Parents as mediators of children´s media (ab)use: An elementary-school based programme to prevent problematic media use as precursor of internet and gaming addiction

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Abstract

OBJECTIVES: Considering that problematic use of screen media during childhood is a common risk factor for a large number of negative health outcomes, with internet and video game addiction recently being added to the list (Mößle 2012), we describe the concept of MEDIA PROTECT, an intervention targeting parents aiming to reduce children´s problematic media use which is running in the formative phase at an elementary school in Hanover, Germany. We present results of our RCT evaluated program targeting mainly children (Kleimann et. al., 2008), and describe how these findings led to an adapted intervention concept that uses a triangle of approaches to support parents in providing a developmentally appropriate media education for their children: Information on media effects, pedagogical assistance to limit and accompany their children´s media use, plus technical support for installing protection software.

DESIGN: The evaluated intervention was a four year longitudinal control group study with 1.059 elementary school children (third- to fifth-grade; baseline, n = 113; treatment, n = 492; control, n= 54). **MAIN OUTCOME MEASURES:** Media availability and exposure, leisure time and social behavior, perceived parental education and guidance (general/media), socio demographic parameters. Students' IQ, academic self-image, classroom climate, social integration. Parents' socio demographic parameters, educational achievement, media equipment and exposure (self/child) and their children's leisure time behavior. **RESULTS:** Analyses on the effectiveness showed a short-term decrease in computer usage times, and in use of violent content on TV, and a slight increase in school achievement for mathematics. Implementation of the programme was difficult and greatly reduced especially for the third treatment (5th grade). A significant longer-term reduction in bedroom media ownership was reported, though not in media usage times. To improve long-term effects, a shift to lower age-groups and more focus on indirect parent-mediated changes, plus the inclusion of a currently running formative phase in 2012/13 prior to RCT evaluation are the improvements and adaptations we derived from these results.
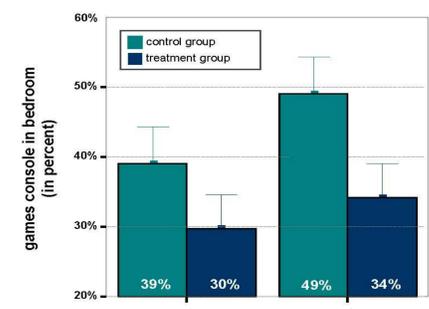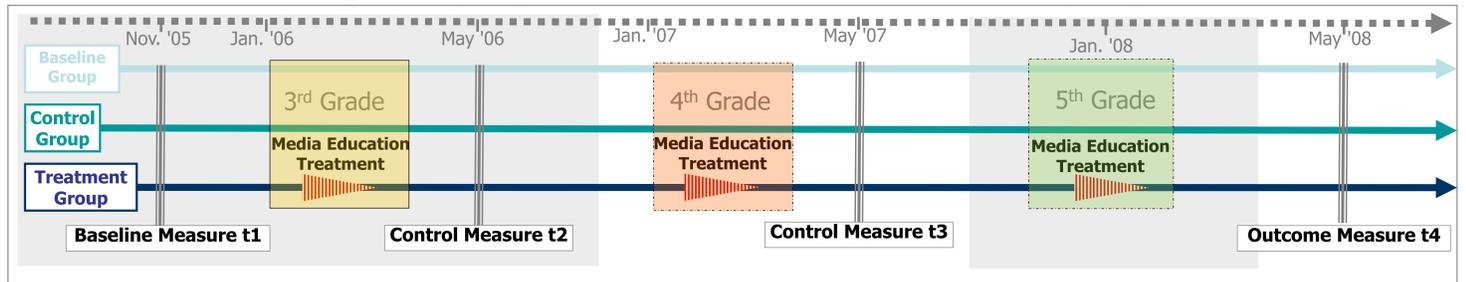
Introduction

It is one of the major challenges for parents today to follow a path of age-adequate media use in the family. This path ideally runs from protecting small children from any kind of screen media exposure (American Academy of Pediatrics, 2011) to limiting time, content and bedroom media ownership and accompanying responsible use in elder children to a step-by-step release of youths into taking on their own responsibility for a limited, skilled and critically informed use. As media routines in the family show high stability over time (Mößle 2012) and are difficult to change once they are established, and longer usage times are associated with higher problematic content (Hancox, Milne, & Poulton, 2004; Mößle, 2012) a crucial point for intervention is the time children enter school. For German kindergarten children, television is still the dominant medium, but upon entering school the school-related computer and internet use leads to a fast increase in usage times and problematic content at home. This poses a particular challenge to media education in the family, with children routinely using computers for other than the intended educational purposes in the home, and reaching usage times of several hours per day for screen media and a high proportion of problematic content such as media with age ratings of 16 or 18 (Mößle 2012; Feierabend, Karg, & Rathgeb, 2011). Knowledge about the support needs and advisory requirements of different groups of parents provide a basis for effective target-group specific parent counseling in media education (Bleckmann, 2006).
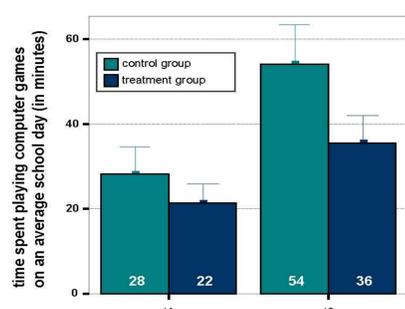
Methods Berlin intervention

On all measurement occasions a paper-pencil interview is conducted within the class room setting concerning media availability and exposure, leisure time and social behavior, perceived parental education and guidance (general/media), as well as socio demographic parameters. Standardized psychological tests serve to assess students IQ (CFT 20), academic self-image, classroom climate and social integration (FEESS 3-4). Additionally, all students' body weight and height is taken. The children's parents are questioned at the first and the third measurement occasion regarding socio demographic parameters, educational achievement, media equipment and exposure (self/child) as well as their children's leisure time behavior. A teacher questionnaire is used to evaluate class characteristics, school performance and work habits at all measurement occasions. Starting in February 2006, media education was conducted in the intervention classes (n = 20).
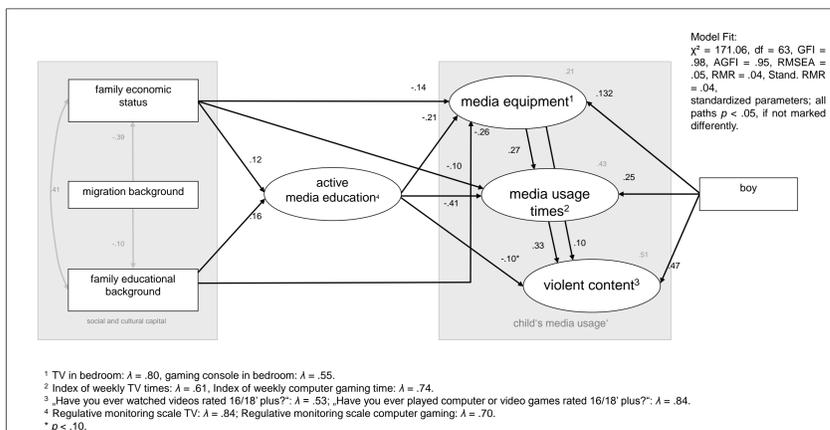
Results Berlin intervention

The intervention consisted of 12-lesson primary teaching units in both 3rd and 4th grade, administered by trained teachers in the class context with accompanying print materials on the topic of problematic vs. adequate media use (a small textbook and a media use contract to be signed in 3rd grade, a 44-page textbook in 4th grade) plus a parent evening. Intervention in 5th grade was a contest in which participating classes competed for a prize awarded for the best creative transformation of media topics (Flyer, school magazine, event).

First analyses on the effectiveness of the intervention program show reduced bedroom media ownership (TV, GC, PC) and media exposure (time and content) for children in the 20 intervention schools at t3, compared to children in the control schools. (See figure 1, figure 2)
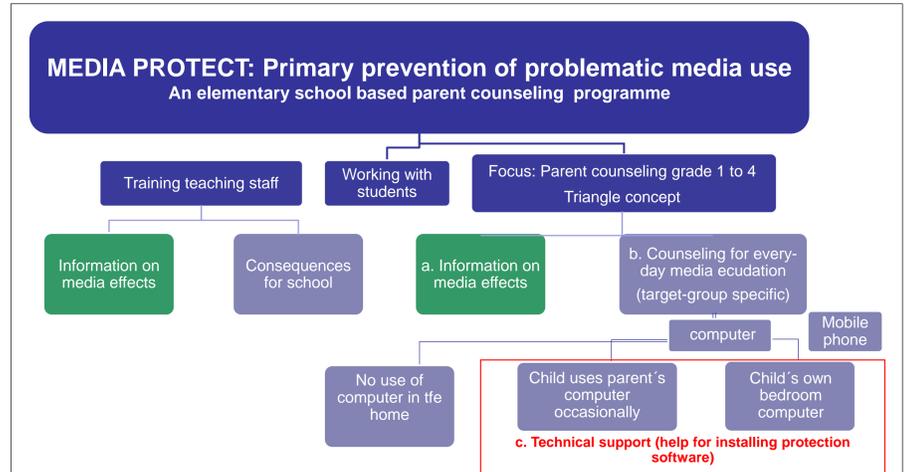
Regarding school achievement, a higher percentage of children improving their grades in the intervention group can be found at t3.A Structural equational analysis for t3 shows significant relations of gender (male), personality variables (lower empathy and higher impulsiveness), a high degree of daily media exposure (content and time) and problematic social behavior (measured by school violence). (Kleimann et. al., 2008). For t5, a significant reduction in bedroom media equipment, but no overall reduction in screen media usage times was found (Kleimann, 2011).

Figure 1: Bedroom Media Equipment (Games Console) by group and measurement occasion[1]

1 Multivariate (TV/GC/PC) Analysis: Media Equipment (Repeated) * Group, $F(3/605) = 4.61$, $p < .01$, $\varepsilon = .15$; Group $p < .05$, $\varepsilon = .14$; Media Equipment, $p < .001$, $\varepsilon = .20$.

Figure 2: Media Exposure (Time spent on playing Computer Games) by group and meas.-occasion[2]

2 Multivariate (TV/GC) Analysis: Media Exposure (Repeated) * Group, $F(2/706) = 4.26$, $p < .05$, $\varepsilon = .11$; Group $p < .01$, $\varepsilon = .13$; Media Exposure, $p < .001$, $\varepsilon = .35$.

Conceptional development and description of MEDIA PROTECT

Analysis of Data from the Berlin Longitudinal Media Study (BLM, Mößle 2012), of which the intervention described above formed a part, showed active media education (parents limiting children´s media use time,- and contentwise, taking interest in children´s media activities) to be a central mediator of children´s media use (figure 3) which was not adequately adressed in the above intervention. At the same time, parents as a target group pose a great challenge regarding the rate of participation in interventions. Therefore, it seems advisable to establish contact with parents via regular parent evenings with high attendance rates, plus special thematic events such as the invitation to a "PC doctor evening" (parents get help with installing whitelists and time limitation software on a computer). A minor focus remains, secondly, on training the teaching staff, sensitizing them for the unintended side-effect of a technology-rich education and thirdly on working directly with the children, mainly to support healthy leisure time alternatives. BLM study showed a number of factors to be associated with video game dependence. Dysfunctional use (video playing video games in reaction to real-life disappointment or failure), playing MMPORGs (Massively Mulitplayer Online Role Playing Games) are risk factors, social support in the peer-group and even more markedly the family, are important protective factors. The formative phase of MEDIA PROTECT is carried out by two trained professionals from "return – Fachstelle für exzessiven Medienkonsum" at an elementary school in Hanover region during the 2012/13 school year. Currently, analysis of answers to a first written questionnaire administered to all parents in November 2013 is being carried out, with a focus on documenting different parental support needs and advisory requirements.

Model Fit:
$\chi^2 = 171.06$, df = 63, GFI = .98, AGFI = .95, RMSEA = .05, RMR = .04, Stand. RMR = .04, standardized parameters; all paths $p < .05$, if not marked differently.

1 TV in bedroom: $\lambda = .80$, gaming console in bedroom: $\lambda = .55$.
2 Index of weekly TV times: $\lambda = .61$, Index of weekly computer gaming time: $\lambda = .74$.
3 "Have you ever watched videos rated 16/18' plus?": $\lambda = .53$; "Have you ever played computer or video games rated 16/18' plus?": $\lambda = .84$.
4 Regulative monitoring scale TV: $\lambda = .84$; Regulative monitoring scale computer gaming: $\lambda = .70$.
* $p < .10$.

Figure 3. Factors influencing problematic use of screen media.

Figure 4: MEDIA PROTECT concept

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