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# Review

# Family functioning and information and communication technologies: How do they relate? A literature review



Joana Carvalho a,\*, Rita Francisco b,1, Ana P. Relvas a,2

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# ABSTRACT

The advances and incorporation of information and communication technologies (ICTs) in everyday family life has earned a place of prominence in the research field. This paper provides a research synthesis of the literature published between 1998 and 2013 examining the relationship of ICTs and family functioning. Searching through databases, 45 papers were located and analyzed which enabled the conceptualization of this relationship in five domains: (1) attitudes toward ICTs, (2) types of ICTs and using patterns, (3) family cohesion, (4) family roles, rules and intergenerational conflicts, and (5) family boundaries. Results show that ICTs have implied qualitative changes in family functioning, creating new interaction scenarios and rearranging current family relational patterns. Some gaps in the literature are pointed out, such as the difference operationalization of variables and the use of non-standard instruments in the studies. Suggestions are made for clinical interventions and future research in this domain.

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E-mail addresses: joanasofiacarvalho@gmail.com (J. Carvalho), rmfrancisco@psicologia.ulisboa.pt (R. Francisco), aprelvas@fpce.uc.pt (A.P. Relvas).

#### 1. Introduction

Information and communication technologies (ICTs) include hardware (e.g., computers, smartphones, game consoles) and software (e.g., email, videoconferencing, online social networks) that

<sup>&</sup>lt;sup>a</sup> Faculty of Psychology and Educational Sciences, University of Coimbra, Rua do Colégio Novo, 3001-802 Coimbra, Portugal

<sup>&</sup>lt;sup>b</sup> Faculty of Psychology, University of Lisbon, Alameda da Universidade, 1649-013 Lisbon, Portugal

<sup>\*</sup> Corresponding author at: Faculty of Psychology and Educational Sciences, University of Coimbra, Rua do Colégio Novo, Apartado 6153, 3001-802 Coimbra, Portugal. Tel.: +351 239 851450; fax: +351 239 851465.

<sup>&</sup>lt;sup>1</sup> Tel.: +351 217943655; fax: +351 217933408.

<sup>&</sup>lt;sup>2</sup> Tel.: +351 239 851450; fax: +351 239 851465.

sustain the digital culture (Bacigalupe & Lambe, 2011; Stafford & Hillyer, 2012), have progressively become part of our everyday lives (Aponte, 2009; Bacigalupe & Lambe, 2011; Blinn-Pike, 2009; Correa, Hinsley, & Zúñiga, 2010; Igartua & Moral, 2012; Lanigan, 2009; Stern & Messer, 2009; Stafford & Hillyer, 2012; Zhong, 2013). About 20 years ago families were using face-to-face (FtF) was the central mode of communication (Stafford & Hillyer, 2012), besides the use of television, video home system and books, the meaning of social network was consistent with families' Christmas card list' (Coyne, Padilla-Walker, & Howard, 2013). Nowadays, the internet is an extension of broader social roles and interests in the offline world (Colley & Maltby, 2008), which can enhance the social lives of its users (Amichai-Hamburger & Hayat, 2011). According to the latest publication of the Eurostat (2014), in 2013, 79% of European Union households (28 countries) have computers with internet access. More specifically, this is true of 94% of the households in Norway, 88% in the U.K., 80% in Belgium, 70% in Spain and 62% in Portugal. Moreover, the percentage of daily frequency of internet use within the last year in these countries is about 85% in Norway, 78% in the U.K., 68% in Belgium, 54% in Spain and 48% in Portugal. In the U.S.A., according to a survey from the Pew Research Center's Internet & American Life Project (2014), 86% of American adults used the internet in 2013, 90% have a cell phone and 42% own a tablet computer. But it is among the youngest (12–17 years old) that the percentage of internet use is most widespread: 95% of American teenagers are online and 74% access the internet on cell phones, tablets, and other mobile devices.

In recent years, the advances and incorporation of ICTs into everyday life have potentially created new interaction scenarios and rearrangements in current family and social relational models, based on a network society (Aponte, 2009; Bacigalupe & Lambe, 2011; Lanigan, 2009; Stern & Messer, 2009; Stafford & Hillyer, 2012). However, if the impact of rapid technological advances and their immersion in the experiences of everyday life have become strong targets of investigation, the truth is that the role and impact on family dynamics is still at an early stage of research (Aponte, 2009; Coyne, Bushman, & Nathanson, 2012; Şenyürekl & Detzner, 2009; Stafford & Hillyer, 2012; Williams & Merten, 2011).

# 2. Boundaries of the review

# 2.1. Objectives

As a topic of research, it seems relevant to provide a comprehensive review of the existing literature in this domain. Thus, this review intends to explore the relationship between ICTs and family functioning, to provide a better understanding of the interaction between ICTs and family life, as well as to identify gaps in the current literature and to suggest directions for future research. More specifically, we aim to answer the following research questions:

RQ1: Which are the ICTs used by families?

RQ2: Which are the variables of family functioning most related to ICTs use?

RQ3: How do ICTs and family functioning interact?

# 2.2. Method

The review includes a search of the relevant research literature. Therefore, electronic academic databases were consulted (Proquest, Ovid, B-on, Wok, Ebsco and Emerald) and also both general and the scholarly search engines (Google and Google Scholar), using combinations of the words: "family", "ICTs", "family functioning", "relations", "internet", and related terms (in English,

Portuguese and Spanish). To complement this, research was done in books following the same criteria.

From the 257 references found in the initial search, only 45 met the inclusion criteria established for this study: (a) published between 1998 and 2013, (b) written in English, Portuguese or Spanish, (c) including at least one ICTs, (d) and containing at least one variable of family functioning. A cut-off point of 15 years was made because there is little literature about this research topic before 2000. Most of the technology that exists today was not present within families 20 years ago, so references written before 1998 were excluded, as well as those papers not focusing on the interaction between family functioning and ICTs usage. Some monographs, conference presentations and poster (e.g., Gora, 2009) would be a nice addiction to this review but the methodology used in this literature review was essentially based on peer review papers, filtered, easy to locate and accessible to the scientific community, enabling its possible replication among scholars.

The 45 references that met the inclusion criteria were selected based on a reading of the abstract and then by the analysis of the whole text, in terms of the following characteristics: authors and the year in which the research was published; country in which the studies were developed; research design, including sample size, ICTs and family functioning variables, method, instruments used, and principal results achieved. Table 1 gives an overview of all these studies and a discussion of them is presented below.

The papers selected are empirical studies, literature reviews, theoretical articles, case studies, and other types of articles. Regarding the empirical ones, we can find a wide range of aims, designs, samples, and variables considered. They total 33 empirical studies, conducted in different countries such as Australia, Belgium, China, India, Israel, Korea, Mexico, Spain, Portugal, the United Kingdom (U.K.), Turkey and the United States (U.S.), between 2002 and 2013. Most are cross-sectional designs (24) and less than half of these studies are longitudinal (9); the preference for quantitative methodologies is clear (22), followed by the qualitative (9) with mixed design being in the minority (2). The instruments mostly used were questionnaires (presence and online), some constructed specifically for the research topic in question (15), followed by interviews (10) conducted separately or with the whole family, and a combination of questionnaires and interviews or diaries (8). The theoretical articles add up to six of the references found and were written between 1999 and 2012, including the redefinition of concepts that emerged from the interaction between ICTs and everyday family life, and the synthesis of paradigmatic researches in this domain. At least, two case studies, three comments (guest editor's note) and one research syntheses was found.

# 3. ICTs, individual use and impact on family functioning

#### 3.1. Information and communication technologies (ICTs)

# 3.1.1. Attitudes toward ICTs

Initially, ICTs appeared in the literature associated with the professional sphere. Only recently has this concept been employed related to personal relationships (Coyne, Stockdale, Busby, Iverson, & Grant, 2011; Stafford & Hillyer, 2012), in part due to the development of another parallel research field, computer mediated communication (CMC). From the 1990s, the rapid technological development (e.g., virtual reality, multimedia systems) have been reflected in changes in social and family life (Aponte, 2009; Blinn-Pike, 2009), due to the domestication of these technologies by families (Haddon, 2006) and reciprocal technological developments, which progressively create equipment which is more sophisticated and adapted to the family context (Blinn-Pike,

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