



Parental influences on excessive internet use among Irish adolescents

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INTRODUCTION

What is excessive internet use?

- High engagement with internet \neq excessive use (Charlton and Danforth, 2007)
- Excessive internet use (EIU): **“poorly controlled preoccupations, urges or behaviours regarding internet use that lead to impairment or distress”** (Weinstein and Lejoyeux, 2010)
- “Problematic internet use”, “internet addiction”, “compulsive internet use”, “pathological internet use”

Motivation

- Internet dependency = Public health concern
 - ➔ Internet Gaming Disorder included in ICD-11 (WHO, 2018) and DSM-V (APA, 2013)
 - Varied levels of urgency in policy response: South Korea (Koh, 2015) vs UK (NHS, 2019) vs Ireland (HSE, 2019)
- Public health concern ➔ psychological comorbidities (WHO, 2015)
- Adolescents especially at risk (Borca et al., 2015)
 - Developmental psychological needs (Beard, 2011; Douglas et al., 2008)
- Understanding **parental influence** important for prevention *and* resolution of EIU (Worthman et al., 2017; Livingstone and Ólafsson, 2018)

Literature

- Prevalence rates vary widely
 - Est. 3.8% in European adolescents (Blinka et al., 2015)
 - Male preponderance
- Etiological models of EIU → conceptualised as a **coping mechanism / compensatory behaviour** arising from poor psychosocial wellbeing (Brand et al., 2014; Kardefelt-Winther, 2014; Douglas et al., 2008)
- Parental profile
 - Difficulties in relationships & negative parental behaviour (Li, Lei and Tian, 2018)
 - No consistent association between parental mediation and EIU (Nielsen, 2019)

Research questions

1. *What parental influences at 13 years old are associated with more EIU symptoms at 17/18 years old?*
2. *What parental influences at 13 years old are associated with severe forms of EIU at 17/18 years old?*

METHODS

Data

- Two waves of *Growing Up in Ireland (GUI)* “Child Cohort” born in ('98)

Wave 2	
Sample size	7,525
Data collected	2011/12
Age	13



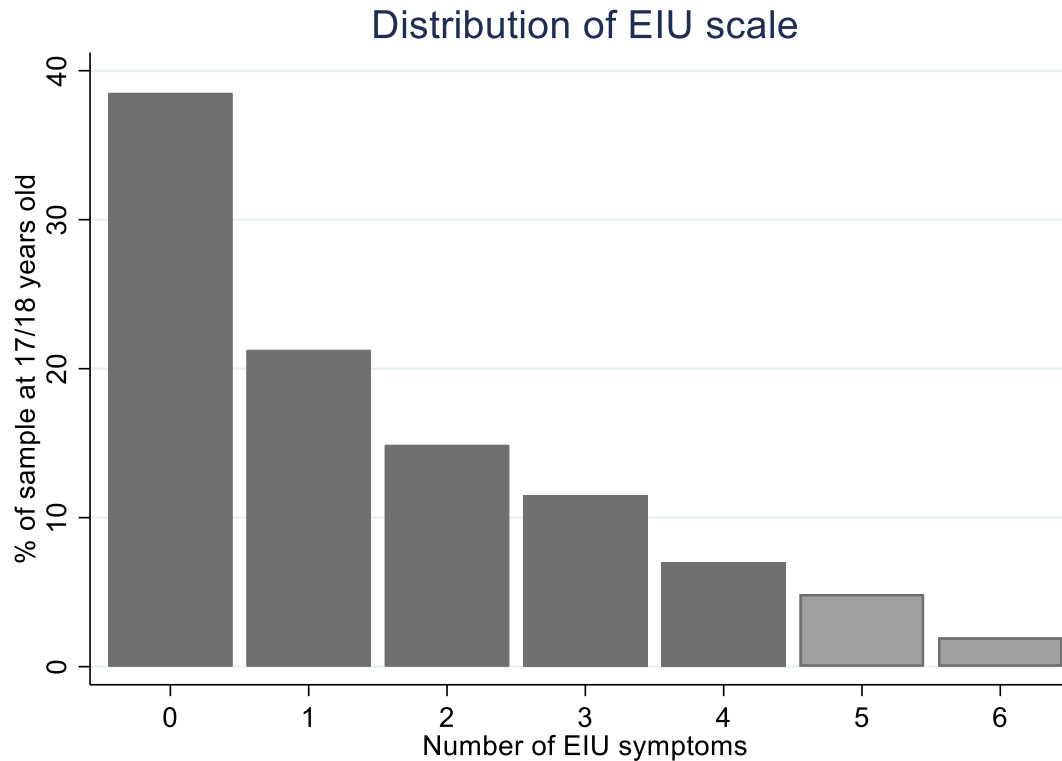
Wave 3	
Sample size	6,216
Data collected	2016
Age	17/18

- Final analytical sample after dropping individuals with missing observations for variables of interest: **N=5,084 from both waves**

Outcome variable (age 17/18)

- 6 components of addictive behaviour (Griffiths, 2005):
 1. Felt bothered when I cannot be on the internet (*withdrawal symptoms*)
 2. Caught myself surfing when I am not really interested (*tolerance*)
 3. Spent less time than I should with family, friends or doing coursework because of the internet (*conflict*)
 4. Tried unsuccessfully to spend less time on the internet (*relapse*)
 5. Been annoyed or reluctant when a parent or other adult has asked me to stop using the internet or playing a digital game (*mood modification*)
 6. Gone without eating or sleeping because of the internet (*salience*)
- EIU variable counts answers of “fairly or very often”
 - Adapted from scale used in EU Kids Online project (Smahel, Helsper and Green, 2012)

Outcome variable (age 17/18)



Range	Mean	Standard deviation	Variance	Skewness	Cronbach's alpha
0-6	1.5	1.6	2.6	0.95	0.72

5 or 6 symptoms	
Males	127 (4.4% of all males)
Females	281 (9.2% of all females)

Explanatory variables (age 13)

- **Child and family controls**

- Child gender
- Only child
- Household social class
- Log household income

- **Parent characteristics**

- Single-parent
- Education
- Age
- Employment status
- Depression status

- **Parent-child relationship**

- Closeness
- Conflict

- **Parenting style**

- Demandingness
- Responsiveness
- Autonomy-granting

- **Parental knowledge**

- Monitoring
- Disclosure
- Control

- **Disciplinary techniques**

- Strongly power assertive
- Mildly power assertive
- Non-power assertive

- **Time together and apart**

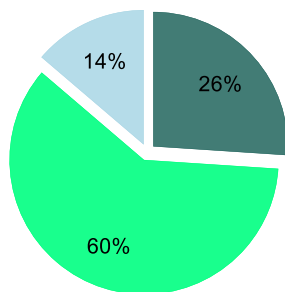
- Games together
- Household activities together
- Outings together
- Home alone

- **Internet-specific mediation**

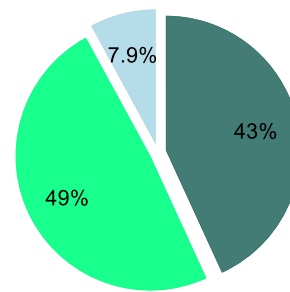
- Supervision
- Filter system

Discipline (age 13)

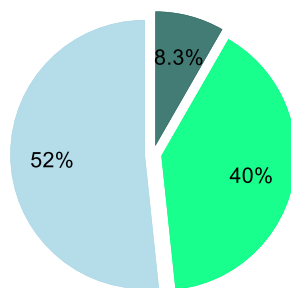
Strong power assertive



Mild power assertive



Non power assertive



Models

1. *What parental influences at 13 years old are associated with more EIU behaviours at 17/18 years old?*
 - **Negative binomial regression:** outcome var = *count of symptoms*
 2. *What parental influences at 13 years old are associated with severe forms of EIU at 17/18 years old?*
 - **Logistic regression:** outcome var =
$$\begin{cases} 1 & \text{if 5 or 6 symptoms} \\ 0 & \text{if 4 or less symptoms} \end{cases}$$
- Models also estimated separately by gender
 - Robustness checks accounting for child psychological factors

Additional explanatory variables (age 13) included in robustness checks

- **Child personality** from the Ten Item Personality Inventory
 - Openness
 - Conscientiousness
 - Extraversion
 - Agreeableness
 - Emotional stability
- **Child emotional and behavioural difficulties** from the Strengths and Difficulties Questionnaire (SDQ)
 - Emotional difficulties
 - Conduct problems
 - Hyperactivity
 - Peer relationship problems
 - Prosocial behaviour

Red = risk factor; green = protective factor;

Statistical significance indicated as * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

RESULTS

Parent (PCG) characteristics and family controls

	Negative binomial (outcome = count of EIU symptoms)			Logistic (outcome = 1 if 5/6 symptoms; =0 if less than 5)		
	All	Male	Female	All	Male	Female
Single parent (ref: two parent)	0.034 (0.078)	0.110 (0.105)	-0.047 (0.108)	0.002 (0.012)	0.032*** (0.012)	-0.035* (0.021)
Age: 40-50 (ref: <40)	0.073 (0.063)	0.106 (0.092)	0.054 (0.094)	0.002 (0.010)	0.009 (0.012)	-0.003 (0.015)
Age: >50 (ref: <40)	0.152* (0.084)	0.257** (0.114)	0.026 (0.122)	-0.016 (0.012)	0.001 (0.017)	-0.036 (0.022)
Edu: Hi-sec (ref: lower-sec)	0.116 (0.087)	0.095 (0.145)	0.176 (0.133)	0.000 (0.013)	0.006 (0.018)	-0.005 (0.021)
Edu: Non-degree (ref: lower-sec)	0.145 (0.090)	0.107 (0.147)	0.237* (0.138)	0.004 (0.013)	0.005 (0.018)	0.006 (0.022)
Edu: College (ref: lower-sec)	0.316*** (0.093)	0.324** (0.144)	0.327** (0.143)	0.010 (0.014)	0.018 (0.017)	0.002 (0.023)
Employed (ref: unemployed)	0.017 (0.052)	-0.022 (0.070)	0.059 (0.075)	-0.006 (0.008)	-0.010 (0.009)	-0.001 (0.012)
Depressed (ref: not depressed)	-0.003 (0.105)	0.097 (0.136)	-0.141 (0.155)	0.002 (0.016)	0.014 (0.016)	-0.010 (0.026)
HH SES: high (ref: low)	0.087 (0.055)	0.122 (0.075)	0.055 (0.083)	0.010 (0.008)	0.018 (0.011)	0.007 (0.013)
Log HH income	0.106** (0.049)	0.182*** (0.069)	0.029 (0.069)	0.002 (0.007)	-0.003 (0.009)	0.006 (0.012)

Parenting patterns (relationship, style, and knowledge)

	Negative binomial (outcome = count of EIU symptoms)			Logistic (outcome = 1 if 5/6 symptoms; =0 if less than 5)		
	All	Male	Female	All	Male	Female
Conflict	0.012*** (0.004)	0.008 (0.005)	0.017*** (0.006)	0.002** (0.001)	0.001 (0.001)	0.002** (0.001)
Closeness	0.005 (0.008)	-0.002 (0.010)	0.016 (0.012)	0.001 (0.001)	-0.001 (0.001)	0.004* (0.002)
Demandingness	-0.012 (0.009)	-0.012 (0.012)	-0.012 (0.014)	0.000 (0.001)	-0.001 (0.002)	0.001 (0.002)
Responsiveness	-0.002 (0.008)	0.010 (0.011)	-0.012 (0.012)	0.002 (0.001)	0.002 (0.002)	0.001 (0.002)
Autonomy-granting	-0.028*** (0.009)	-0.024** (0.011)	-0.032** (0.013)	-0.004*** (0.001)	-0.002* (0.001)	-0.005** (0.002)
Control	0.005 (0.003)	0.004 (0.004)	0.006 (0.005)	0.000 (0.001)	0.001 (0.001)	0.000 (0.001)
Monitoring	-0.001 (0.007)	-0.004 (0.008)	0.000 (0.010)	-0.002* (0.001)	-0.002* (0.001)	-0.002 (0.002)
Child disclosure	0.006 (0.006)	0.000 (0.008)	0.014 (0.009)	0.002** (0.001)	0.002* (0.001)	0.003* (0.002)

Parental disciplinary techniques

	Negative binomial (outcome = count of EIU symptoms)			Logistic (outcome = 1 if 5/6 symptoms; =0 if less than 5)		
	All	Male	Female	All	Male	Female
Strongly power assertive: Sometimes (ref: Never)	0.237*** (0.053)	0.193** (0.078)	0.324*** (0.088)	0.019** (0.008)	0.025** (0.012)	0.022 (0.015)
Strongly power assertive: Always (ref: Never)	0.544*** (0.085)	0.453*** (0.104)	0.636*** (0.120)	0.041*** (0.014)	0.025 (0.016)	0.058*** (0.020)
Mildly power assertive: Sometimes (ref: Never)	0.059 (0.050)	0.044 (0.068)	0.101 (0.073)	0.010 (0.008)	0.003 (0.010)	0.018 (0.013)
Mildly power assertive: Always (ref: Never)	0.169* (0.099)	0.243** (0.112)	0.026 (0.148)	0.031** (0.016)	0.025* (0.014)	0.026 (0.022)
Non-power assertive: Sometimes (ref: Never)	-0.106 (0.088)	-0.239** (0.113)	0.024 (0.127)	-0.036** (0.016)	-0.034** (0.016)	-0.028 (0.019)
Non-power assertive: Always (ref: Never)	-0.012 (0.090)	-0.092 (0.114)	0.072 (0.130)	-0.024 (0.016)	-0.015 (0.015)	-0.022 (0.019)

Time together

	Negative binomial (outcome = count of EIU symptoms)			Logistic (outcome = 1 if 5/6 symptoms; =0 if less than 5)		
	All	Male	Female	All	Male	Female
Home alone (ref: never)	0.131*** (0.047)	0.052 (0.065)	0.216*** (0.070)	0.010 (0.007)	-0.001 (0.009)	0.020* (0.012)
Play games together weekly (ref: less than weekly)	-0.155*** (0.049)	-0.103 (0.067)	-0.199*** (0.073)	-0.007 (0.008)	-0.003 (0.010)	-0.011 (0.012)
Do household activities together weekly (ref: less than weekly)	-0.069 (0.053)	-0.086 (0.066)	-0.053 (0.080)	-0.001 (0.008)	-0.009 (0.009)	0.006 (0.014)
Have outings together weekly (ref: less than weekly)	0.062 (0.049)	0.081 (0.064)	0.038 (0.073)	0.007 (0.008)	0.016 (0.010)	-0.001 (0.012)

Internet-specific mediation

	Negative binomial (outcome = count of EIU symptoms)			Logistic (outcome = 1 if 5/6 symptoms; =0 if less than 5)		
	All	Male	Female	All	Male	Female
Internet supervised: Sometimes (ref: Never)	-0.046 (0.085)	-0.070 (0.119)	-0.009 (0.120)	-0.002 (0.012)	-0.012 (0.014)	0.009 (0.020)
Internet supervised: Sometimes (ref: Never)	0.019 (0.086)	0.015 (0.118)	0.053 (0.122)	0.000 (0.013)	-0.008 (0.014)	0.011 (0.020)
Internet filter (ref: No filter)	0.065 (0.046)	0.113* (0.061)	0.015 (0.068)	0.005 (0.007)	0.007 (0.009)	0.004 (0.012)

DISCUSSION

Policy implications

- **Awareness-raising** among parents: **non-internet-specific parenting interventions** more important than internet-specific parental mediation
 - E.g. UNICEF’s “Parenting is also learned” campaign
- Focus on **reducing parent-child conflict** and encouraging **autonomy-granting parenting** in **family therapy**
- **Provision of alternatives to being home alone** for early adolescents
 - Especially relevant for single-parents and parents with long working hours

Conclusion

- Parents can **potentially modify their own behaviour** to protect against the development of EIU
 - No evidence of associations for internet-specific mediation practices...
 - ...but strong influence of **disciplinary techniques**
 - **Time spent together, parent-child conflict, and autonomy-granting parenting** also influential



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Thank you!

Comments, suggestions, questions welcome

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APPENDIX

Strengths and limitations

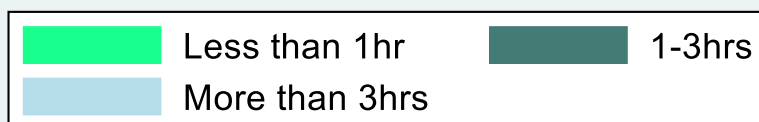
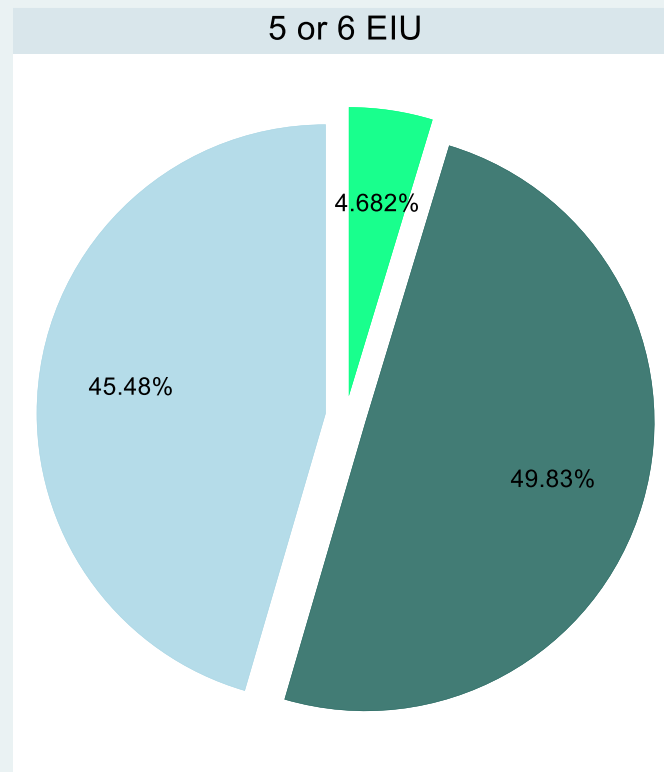
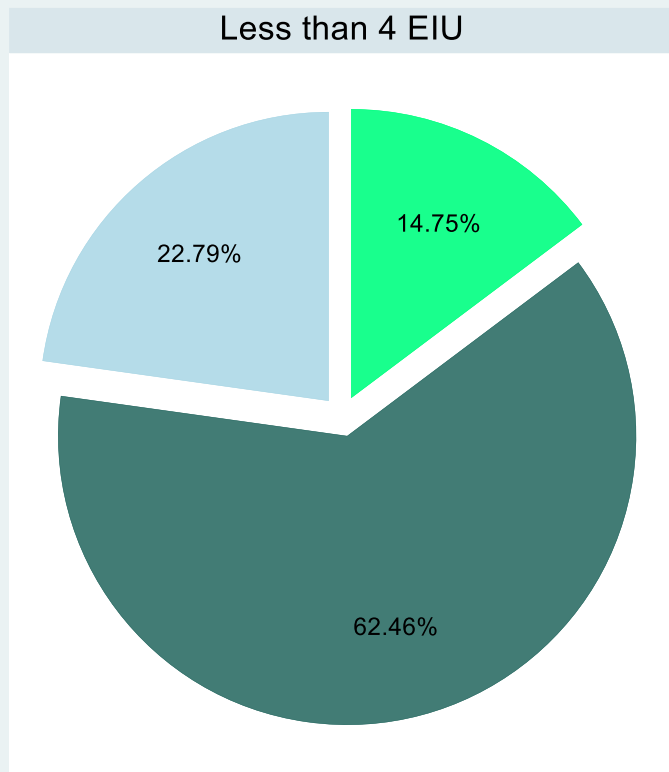
- **Strengths:**

- Simultaneously evaluates and mutually controls for several aspects of parental influence
- Explanatory variables measured at 4-year lag from outcome variable
- GUI: large and representative

- **Limitations:**

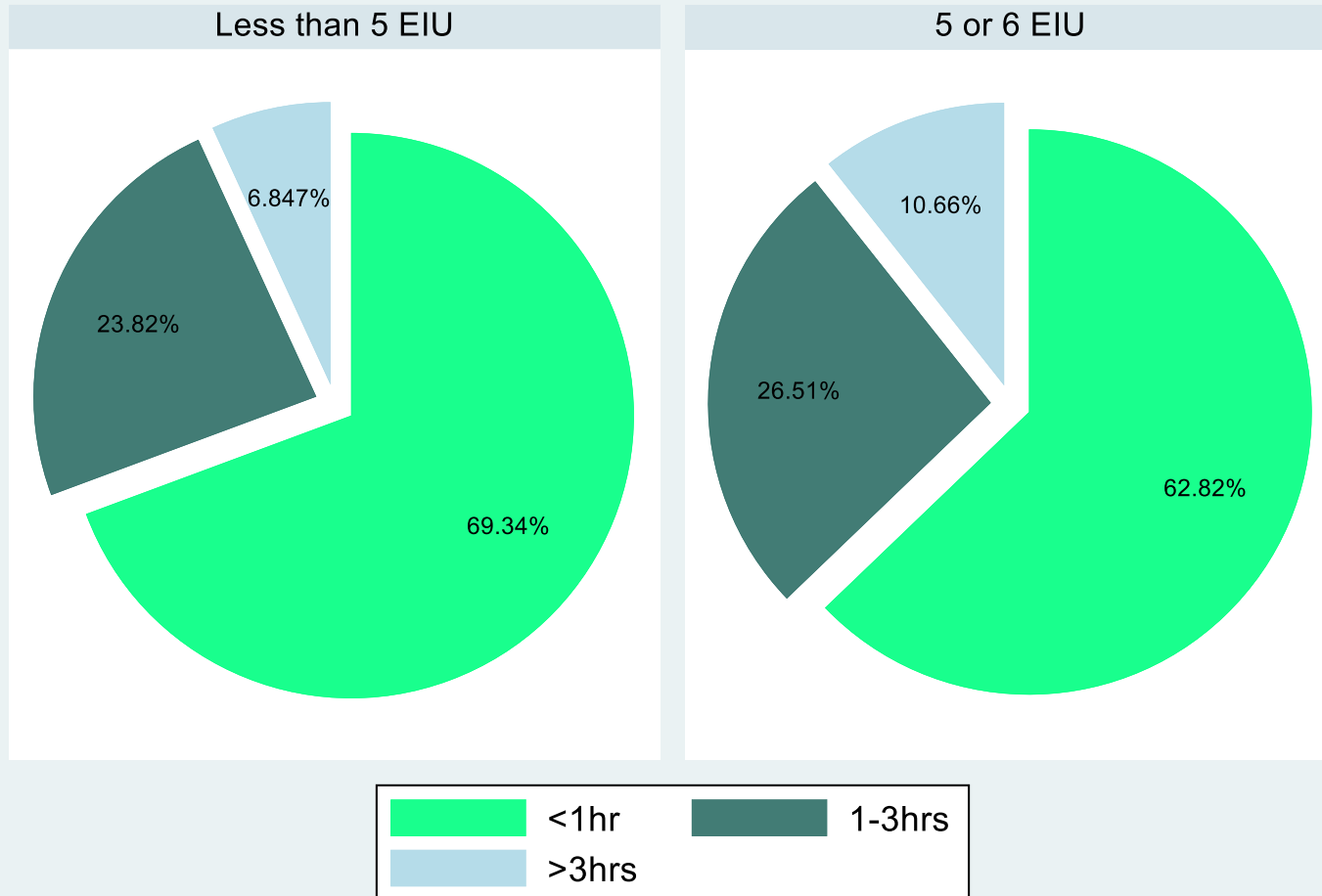
- EIU outcome variable is not clinically validated for discrimination
- Relies on parent and child self-reports

Time online weekday (age 17)



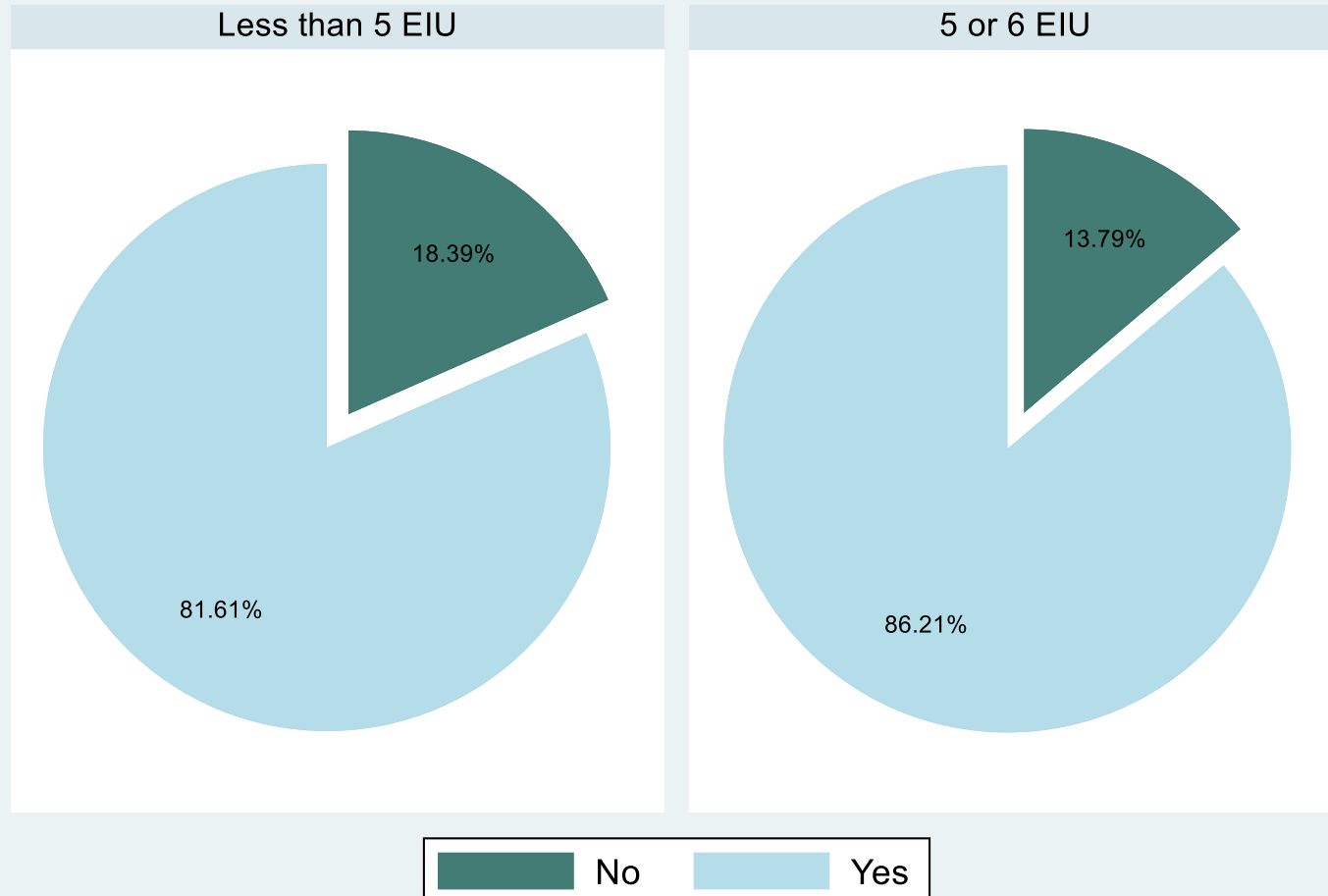
Graphs by ≥ 5 EIU behaviours

Time online weekday (age 13)



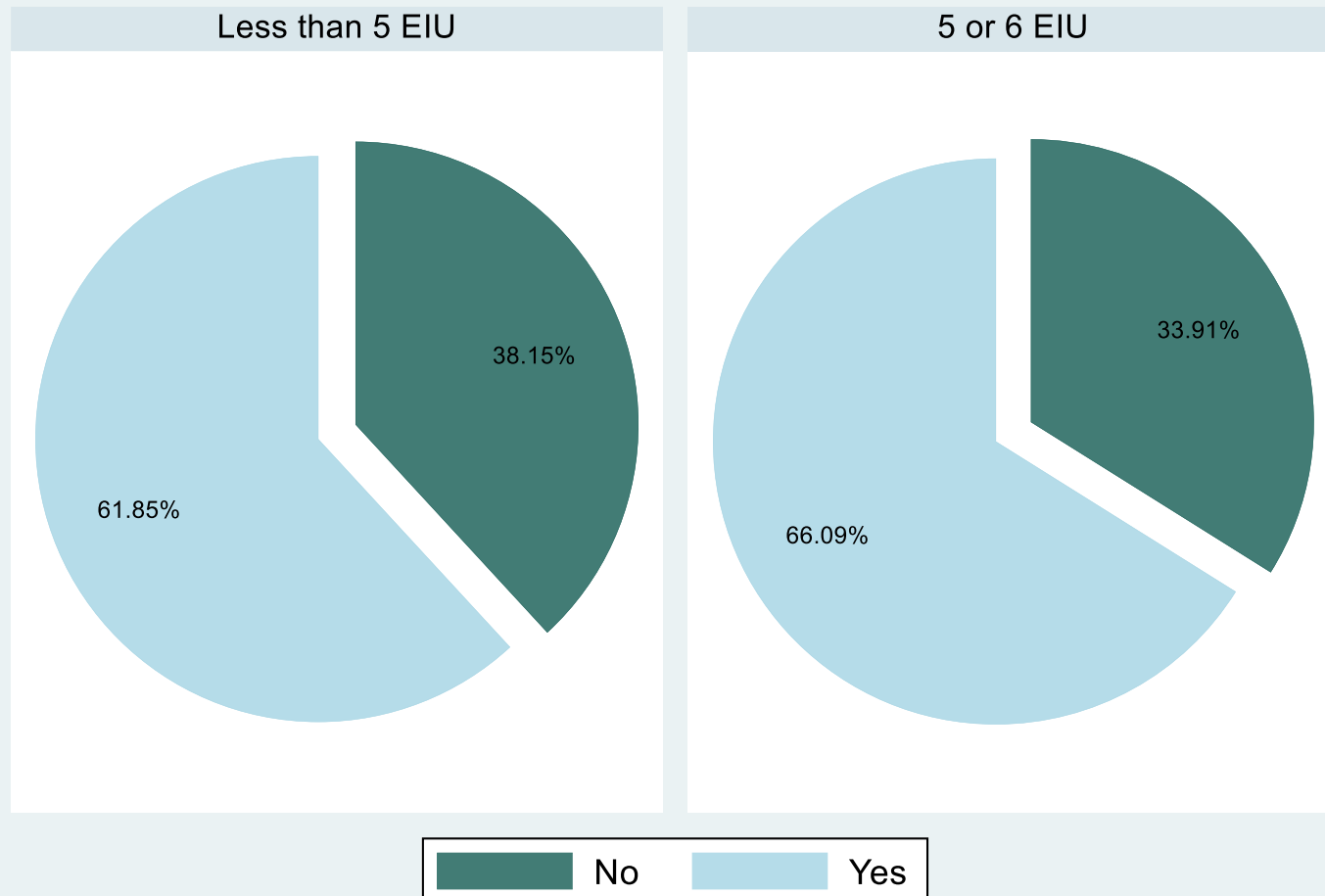
Graphs by ≥ 5 EIU behaviours

Use of internet for social media (age 13)



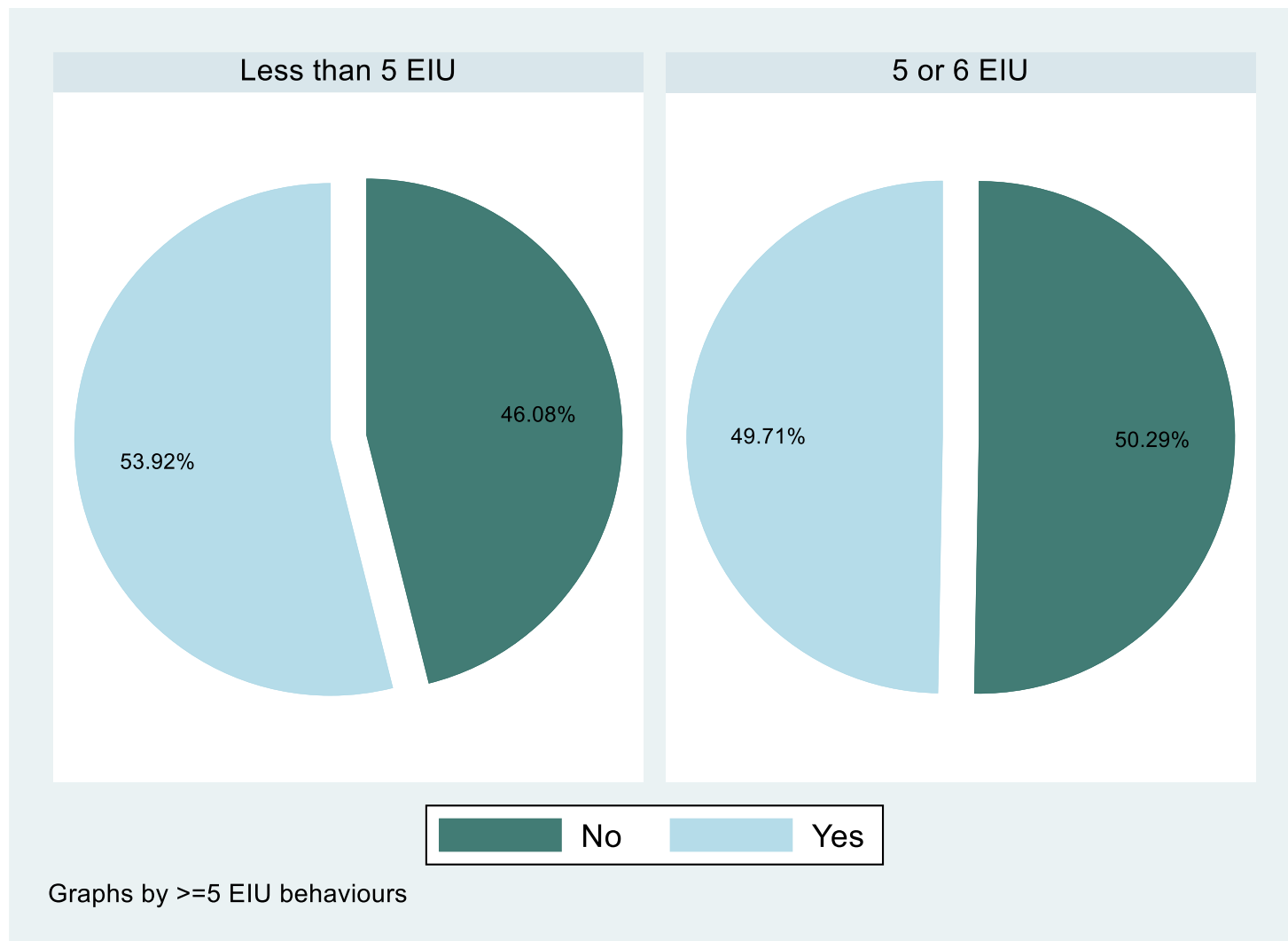
Graphs by ≥ 5 EIU behaviours

Use of internet for movies/music (age 13)

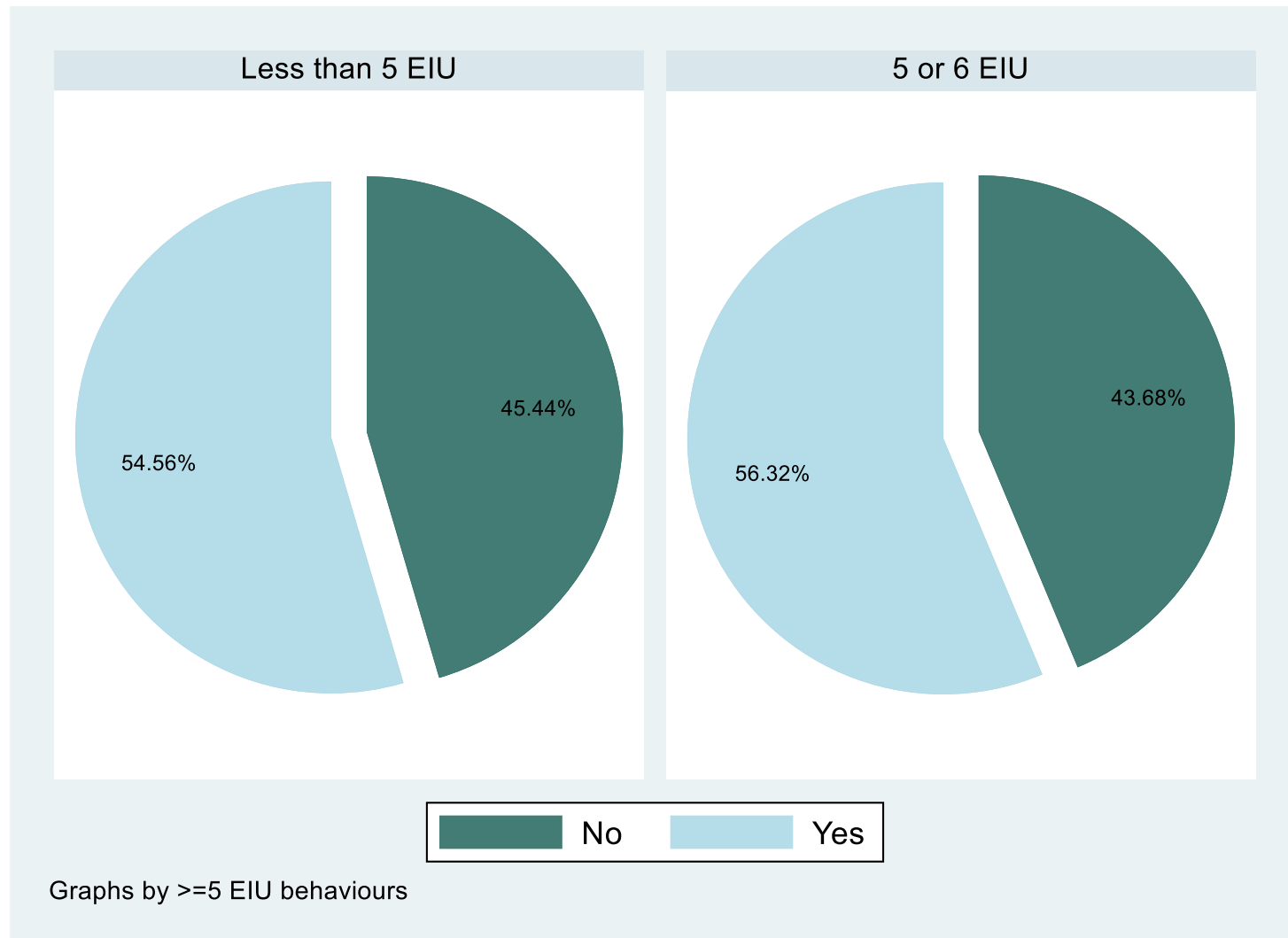


Graphs by ≥ 5 EIU behaviours

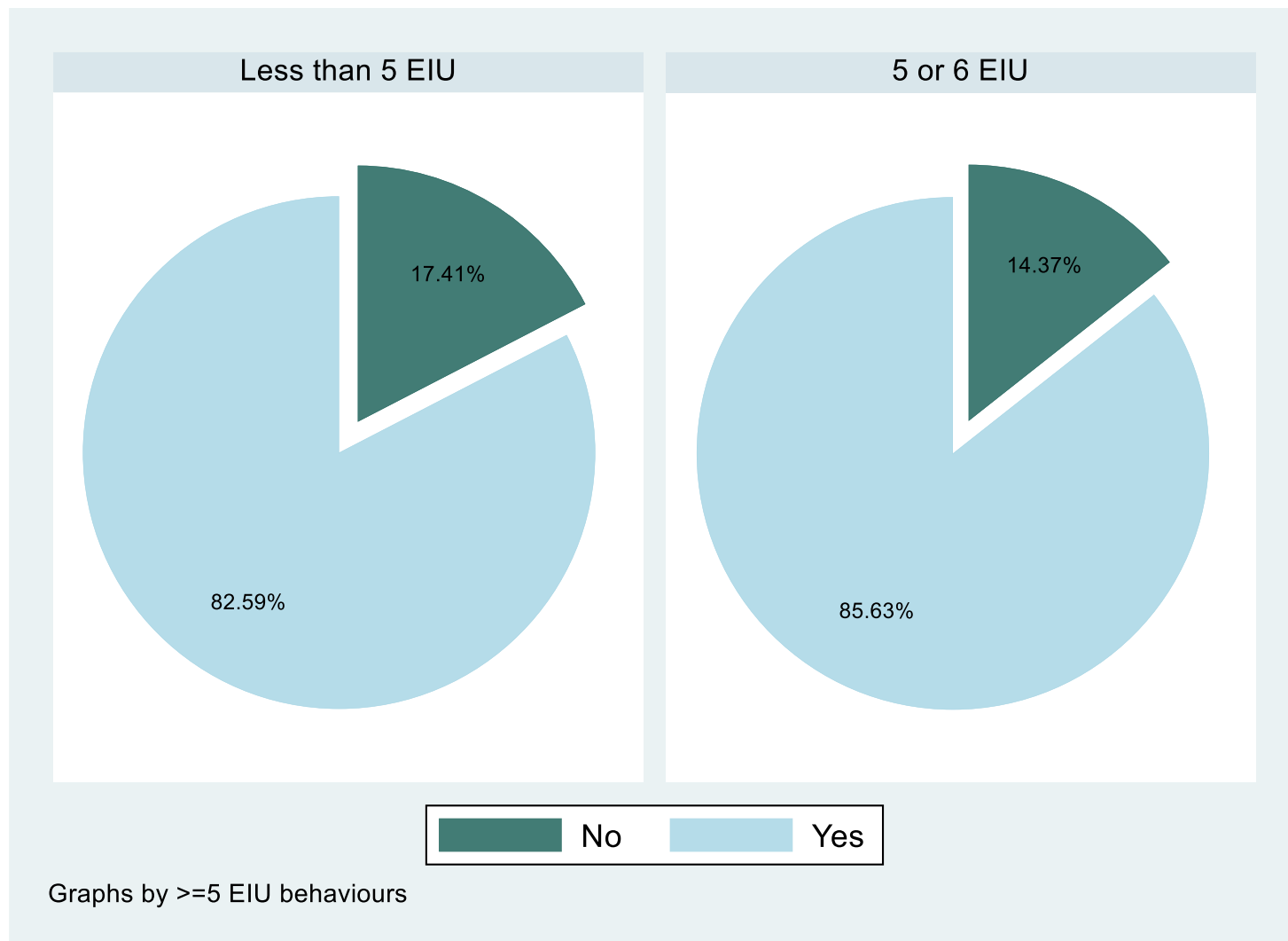
Use of internet for games (age 13)



Use of internet for surfing (age 13)

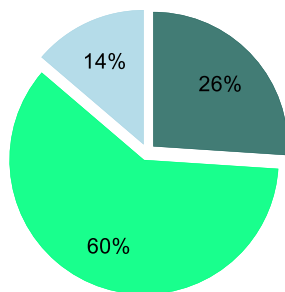


Use of internet for school (age 13)

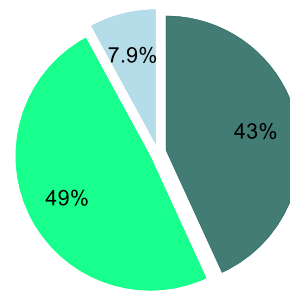


Discipline (age 13)

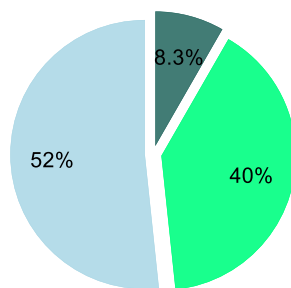
Strong power assertive



Mild power assertive

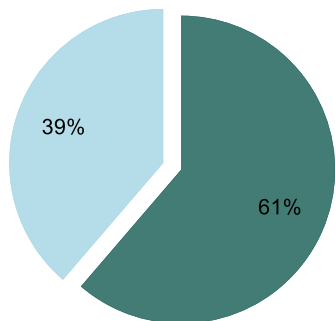


Non power assertive



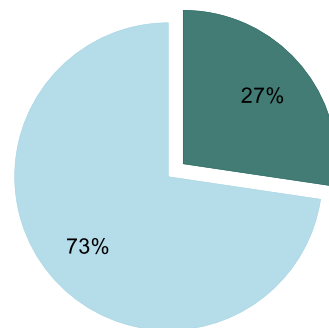
Time together (age 13)

Games together



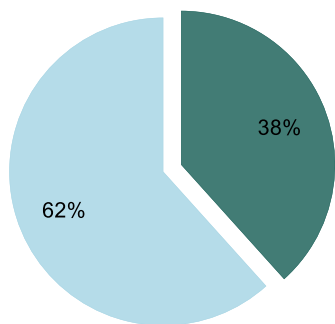
Less than weekly Weekly

Household activities together



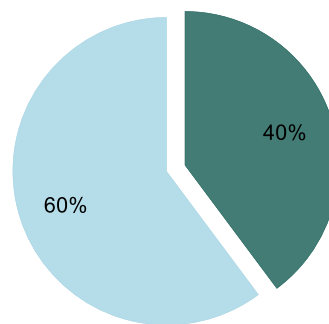
Less than weekly Weekly

Outings together



Less than weekly Weekly

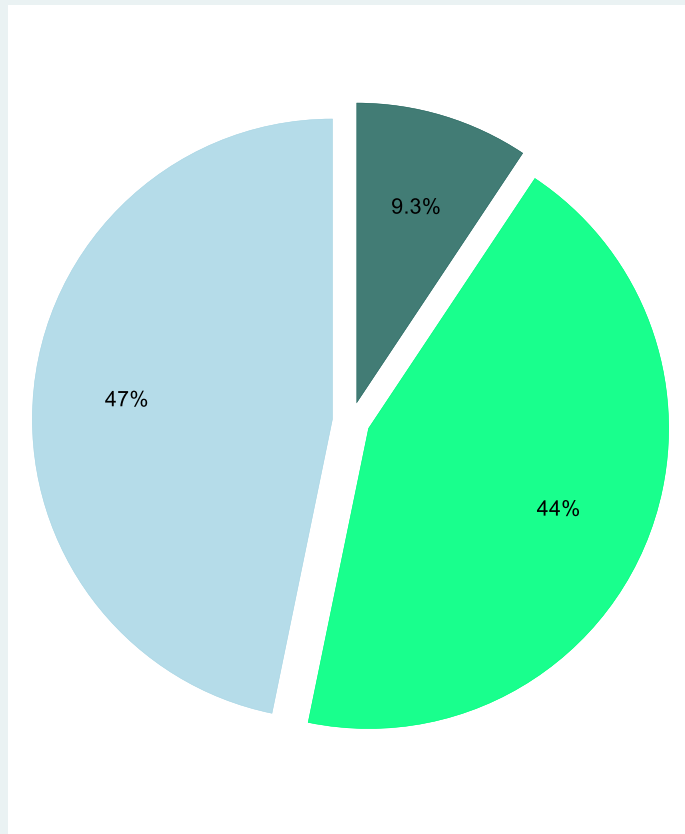
Home alone



Never Sometimes

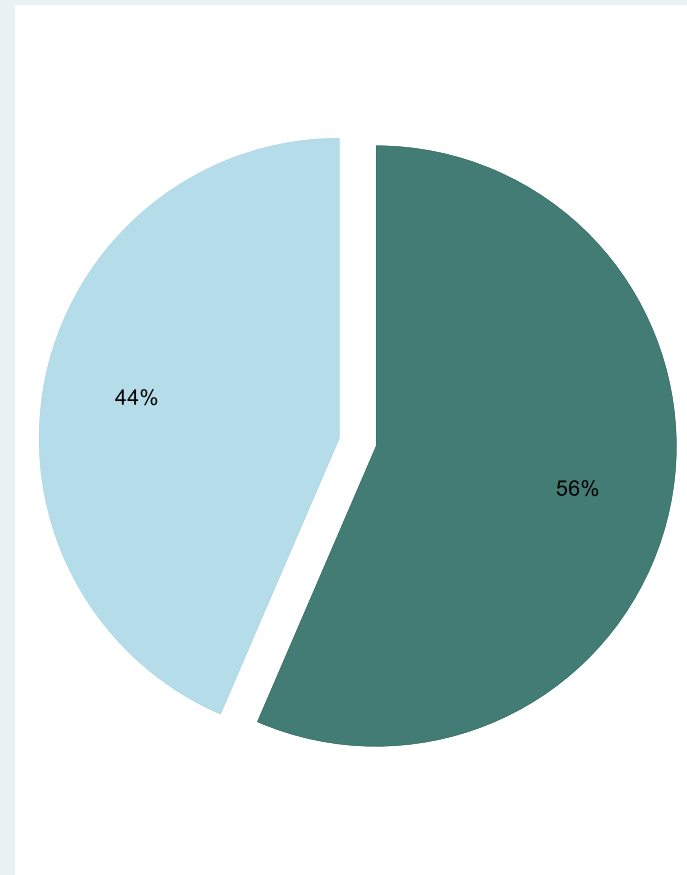
Internet-specific mediation (age 13)

Supervised



Never
 Sometimes
 Always

Internet filter



No filter
 Internet filter

REFERENCES

References (1)

- American Psychiatric Association (2013) *Diagnostic and Statistical Manual of Mental Disorders: DSM-V*. 5th edn.
- Anderson, E. L. *et al.* (2017) 'Internet use and Problematic Internet Use: a systematic review of longitudinal research trends in adolescence and emergent adulthood', *International Journal of Adolescence and Youth*, 22(4), pp. 430–454. doi: 10.1080/02673843.2016.1227716.
- Asyriati, R. (2020) 'Parent Attachment and Adolescent's Problematic Internet Use: A Literature Review', *Advances in Social Science, Education and Humanities Research*, 395, pp. 124–128.
- Beard, K. W. (2011) 'Working with Adolescents Addicted to the Internet', in Young, K. S. and Nabuco de Abreu, C. (eds) *Internet Addiction: A Handbook and Guide to Evaluation and Treatment*. John Wiley & Sons, pp. 173–189.
- Bisen, S. S. and Deshpande, Y. M. (2018) 'Understanding internet addiction: a comprehensive review', *Mental Health Review Journal*, 23(3), pp. 165–184. doi: 10.1108/MHRJ-07-2017-0023.
- Blinka, L. *et al.* (2015) 'Excessive internet use in European adolescents: What determines differences in severity?', *International Journal of Public Health*, 60(2), pp. 249–256. doi: 10.1007/s00038-014-0635-x.
- Blinka, L. *et al.* (2020) 'Social constraints associated with excessive internet use in adolescents: the role of family, school, peers, and neighbourhood', *International Journal of Adolescence and Youth*, 8(65), pp. 1279–1287. doi: 10.1007/s00038-020-01462-8.

References (2)

- Blinka, L., Škařupová, K. and Ólafsson, K. (2015) 'Excessive Internet Use and its association with negative experiences: Quasi-validation of a short scale in 25 European countries', *Computers in Human Behavior*, 53, pp. 118–123. doi: 10.1016/j.chb.2015.06.047.
- Borca, G. *et al.* (2015) 'Internet use and developmental tasks: Adolescents' point of view', *Computers in Human Behavior*, 52, pp. 49–58. doi: 10.1016/j.chb.2015.05.029.
- Bosmans, G. *et al.* (2011) 'Parents' power assertive discipline and internalizing problems in adolescents: The role of attachment', *Parenting: Science and Practice*, 11(1), pp. 34–55. doi: 10.1080/15295192.2011.539507.
- Bradford, K., Vaughn, L. B. and Barber, B. K. (2008) 'When There Is Conflict: Interparental Conflict, Parent–Child Conflict, and Youth Problem Behaviors', *Journal of Family Issues*, 29(6), pp. 780–805. doi: 10.1177/0192513x07308043.
- Brand, M. *et al.* (2014) 'Internet addiction : coping styles, expectancies, and treatment implications', *Frontiers in Psychology*, 5(November), pp. 1–14. doi: 10.3389/fpsyg.2014.01256.
- Briggs, R., Kenny, D. C. A. M. O. H. R. A. and Kennelly, S. P. (2018) 'Validation of the 8-item Centre for Epidemiological Studies Depression Scale in a cohort of community-dwelling older people: data from The Irish Longitudinal Study on Ageing (TILDA)', *European Geriatric Medicine*, 9(1), pp. 121–126. doi: 10.1007/s41999-017-0016-0.
- Caplan, S. E. (2003) 'Preference for Online Social Interaction: A Theory of Problematic Internet Use and Psychosocial Well-Being', *Communication Research*, 30(6), pp. 625–648. doi: 10.1177/0093650203257842.

References (3)

- Charlton, J. P. and Danforth, I. D. W. (2007) 'Distinguishing addiction and high engagement in the context of online game playing', *Computers in Human Behavior*, 23, pp. 1531–1548. doi: 10.1016/j.chb.2005.07.002.
- Dahl, D. and Bergmark, K. H. (2020) 'Persistence in Problematic Internet Use — A Systematic Review and Meta-Analysis', *Frontiers in Sociology*, 5(May), pp. 1–13. doi: 10.3389/fsoc.2020.00030.
- Darling, N. and Toyokawa, T. (1997) *Construction and Validation of the Parenting Style Inventory II (PSI-II)*. doi: 10.13140/RG.2.2.22528.87048.
- Davis, R. A. (2001) 'A cognitive-behavioral model of pathological Internet use', *Computers in Human Behavior*, 17, pp. 187–195.
- Denton, R. E. and Kampfe, C. M. (1994) 'The relationship between family variables and adolescent substance abuse : A literature review', *Adolescence*, 29(114), pp. 475–495.
- Van Deursen, A. J. and Helsper, E. J. (2018) 'Collateral benefits of Internet use: Explaining the diverse outcomes of engaging with the Internet', *New Media and Society*, 20(7), pp. 2333–2351. doi: 10.1177/1461444817715282.
- Ding, Q. *et al.* (2017) 'Perceived parental monitoring and adolescent internet addiction: A moderated mediation model', *Addictive Behaviors*, 74, pp. 48–54. doi: 10.1016/j.addbeh.2017.05.033.
- Douglas, A. C. *et al.* (2008) 'Internet addiction: Meta-synthesis of qualitative research for the decade 1996-2006', *Computers in Human Behavior*, 24(6), pp. 3027–3044. doi: 10.1016/j.chb.2008.05.009.

References (4)

- Durkee, T. *et al.* (2012) 'Prevalence of pathological internet use among adolescents in Europe: demographic and social factors', *Addiction*, 107(12), pp. 2210–2222. doi: 10.1111/j.1360-0443.2012.03946.x.
- Van Den Eijnden, R. J. J. M. *et al.* (2010) 'Compulsive internet use among adolescents: Bidirectional parent-child relationships', *Journal of Abnormal Child Psychology*, 38(1), pp. 77–89. doi: 10.1007/s10802-009-9347-8.
- Faltýnkova, A. *et al.* (2020) 'The Associations between Family-Related Factors and Excessive Internet Use in Adolescents', *International Journal of Environmental Research and Public Health*, 17(5), p. 1754. doi: 10.3390/ijerph17051754.
- Faltýnková, A. *et al.* (2020) 'The associations between family-related factors and excessive internet use in adolescents', *International Journal of Environmental Research and Public Health*, 17(5). doi: 10.3390/ijerph17051754.
- Fumero, A. *et al.* (2018) 'Personal and social factors involved in internet addiction among adolescents : A meta-analysis', *Computers in Human Behavior*, 86, pp. 387–400. doi: 10.1016/j.chb.2018.05.005.
- Ginsburg, K. R. *et al.* (2007) 'The importance of play in promoting healthy child development and maintaining strong parent-child bonds', *Pediatrics*, 119(1), pp. 182–191. doi: 10.1542/peds.2006-2697.
- Gouveia, M. J., Canavarro, M. C. and Moreira, H. (2019) 'How can mindful parenting be related to emotional eating and overeating in childhood and adolescence? The mediating role of parenting stress and parental child-feeding practices', *Appetite*, 138(March), pp. 102–114. doi: 10.1016/j.appet.2019.03.021.

References (5)

- Griffiths, M. (2000) 'Internet Addiction - time to be taken seriously?', *Addiction Research*, 8(5), pp. 413–418. doi: <https://doi.org/10.3109/16066350009005587>.
- Griffiths, M. (2005) 'A “components” model of addiction within a biopsychosocial framework', *Journal of Substance Use*, 10(4), pp. 191–197. doi: 10.1080/14659890500114359.
- Gu, M. and Kwok, Y. C. L. (2020) 'A Longitudinal Study of Power-Assertive Discipline , Inductive Discipline and Preschoolers' Anxiety: Preschoolers' Forgiveness as a Moderator', *Child Indicators Research*, 12, pp. 85–103. doi: 10.1007/s12187-019-09654-2.
- Heo, J. *et al.* (2014) 'Addictive internet use among Korean adolescents: A national survey', *PLoS ONE*, 9(2), pp. 1–8. doi: 10.1371/journal.pone.0087819.
- Hökby, S. *et al.* (2016) 'Are mental health effects of internet use attributable to the web-based content or perceived consequences of usage? A longitudinal study of european adolescents', *JMIR Mental Health*, 3(3), pp. 1–14. doi: 10.2196/mental.5925.
- HSE (2019) *Causes of addiction and how it can affect you*.
- Huang, S. *et al.* (2021) 'Parent-children relationship and internet addiction of adolescents: The mediating role of self-concept', *Current Psychology*, 40, pp. 2510–2517. doi: 10.1007/s12144-019-00199-9.
- Ioannidis, K. *et al.* (2019) 'Cognitive deficits in problematic internet use: meta-analysis of 40 studies', *British Journal of Psychiatry*, 215(5), pp. 639–646. doi: 10.1192/bjp.2019.3.

References (6)

- Jessor, R. (1991) 'Risk behavior in adolescence: A psychosocial framework for understanding and action', *Journal of Adolescent Health*, 12(8), pp. 597–605. doi: 10.1016/1054-139X(91)90007-K.
- Kardefelt-Winther, D. (2014) 'A conceptual and methodological critique of internet addiction research: Towards a model of compensatory internet use', *Computers in Human Behavior*, 31, pp. 351–354. doi: 10.1016/j.chb.2013.10.059.
- Kayis, A. R. *et al.* (2016) 'Big five-personality trait and internet addiction: A meta-analytic review', *Computers in Human Behavior*, 63, pp. 35–40. doi: 10.1016/j.chb.2016.05.012.
- Kerr, M. and Stattin, H. (2000) 'What Parents Know , How They Know It , and Several Forms of Adolescent Adjustment: Further Support for a Reinterpretation of Monitoring', *Developmental Psychology*, 36(3), pp. 366–380. doi: 10.1037//0012-1649.36.3.366.
- Koh, Y.-S. (2015) 'The Korean National Policy for Internet Addiction', in Reuter, M. and Montag, C. (eds) *Internet Addiction: Neuroscientific Approaches and Therapeutical Interventions*. Springer, pp. 219–233.
- Kraut, R. *et al.* (1998) 'Internet paradox: A social technology that reduces social involvement and psychological well-being?', *American Psychologist*, 53(9), pp. 1017–1031. doi: 10.1037/0003-066X.53.9.1017.
- Krevans, J. and Gibbs, J. C. (1996) 'Parents' Use of Inductive Discipline: Relations to Children's Empathy and Prosocial Behavior', *Child Development*, 67(6), pp. 3263–3277.
- Kuss, D. J. and Lopez-Fernandez, O. (2016) 'Internet addiction and problematic Internet use: A systematic review of clinical research', *World Journal of Psychiatry*, 6(1), pp. 143–176. doi: 10.5498/wjp.v6.i1.143.

References (7)

- Kuss, D. J. and Lopez-Fernandez, O. (2019) *Harmful internet use: internet addiction and problematic use*.
- Kwon, J.-H. (2012) 'Toward the Prevention of Adolescent Internet Addiction', in Young, K. S. and Nabuco de Abreu, C. (eds) *Internet Addiction: A Handbook and Guide to Evaluation and Treatment*. John Wiley & Sons Inc., pp. 223–243. doi: 10.1002/9781118013991.ch13.
- Lam, L. T. (2015) 'Parental mental health and Internet Addiction in adolescents', *Addictive Behaviors*, 42, pp. 20–23. doi: 10.1016/j.addbeh.2014.10.033.
- Lam, L. T. (2017) 'Parental mental health and internet addiction in adolescents', in Nabuco de Abreu, C. and Young, K. S. (eds) *Internet Addiction in Children and Adolescents: Risk Factors, Assessment, and Treatment*, pp. 123–140. doi: 10.1891/9780826133731.0007.
- Larose, R. *et al.* (2009) 'Unregulated Internet Usage: Addiction , Habit, or Deficient Self-Regulation?', *Media Psychology*, 5(3), pp. 225–253. doi: 10.1207/S1532785XMEP0503.
- De Leo, J. A. and Wulfert, E. (2013) 'Problematic Internet Use and Other Risky Behaviors in College Students: An Application of Problem-Behavior Theory', *Psychology of Addictive Behaviors*, 27(1), pp. 133–141. doi: 10.1037/a0030823.
- Li, C. *et al.* (2014) 'Internet addiction among Chinese adolescents : The effect of parental behavior and self-control', *Computers in Human Behavior*, 41, pp. 1–7. doi: 10.1016/j.chb.2014.09.001.

References (8)

- Li, S., Lei, H. and Tian, L. (2018) 'A meta-analysis of the relationship between parenting style and Internet addiction among mainland Chinese teenagers', *Social Behavior and Personality*, 46(9), pp. 1475–1488. doi: 10.2224/sbp.7631.
- Li, X. *et al.* (2021) 'The Relationship between Family Functioning and Pathological Internet Use among Chinese Adolescents: The Mediating Role of Hope and the Moderating Role of Social Withdrawal', *International Journal of Environmental Research and Public Health*, 18(14), p. 7700. doi: 10.3390/ijerph18147700.
- Livingstone, S. and Ólafsson, K. (2018) *When do parents think their child is ready to use the internet independently?*
- Lo, C. K. M. *et al.* (2021) 'Association of harsh parenting and maltreatment with internet addiction, and the mediating role of bullying and social support', *Child Abuse & Neglect*, 113(January), p. 104928. doi: 10.1016/j.chiabu.2021.104928.
- Lobe, B. *et al.* (2011) *Cross-national comparison of risks and safety on the internet: Initial analysis from the EU Kids Online survey of European children, EU Kids Online*. Available at: <https://doi.org/10.1080/03085694.2017.1312114>.
- Mikuška, J. *et al.* (2020) 'Social relational factors of excessive internet use in four European countries', *International Journal of Public Health*, 65(8), pp. 1289–1297. doi: 10.1007/s00038-020-01484-2.
- Millar, S. and Quaglio, G. (2020) *Potentially negative effects of internet use*.

References (9)

- Montag, C. *et al.* (2015) 'Is it meaningful to distinguish between generalized and specific Internet addiction? Evidence from a cross-cultural study from Germany, Sweden, Taiwan and China', *Asia-Pacific Psychiatry*, 7(1), pp. 20–26. doi: 10.1111/appy.12122.
- Murphy, D. *et al.* (2019) *Design, Instrumentation and Procedures for Cohort '98 at 17/18 years of age*.
- NHS (2019) *Children treated for computer gaming addiction under NHS Long Term Plan, News*.
- Nielsen, P. *et al.* (2019) 'Linking parental mediation practices to adolescents' problematic online screen use: A systematic literature review', *Journal of Behavioral Addictions*, 8(4), pp. 649–663. doi: 10.1556/2006.8.2019.61.
- OECD (2018) *Children & Young People's Mental Health in the Digital Age*.
- Pianta, R. C. (1992) *Child-parent relationship scale*.
- Salmela-Aro, K. *et al.* (2017) 'The Dark Side of Internet Use: Two Longitudinal Studies of Excessive Internet Use, Depressive Symptoms, School Burnout and Engagement Among Finnish Early and Late Adolescents', *Journal of Youth and Adolescence*, 46(2), pp. 343–357. doi: 10.1007/s10964-016-0494-2.
- Sela, Y. *et al.* (2020) 'Family environment and problematic internet use among adolescents: The mediating roles of depression and Fear of Missing Out', *Computers in Human Behavior*, 106, p. 106226. doi: 10.1016/j.chb.2019.106226.
- Shek, D. T. L., Zhu, X. and Dou, D. (2019) 'Influence of family processes on internet addiction among late adolescents in Hong Kong', *Frontiers in Psychiatry*, 10(MAR), pp. 1–17. doi: 10.3389/fpsy.2019.00113.

References (10)

- Smahel, D., Helsper, E. and Green, L. (2012) *Excessive internet use among European children*. London, UK.
- Straus, M. A. and Fauchier, A. (2007) *Manual for the Dimensions of Discipline Inventory (DDI)*, *Journal of Psychopathology and Behavioral Assessment*. doi: 10.1037/t37478-000.
- Sun, Y. and Wilkinson, J. S. (2020) 'Parenting Style, Personality Traits, and Interpersonal Relationships: A Model of Prediction of Internet Addiction', *International Journal of Communication*, 14, pp. 2163–2185.
- UNICEF (2017) *Children in a Digital World, The State of the World's Children*.
- Wang, W. *et al.* (2018) 'Parent-adolescent relationship and adolescent internet addiction: A moderated mediation model', *Addictive Behaviors*, 84, pp. 171–177. doi: 10.1016/j.addbeh.2018.04.015.
- Weinstein, A. and Lejoyeux, M. (2010) 'Internet addiction or excessive internet use', *American Journal of Drug and Alcohol Abuse*, 36(5), pp. 277–283. doi: 10.3109/00952990.2010.491880.
- WHO (2015) *Public Health Implications of Excessive Use of the Internet, Computers, Smartphones and Similar Electronic Devices, Meeting report*.
- WHO (2018) *International Classification of Diseases 11th Revision*.
- Worthman, C. M., Tomlinson, M. and Rotheram-Borus, M. J. (2017) 'When can parents most influence their child's development? Expert knowledge and perceived local realities', *Social Science & Medicine*, 154, pp. 62–69. doi: 10.1016/j.socscimed.2016.02.040.

References (11)

- Wu, C. S. T. *et al.* (2016) 'Parenting approaches, family functionality, and internet addiction among Hong Kong adolescents', *BMC Pediatrics*, 16(1), pp. 1–10. doi: 10.1186/s12887-016-0666-y.
- Yen, J. Y. *et al.* (2007) 'The Comorbid Psychiatric Symptoms of Internet Addiction: Attention Deficit and Hyperactivity Disorder (ADHD), Depression, Social Phobia, and Hostility', *Journal of Adolescent Health*, 41(1), pp. 93–98. doi: 10.1016/j.jadohealth.2007.02.002.
- Yu, L. and Shek, D. T. L. (2013) 'Internet addiction in Hong Kong adolescents: A three-year longitudinal study', *Journal of Pediatric and Adolescent Gynecology*, 26(3), pp. 10–17. doi: 10.1016/j.jpbg.2013.03.010.
- Zakeri, H. and Karimpour, M. (2011) 'Parenting styles and self-esteem', *Procedia - Social and Behavioral Sciences*, 29, pp. 758–761. doi: 10.1016/j.sbspro.2011.11.302.
- Zhang, R. *et al.* (2019) 'Parenting styles and internet addiction in Chinese adolescents: Conscientiousness as a mediator and teacher support as a moderator', *Computers in Human Behavior*, 101(July), pp. 144–150. doi: 10.1016/j.chb.2019.07.019.