The following full text is a publisher's version.

For additional information about this publication click this link.
http://hdl.handle.net/2066/150208

Please be advised that this information was generated on 2018-10-12 and may be subject to change.
International trends in electronic media communication among 11- to 15-year-olds in 30 countries from 2002 to 2010: association with ease of communication with friends of the opposite sex

Meyran Boniel-Nissim1, Michela Lenzi2, Emese Zsiros3, Margarida Gaspar de Matos4, Rob Gommans5, Yossi Harel-Fisch1, Amir Djalovski1, Winfried van der Sluijs6

1 School of Education, Bar-Ilan University, Ramat-Gan, Israel
2 Department of Developmental and Social Psychology, University of Padova, Padova, Italy
3 Department of Information and Research, National Institute of Child Health, Budapest, Hungary
4 Department of Health Education, University of Lisbon, Lisbon, Portugal
5 Centre for Child and Adolescent Studies, Utrecht University, Utrecht, The Netherlands
6 Child and Adolescent Health Research Unit, University of St Andrews, St Andrews, Scotland, UK

Correspondence: Meyran Boniel-Nissim, School of Education, Bar-Ilan University, Ramat-Gan, Israel, Tel: +972-523-382-398, Fax: 972-8-9985248, e-mail: meyranbn@gmail.com

Introduction

Electronic media has become a central part of the lives of adolescents. Therefore, this study examines trends in adolescent electronic media communication (EMC) and its relationship with ease of communication with friends of the opposite sex, from 2002 to 10 in 30 European and North American regions. Methods: Data from the HBSC study were collected using self-report questionnaires from 11-, 13- and 15-year-old participants (N = 404 523). Results: EMC use has grown over the years in most of these regions and increases with age. Even though Internet usage is often blamed for its negative effects on teenagers’ social interactions in the physical world, in this study EMC was found to predict ease of communication with friends. Especially, the more they use EMC, the easier they find it to talk with friends of the opposite sex. Although these findings suggest that EMC reinforces communication, the interaction between year (2002–2006–2010) and EMC usage was not significant. Conclusion: This finding contradicts research that suggests that EMC contributes to loneliness and isolation, and supports other studies that present electronic media as a powerful tool for helping to connect people.
a dichotomized variable was created with responses indicating ‘less than 5 days a week’ recoded as 0, and ‘5 days or more per week’ as 1.

**Sociodemographic information**

Participants reported their gender.

**Access to computers**

Access to computers was measured by asking participants the number of computers in their home. The answers were dichotomized into 0 ‘none’ or 1 ‘one or more’.

**Number of close friends**

Number of close friends was measured by asking: ‘At present, how many close friends do you have?’ with separate responses for male and female friends (response categories 1 = none; 2 = one; 3 = two; 4 = three or more). Responses were included in the model matching participants’ opposite sex.

**Ease of communication with friends of opposite sex**

Ease of communication with friends of opposite sex was measured by the following item: ‘How easy is it for you to talk to friends from the opposite sex about things that really bother you?’. Responses were included in the model matching participants’ opposite sex.

**Statistical analyses**

Chi-square analyses were used to examine EMC by region, year and age group. Secondly, hierarchical logistic regression analyses were carried out including all the control variables and EMC, and interaction EMC by year. Then, for each region, hierarchical logistic regression analyses were used to investigate the relationship between EMC use and ease of communication with the opposite sex and the change over time. The following control variables were included: Year of survey, gender, age, the presence of a computer at home and the number of close friends of the same and opposite sex. Data were entered in three blocks. In the first block, the control variables were added. In the second, EMC was added and in the third, EMC by year. Analyses were conducted using SPSS 20.

**Results**

In 2010, across regions, almost 42% of 11-year-olds, about 62% of 13-year-olds and almost 73% of 15-year-olds communicated with their friends using electronic media 5 days or more a week (table 1). From 2002 to 2010, EMC increased significantly in most of the participating regions. Notable increases can be observed in

![Table 1](image-url)
### Table 2 Hierarchical logistic regression model for easy talk to opposite sex by region

<table>
<thead>
<tr>
<th>Region</th>
<th>Variable</th>
<th>OR</th>
<th>CI for OR</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11-year-old</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13-year-old</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15-year-old</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No computers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One or more computers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number friends</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Western European regions between 2002, 06 and 10. Similar trends were reported in Southern Europe and in some Central and Eastern European regions. Some Northern European regions showed increase mostly between 2002 and 06.

In spite of the general growth of EMC within the regions, mixed trends were observed in some regions, for example, in Canada. No significant change across years and with age was found for Wales (at age 11), Germany (at age 11) and Canada (at age 13).

In the general model, hierarchical logistic regression analyses were carried out for all regions together, including all the control variables and EMC, and the EMC interaction by year (see table 2: ALL). With respect to the association between EMC and ease of communication with friends, across all regions, the higher the frequency of EMC, the easier the communication with friends of the opposite sex.

Communication with the opposite sex was shown to be significantly easier in 2006 compared with 2002, if you were: older, had a computer in the house, had more friends of the opposite sex and made use of EMC. Finally, although the predictor EMC by year overall was not found to be significant (P = 0.06); however, the interaction did show a significant OR (0.96) for 2006 compared with 2002.

Furthermore, the same model was applied for each region (table 2). While EMC is positively associated with ease of communication with friends of the opposite sex in all of the regions, in 23 regions (out of 30) the interaction with year was not significant. The only seven regions with significant interaction between EMC and year (compared with 2002) were Lithuania, Croatia, Macedonia, Switzerland, Denmark, Germany and France.

Discussion

The first aim of this study was to describe the trends of EMC in a cross-regional sample of 11-, 13- and 15-year-olds. Findings indicate that EMC is widely used among adolescents in European and North American regions. EMC is more frequently used among 15-year-olds than 11-year-olds. Growth in EMC between 2002 and 10 was observed in the majority of regions included in the study as can be seen in previous research.16,17 With the appearance of smartphones and the growing popularity of social virtual networks,18 it is understandable that the use of EMC is increased.

The second aim of the study was to investigate the relationship between EMC and ease of communication with friends of the opposite sex. It was found that the more teenagers use EMC, the easier it is for them to talk to friends of the opposite sex. This finding is supported by other studies showing that EMC helps teenagers to develop better social skills, which in turn helps them to expand and strengthen their peer group.18 It has been suggested that the lack of eye contact and possible invisibility, that characterize EMC, help teenagers to communicate more freely about personal issues.19

The third aim of this study was to investigate whether the interaction between EMC and the ease of communication with the opposite sex had changed over the years (2002–10). The general model showed no influence of year on the interaction between EMC and ease of communication with friends of the opposite sex, except for the years 2002–06. The analysis that investigated each region suggested only seven regions (out of 30) with significant influence of year on the interaction between EMC and ease of communication. It is possible that the emergence of social networks during that period (e.g. Facebook in 2004) influenced the association between EMC and ease of communication with friends of the opposite sex.

Findings presented in this article must be considered in the context of the study’s general strengths and limitations, which are discussed elsewhere in this supplement. A specific limitation of this study is that the EMC measure combines various forms of EMC hence the unique contribution of individual types of EMC cannot be explored. Further research should elaborate on the forms of EMC and test each one individually. Nevertheless, the results suggest no influence of year on the interaction between EMC and ease of communication with friends of the opposite sex. Meaning that, despite the growth in EMC, communication with friends appears to remain stable over the years with no apparent negative influence of EMC. This finding contradicts research that suggests that EMC contributes to loneliness and isolation20 and supports other studies that present electronic media as a powerful tool for helping people to connect.4,15

Acknowledgements

HBSC is an international study carried out in collaboration with WHO/EURO. The international coordinator of the study was Candace Currie, University of St Andrews, Scotland; and the data bank manager was Oddrun Samdal, University of Bergen, Norway. A complete list of participating countries can be found on the HBSC website (www.hbsc.org). The data collection for each HBSC survey is funded at the national level.

Conflicts of interest: None declared.

Key points

- Adolescent EMC has grown over the years and increases with age.
- Adolescent who use EMC more frequently finds it easier to talk with friends of the opposite sex.
- This study indicates that Electronic Media can be a powerful tool for helping adolescents to connect.

References


