

ABSTRACT

Since middle of the 20th century, numerous research studies have shown that the media represent an influential element on children and adolescents and have a profound impact on their health. Notwithstanding, with the continuous advancement in technology, it is expected an increasing on the time spent with media.

Adolescence represents a time of critical development at the biologic, behavioural and social levels. During this period, it is expected the increase of adolescents' independence from family and the consolidation of their identity. So, they have more time free from parental control, on a context where rules become more permissive, which open doors for them self-directing their own behaviours. On the other hand, adolescence is also the period during which increases susceptibility to external influences, including peer and media. So, it is important to clarify the potential effect of media exposure in adolescents' behaviours, in order to target specific and early interventions capable of preventing adverse consequences of media usage.

This research aimed to evaluate the association between adolescents' characteristics and television and computer use in early adolescence and to determine the association between this exposure and behavioural characteristics on late adolescence.

This study was developed as part of the EPITeen cohort (Epidemiological Health Investigation of Teenagers in Porto). Eligible participants were urban adolescents that were born in 1990 and were enrolled at public and private schools in Porto. The baseline evaluation was held during the 2003/2004 school year (proportion of participation of 77.5%), when they were 13 years-old. The second evaluation took place in the 2007/2008 school year (17 years-old). At both evaluations, a physical examination was performed and data were collected using self-administered questionnaires comprising demographic, social and behavioural characteristics. The amount of time spent watching television and using computer was evaluated separately for each one and separately for week and weekend days. Based on this information, and for each media, we computed the global daily average time considering the mean of the 5 week days and the 2 weekend days. The total media use per day was calculated through the sum of the time using television and computer.

To analyze media exposure at 13y the sample comprised 1680 adolescents (884 girls and 796 boys). From those adolescents, 1538 were evaluated at the age of 17, but 292 had missing or inconsistent information about time of television and computer use. Therefore, the final sample for the longitudinal analyses comprises 1246 adolescents (659 girls and 587 boys).

Data were analysed separately for boys and girls. Proportions were compared using the Chi-Square test or Fisher's exact test. To estimate the magnitude of the association between the adolescents' characteristics and each media exposure, odds ratio (OR) or proportional odds ratio (POR) and their 95% confidence intervals (95%CI) were calculated using unconditional logistic regression or ordinal regression, respectively. All models were adjusted for parent's education.

Regarding the adolescents' characteristics associated with television and computer use at 13 years old girls attending private schools had lower odds of being exposed to higher levels of television (POR=0.59; 95%CI 0.43-0.81), as well as those who practiced sports more than once a week (POR=0.73; 95%CI 0.56-0.97). Regarding the computer exposure, girls from private schools were also less likely of using computer (OR=0.55; 95%CI 0.35-0.85). At opposite, those who were depressed had greater odds of using computer for longer (OR=1.71; 95%CI 1.11-2.61). Considering the overall media exposure, the odds of higher exposure was lower in those from private schools (POR=0.53; 95%CI 0.39-0.71) and higher in smokers (POR=1.42; 95%CI 1.06-1.91). In boys, there was a higher probability of watching more television, among those who did not live with both parents (POR=1.61; 95%CI 1.13-2.28) and among those who smoke (POR=1.49; 95%CI 1.01-2.08). Those attending private schools (POR=0.54; 95%CI 0.37-0.77) and those who sleep more than 9 hours (POR=0.48; 95%CI 0.30-0.78) were less likely to expend more time watching television.

After adjusting for parents education, ordinal and proportional regressions illustrated that adolescents with higher use of television at the age of 13 were also those who presented higher television consumption four years later (in girls, POR=2.25; 95%CI 1.43-3.56; in boys POR=2.00; 95%CI 1.20-3.32). For computer use the same pattern was found, for girls (POR=1.49; 95%CI 1.03-2.18) and for boys (POR=1.68; 95%CI 1.18-2.37). We also found, girls that spent more time using computer at the age of 13 are more likely to have history of school suspension (OR=3.44; 95%CI 1.63-7.23), and boys that used more global daily time media in early adolescence were significantly more prone to smoke on late adolescence (OR=1.61; 95%CI 1.04-2.49).

To conclude, socioeconomic and environmental characteristics are associated with high media use at both ages, showing adolescents from disadvantaged families had higher television and computer use. We also found that high media consumption in early adolescence predicted high media consumption in late adolescence. Additionally, we found that adolescents that spent more time using media in early adolescence were more prone to fail at school and to engage on smoking behaviour in late adolescence.