to see something sexual compared to girls
- Role of content?

Thank you!



Let's connect!

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		Model 0					Model 1				Model 1A						Model 2					Model 3				
					959	6 CI			95% CI				95% CI					95% CI					95	5% CI		
Fixed effects	coef.	est.	р	OR	LL	UL	est.	р	OR	LL	UL	est.	р	OR	LL	UL	est.	р	OR	LL	UL	est.	р	OR	LL	UL
Intercept	γοο	-2.00	<.001	0.14	0.08	0.22	-2.03	<.001	0.13	0.08	0.21	-2.02	<.001	0.13	0.08	0.21	-2.21	<.001	0.11	0.07	0.17	-2.30	<.001	0.10	0.06	0.16
SN AU (daily)	Υ 10						0.06	.668	1.06	0.78	1.44	0.10	.401	1.10	0.88	1.39	0.11	.372	1.11	0.88	1.40	0.11	.368	1.11	0.88	1.40
SN AU (person mean)	γ 01						0.19	.368	1.21	0.80	1.82	0.19	.337	1.21	0.82	1.79	0.27	.144	1.31	0.91	1.88	0.44	.048	1.56	1.01	2.42
M AU (daily)	γ20						-0.10	.437	0.91	0.46	1.81	-0.11	.649	0.90	0.57	1.41	-0.08	.719	0.92	0.59	1.43	-0.06	.832	0.95	0.55	15.85
M AU (person mean)	Yoz						0.99	.058	2.69	1.14	7.44	0.96	.061	2.61	0.96	7.11	0.70	.110	2.02	0.85	4.77	-0.53	.498	0.59	0.13	2.72
Gender	γоз																2.17	<.001	8.76	4.18	18.34	2.43	<.001	11.39	5.14	25.25
Age	Y04																0.15	.233	1.16	0.91	1.48	0.10	.447	1.10	0.86	1.41
Sensation seeking	γοs																0.78	<.001	2.17	1.46	3.25	0.82	<.001	2.27	1.50	3.46
Permissive attitudes	γοε																0.38	.062	1.46	0.98	2.18	0.34	.088	1.41	0.95	2.09
SN AU (person) × Gender	γ07																					-0.28	.506	0.76	0.33	1.72
SN AU (person) × Age	γов																					0.01	.953	1.01	0.74	1.38
M AU (daily) × Gender	γоэ																					3.79	.033	44.30	1.36	1440.87
M AU (daily) × Age	γ ο;10																					-0.30	.490	0.74	0.32	1.73
Random effects																										
Intercept var for SEME	τ _{οο}	4.92	<.001		2.82	7.03	4.84	<.001		2.79	6.89	4.73	<.001		2.80	6.66	3.01	<.001		1.66	4.36	2.94	<.001		1.65	4.23
Slope var for SN AU	τ11						0.11	.732		-0.52	0.73															
Slope var for M AU	τ22						0.10	.658		-0.33	0.52															
Cov of u_{0i} and u_{1i}	τ ₀₁						0.21	.668		-0.75	1.16															
Cov of u_{0i} and u_{2i}	τ ₀₂						-0.57	.437		-2.01	0.87															
Cov of u_{1i} and u_{2i}	τ ₁₂						0.02	.876		-0.27	0.31															