EARLY EXPOSURE TO SOCIAL NETWORKING SERVICE INCREASE CHILDREN’S DRIVE FOR THINNESS

Noriko Sugimoto, MD1, Atsushi Nishida, PhD2, Rie Toriyama, MA3, Shinsuke Koike, MD, PhD4, Yuko Morimoto, PhD5, Sho Kanata, MD3, Shinya Fujikawa, MD6, Mio Masaoka, MA7, Satoshi Usami, PhD7

1Department of Neuropsychiatry, University of Tokyo; 2Tokyo Metropolitan Institute of Medical Science; 3University of Tokyo; 4MRC Unit for Lifelong Health and Ageing at UCL; 5The Graduate University for Advanced Studies; 6University of Tokyo; 7University of Tsukuba

Purpose: Eating disorders (ED) are mostly emerged predominantly during adolescence, and well known to cause severe and persistent impairment in both physical and psychological health. Drive for thinness (DT) is one of the risk factors for ED. It is already known that media exposure such as television have great effect on DT. Recently, internet use has been widely spread as a new type of media and developing the primary source for youth and said to have effect on their psychopathology. Especially, social networking service (SNS) is said to be associated with DT among adolescent girls. However, there is no study which investigated the association between internet use and DT for children. Thus, the aims of this study are to investigate the associations between internet use and DT, using representative population-based samples of 10-year-old children.

Methods: We conducted a prospective study that the psychopathologies and lifestyles of children through adolescence in Tokyo, Japan. Total 3,065 children (mean age= 9.73±0.45 years) and one of their care givers (mainly mothers) were participated in this study. Data were collected by interviews and self-report questionnaires. DT was asked to children by the question ‘Do you want to be slimmer than now?’ using 4-point scale. Also children answered for internet use by total frequency (5-point scale) and purposes (doing homework, sending messages with friends and social networking service (SNS)). To investigate the associations between DT and internet use, we employed logistic regression models using DT as dependent variable and frequency and all purposes of internet use as independent variables, adjusting for potential confounding variables such as children’s Body Mass Index (BMI) and television (TV) viewing hours.

Results: DT was recognized by 304 (21.3%) girls and 267(16.3%) boys. As for frequency of internet use, there were no association with DT in each sex (p >0.05). In terms of each purpose, only the experience of SNS use was significantly associated with DT in girls (OR= 2.06, 95% CI : 1.17-3.61) This finding appeared robust after adjusting for BMI, TV viewing and other purposes of internet use namely doing homework and sending messages (OR= 2.38, 95% CI : 1.27-4.40) . On the other hand, there were no association between internet use and DT among boys (OR= 0.77, 95% CI: 0.36-1.64) even adjusted by confounding variables (OR= 0.67, 95% CI: 0.34-1.32).

Conclusions: The effect of internet use on DT was significant by the experience of using SNS and was not by total frequency nor other purposes among representative community sample of girls. This suggests that early exposure to SNS might increase DT and promote the risk for eating disorders especially in girls. Thus, much earlier, such as at elementary school educational intervention and media literacy for youth may be useful to promote the prevention for increasing DT and further risk of ED.

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Purpose: Excessive screen time has been associated with overweight among adolescents, yet few longitudinal studies have looked at the causality of this association. The purpose of this research was to determine whether excessive Internet use also predicted overweight two years later in a cohort of adolescents in Switzerland.

Methods: Data were drawn from the ado@internet.ch, a longitudinal study of youths from age 14 (T0) to age 16 (T1). Participants were divided into overweight (N=99) and non-overweight control (N=522) groups according to self-reported height and weight at T1. Groups were compared on socio-demographic, academic and Internet use related variables. All variables significant (p<.05) at the bivariate level were included in a logistic regression. Results are given as adjusted Odds Ratio (aOR) with 95% confidence interval. STATA/IC13.1 was used for all computations.

Results: At the bivariate level, overweight participants at T1 were significantly more likely to reside in a city (61.8% vs. 44.9%), to be in the lowest academic track (45.6% vs. 26.0%) and to be overweight (47.7% vs. 4.2%) or on a diet (23.7% vs. 9.1%) at T0. No differences were found for age, gender, nationality, emotional wellbeing, family structure, socioeconomic status, physical activity, sports activity, excessive Internet use, mean time on the Internet on schooldays, using the Internet mainly for leisure activities or number of devices at disposal to connect to the Internet. In the multivariate analysis, only being overweight at T0 remained significant (aOR: 18.3 [7.6:43.6]) after controlling for all other variables.

Conclusions: Our results indicate that excessive Internet use does not predict overweight two years later among adolescents but that those who are already overweight have very high chances to continue being so. This implies that the association between being overweight and excessive Internet use needs to be seen from a different perspective. We could hypothesize that this result, differing from what is known about the more general concept of screen use, implies that using the Internet, maybe through different devices, represents an activity clearly separated from simple screen watching such as TV. Contrarily from TV watching which implies being a passive spectator, many activities on the Internet require a more active participation, maybe preventing or limiting simultaneous consumption of drinks or food. Thus, future research should separate different types of media use as each one might have its particularities and its specific health consequences. Moreover, the reasons why these youths prefer surfing the net than doing other activities need to be studied.

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PRO-EATING DISORDER (PRO-ED) SOCIAL INTERACTION ON TWITTER
A. Alina Arseniev, BA¹, Laura Hooper, RD², Hedwig Lee, PhD¹, Tyler McCormick, PhD¹, Megan Moreno, MD, MPH³
¹University of Washington; ²Seattle Children's Hospital; ³Seattle Children's Research Institute

Purpose: Pro-Eating Disorder (ED) movements include pro-Ana (anorexia) and pro-Mia (bulimia); these decentralized online movements aim to support those with EDs to attain and maintain extreme weight loss. Twitter is a popular social media site, especially among young adults, but has not yet been investigated for pro-ED. The social structure of Twitter may allow pro-ED Twitter profiles (Handles) to express their ED identity and connect with other Handles by “Following” them. Following implies subscribing to another’s Tweets (expressions of 140 characters or less). This study investigated if Twitter is a social space for pro-ED Handles to express an ED identity though Tweets and if their Followers on Twitter also have ED-related references in their own profiles.

Methods: A purposeful sample of 45 public Handles was selected from Twitter based on inclusion criteria: use of “pro-Ana” in a Tweet and self-identification as pro-ED. These Handles’ profile information, Tweets and Followers’ profile information were collected for content analysis. Data was collected using the Twitter Applied Programming Interface and TwitterR, a package for the statistical program R. For each pro-ED Handle, variables of interest were (1) proportion of ED-related Tweets and (2) proportion of Followers with ED-related references in their profile information. A codebook for ED references in Tweets was developed with consultation from a dietitian with expertise in adolescent ED. Using R, Tweets were automatically coded as ED Tweets if they included at least one ED keyword in the codebook. This codebook was adapted to code for ED references in Followers’ profile information. Followers were hand coded given the prevalence of unique spelling of keywords. Analysis also included descriptive statistics and multivariate linear regression.

Results: Among the 45 pro-ED Handles, 29% (N=13) displayed age, with a median of 17 years (SD=2.7). ED references were present on a median of 36% of pro-ED Handles’ Tweets. Pro-ED Handles had a median of 173 Followers. A median of 44% of Followers had ED references. Along with days since pro-ED Handle was created, proportion of ED Tweets was moderately correlated (R²=.29, p<.001) with proportion of Followers with ED references. Pro-ED Handles with a higher proportion of Tweets with ED references tended to have a higher proportion of ED Followers (p<.01).

Conclusions: Findings suggest that Handles who self-identify as pro-ED also commonly express disordered eating through Tweets and have an audience of Followers who subscribe to their Tweets. These Followers often also explicitly reference ED in their own profile information. Results further suggest that pro-ED Handles whose expressions are more saturated with ED Tweets tend to have an audience more saturated with Followers who reference EDs. ED social expression and connection on Twitter may be a source of support for these Twitter users. However, in the context of pro-ED this activity might also cultivate an underlying ED identity. This warrants clinical concern given that separation from this identity is critical to recovery. Public ED display also offers novel opportunities to identify and gain insight into disordered eating, which is invaluable given the covert nature of this
USE OF SOCIAL MEDIA FOR RESEARCH RECRUITMENT WITH ADOLESCENT MOTHERS
Mimia Cynthia Logsdon, PhD1, Jeff Rushton, MBA1, John Myers, PhD1, Jennifer Gregg, PhD1, Gary Bennett, PhD2
1University of Louisville; 2Duke University

Purpose: Use of social media is ubiquitous in adolescents. Commercial companies have capitalized on this trend, and Google and Facebook ads are powerful tools in advertising products to adolescents. However, the effectiveness of commercial social media ads for research recruitment is unclear and understudied. The purpose of our study was to measure the extent to which a social media ad campaign was effective as a research recruitment strategy with adolescent mothers.

Methods: Using location targeting technology, Google and Facebook ads were directed to 10 counties in Kentucky and were only available to individuals within 1000-1600 feet of county boundaries. Zip codes were used to exclude individuals outside of county boundaries. The ads used Facebook’s and Google’s ad network by using established key words recommended for adolescent mothers e.g., “16 and pregnant,” “teen mom.” Ads were modified via A-B testing methods to optimize recruitment metrics. Facebook and Google analytics were used to test effectiveness. The ads sent adolescent mothers to the Internet-based social marketing intervention. After arriving at the site, the adolescents landed on a platform that asked them to read a research preamble and complete a brief pre-test before they were allowed to reach the intervention.

Results: The recruitment ads generated extensive viewer impressions, increasing brand awareness of the project. After 8 months of recruitment, the ads were viewed 2,026,680 times on Facebook and 2,125,870 times on Google. 7,518 individuals clicked on the ad, which converted to 5,797 individuals visiting the website with 398 individuals returning multiple times to the intervention website. The time spent on the website for individuals that did not enroll in the intervention (introductory information, preamble and complete pretest) is 15 seconds, indicating that individuals read at least some of the content. The ads were modified three times resulting in an increase in the number of pages viewed per session (3.88 pages per session vs. 1.05 pages per session, p<0.001) and average session duration (6.5 minutes vs. 4 seconds, p<0.001). To date, ten individual have enrolled in the study and the ads have cost $137 per new research study participant.

Conclusions: Adolescents are accustomed to web sites with an open platform in which the entire content can be viewed before a decision is made to register. Our research design required a pretest before the individuals could view the website, in order that we could test the effectiveness of the Internet-based social marketing intervention. This design served as a barrier to research recruitment in the population. Social media may be a cost-effective way in which to direct adolescents to an Internet-based intervention. Whether this leads to them actually taking part in the intervention will continue to be examined. Similar to the advertising field, real time modifications are needed to optimize
recruitment and retention. Whether allocating funds for customer acquisition improves recruitment will need to be examined.

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SEXTING AND ADOLESCENTS: A DESCRIPTIVE STUDY OF SEXTING AND YOUTH IN AN URBAN POPULATION
Julie Spencer, MD, MPH1, Johanna Olson, MD2, Sheree Schrager, PhD3, Diane Tanaka, MD2, Marvin Belzer, MD, FSAHM2
1Southern California Kaiser Permanente; 2Children's Hospital Los Angeles

Purpose: Sexting is becoming a more prevalent practice among today’s youth. (1) Studies have shown a link between sexting and other high-risk sexual behavior. (2) The purpose of this study was to investigate the prevalence of sexting of select youth in the Los Angeles area as well as discover the opinions of youth themselves as to why they engage in sexting behavior.

Methods: Fifty-five youth presenting for care at the Teen Health Center at Children’s Hospital Los Angeles were surveyed to evaluate sexting prevalence and specific sexting behaviors such as forwarding sexts, reasons for sending sexts, and youth’s concerns regarding sexting. Chi-square analysis was used to compare answers to sexting behavior questions between genders.

Results: More than half the youth in our sample (48.5% of girls, 63.6% of boys) had sent a sext, and the majority (70% of girls, 82% of boys) had received a sext. There were no significant gender differences in sending, receiving, or forwarding sexts. Girls expressed significantly more concern than boys about how sexting could affect their reputation, including getting caught by an adult with a sext (χ2(1)=6.246, p=.012) and how others would think of them (χ2(1)=13.38, p<.001). 52% of respondents said they would be comfortable talking with their doctor about sexting.

Conclusions: Sexting is becoming more prevalent in today’s youth dating culture. In regards to sexting, youth seem to be worried that sexting may damage their reputations and that there may be personal or legal repercussions for getting caught with a sext. Youth, who need to be made aware of the possible psychosocial complications of sexting, may be receptive to physicians discussing the implications of sexting with them.

ASSESSING FEASIBILITY AND STRATEGIES FOR CLINICIANS TO COMMUNICATE VIA SOCIAL MEDIA WITH ADOLESCENT PATIENTS ABOUT HPV VACCINATION
Rebecca Ortiz, PhD1, Autumn Shafer, PhD1, Joan Cates, PhD2, Tamera Coyne-Beasley, MD, MPH2
1Texas Tech University; 2University of North Carolina at Chapel Hill

Purpose: HPV is the most common sexually transmitted infection in the U.S. and can lead to genital warts and various types of cancer. Nearly all sexually active men and women will contract the virus at some point in their lifetime if not vaccinated. The HPV vaccination completion rates among U.S. adolescents lag behind those of other adolescent vaccines. Adolescents are often involved in the decision to get vaccinated, but many have misconceptions and lack general knowledge about the vaccine. The purpose of the study was to determine feasibility and strategies for using social media to promote HPV vaccination to patients in a pediatric and adolescent clinic in North Carolina. The information was used to create a social media intervention promoting HPV vaccination to eligible patients in the clinic. The intervention is currently undergoing data collection.

Methods: Four initial focus groups were conducted with 13 females and 25 males between the ages of 11-21 (M=15.86) in North Carolina. The groups ranged in size from 7-12 participants each, and the majority were black (N=31). Black youth were recruited heavily as rates of cervical and anal cancer are disproportionately higher among blacks than whites, and the aforementioned clinic includes a large population of black patients. Two additional meetings were held with a sample of previous participants who became our advisory committee to confirm initial findings. All participants were active users of social media. Discussion topics included purpose for using social media, preferences for type of health information desired via social media (e.g., facts about HPV), willingness to receive health information from what sources and why.

Results: Participants were willing to receive information about HPV and the vaccine through social media if the source was: (1) well known or someone they knew personally, (2) credible, (3) liked, and (4) relevant to the topic. Clinicians were named as one of the top sources. Participants preferred receiving information through indirect avenues (such as social media news feeds) to ensure privacy of receipt. They felt messages (particularly about sexual health) posted directly on their social media page or sent through private messaging on social media may be seen by others and misinterpreted. Participants preferred messages in the form of short, interesting facts about a variety of health topics (i.e., not just HPV) that grab their attention and are written in a teen-friendly style. Paid advertising was not considered a trustworthy source, as it was associated with for profit drug companies.

Conclusions: Findings suggest that adolescents trust clinicians and are willing to receive health information from them in virtual spaces. Clinicians can create a presence in social media for adolescent patients that regularly provides interesting and relevant health information, including information about HPV and the vaccine. Adolescents are particularly interested in information originating from or about celebrities or peers with relevant experiences. Paid promotion on social media sites is discouraged.

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INVESTIGATING KEY CHARACTERISTICS OF ELECTRONIC HARASSMENT INCIDENTS: A QUALITATIVE STUDY
Ellen Selkie, MD, MPH\textsuperscript{1}, Nikita Midamba, MS\textsuperscript{2}, Megan Moreno, MD, MPH\textsuperscript{2}
\textsuperscript{1}University of Washington; \textsuperscript{2}Seattle Children's Research Institute

Purpose: Electronic harassment, also referred to as cyberbullying, is associated with multiple negative health and psychosocial outcomes including depression, suicidal ideation, school problems, and substance use among adolescents. However, the prevalence of electronic harassment remains unclear, with estimates of involvement ranging between 7 and 72\% of adolescents depending on the definitions and scenarios used in any given study. The purpose of this study was to explore the views of adolescents and adults regarding examples of perceived cyberbullying or electronic harassment in order to develop a unified definition of this phenomenon.

Methods: In this qualitative study, participants were recruited through purposeful sampling of adolescents, educators, health care providers, researchers, legal professionals, and parents from May to August 2014. Participants completed a single-item, open-ended questionnaire either on paper or online, in which they described a case that they felt clearly represented cyberbullying or electronic harassment. Responses were reviewed by two investigators using a constant comparative approach to develop common themes and representative cases, with a third investigator reviewing a smaller subset of responses to strengthen confirmability of analysis.

Results: A total of 102 participants completed the survey including 20 adolescents, 18 educators, 32 health care providers, 21 researchers, 8 legal professionals, and 8 parents. All participants were able to describe an incident of cyberbullying or electronic harassment, either from personal experience or from hearing about it through other people or media. Common themes in descriptions of incidents included 1) threats of harm or directives to harm oneself; 2) rumors or mean comments; 3) embarrassment or humiliation of victims; 4) repetition; 5) characteristics unique to electronic environments such as anonymity and dehumanization of victims; and 6) negative outcomes in victims.

Conclusions: Our findings indicate that perceptions of “typical” cyberbullying or electronic harassment incidents include common characteristics identified across a range of age groups and stakeholders. While many of these descriptors share similarities with traditional bullying, others, such as anonymity, suggest distinct differences for cyberbullying and electronic harassment. Future research can use this data to create an evidence-based definition of electronic harassment that could be used for screening and measurement purposes.

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"IT’S YOUR TWITTER, SO YOU CAN JUST SAY HOW YOU FEEL": HOW ADOLESCENTS WITH DEPRESSION AND THEIR PARENTS USE SOCIAL MEDIA

Ana Radovic, MD, Amber N. Blackwood, BS, Elizabeth Miller, MD, PhD
Children’s Hospital of Pittsburgh of UPMC, University of Pittsburgh School of Medicine

**Purpose:** Social media (SM) among adolescents is ubiquitous. Almost all adolescents (81%) and many parents (67%) use SM. Adolescents often use SM to explore identity online through feedback on photos and status updates. Less is known about patterns of SM use in adolescents with depression, who use the internet more frequently and are more likely to disclose personal information. We conducted this qualitative study to examine how adolescents with depression and their parents use SM, their negative and positive experiences, parents’ views on their child’s use, and whether and how they may use SM to connect with other adolescents who feel depressed and other parents.

**Methods:** Separate interviews were conducted with adolescent/parent dyads receiving mental health treatment for depression at a large academic institution. Interviews were audio-recorded, transcribed, and qualitatively coded for major themes, using qualitative content analysis through an iterative process. Interview questions assessed demographics, extent of SM use, positive/negative experiences with use, and differences in use when in a low mood, as well as online interaction with other adolescents or parents.

**Results:** Thirty-nine interviews (20 adolescents, 19 parents) were completed. The average age for adolescents was 15 (13-20) and most (16) use SM several times a day. The average age for parents was 46 (37-55) and most (14) use SM once a week or more. Some adolescents described how when being in a depressed mood they use SM more to share inspirational quotes or look for humorous media to distract. Others stated when in a depressed mood, they avoid SM because of triggering photos (e.g. self-harm) or feeling excluded from social events. Adolescent’s negative experience on SM such as cyberbullying would lead some to change SM use patterns such as deleting unsupportive “friends” or an entire SM account. Adolescents use sites where they are known differently from sites on which they are anonymous. On anonymous sites, they attempt to provide supportive messages to other adolescents who display depressive symptoms and encourage them to get help. Parents use SM to monitor their children and most show concern about an adolescent sharing their depressed status for fear of bullying or being treated differently by others. Parents have ambivalence regarding talking to other parents online about depression, having concerns about privacy but also desiring advice from other parents who have experienced similar situations.

**Conclusions:** Adolescents with depression reported using different SM sites for different purposes -- anonymous sites offer a place to share more information about their mood and connect with others with similar experiences whereas public sites are for displaying a different identity. Parents wish to connect anonymously with other parents to share experiences while maintaining privacy. Designing social media interventions to address adolescent depression should take these insights from adolescents and parents into account such as ensuring anonymity, encouraging sharing of positive strategies that youth have found helpful, addressing parent concerns about privacy and stigma, and allowing for peer connections while avoiding topics, photos, and videos which may be triggering.
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