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Information and Communication Technologies and Family: Patterns of Use, Life Cycle and Family Dynamics

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Introduction

Information and Communication Technologies (ICTs) broadly designate hardware devices (e.g., computers, smartphones, webcams) as well as software and applications used on these devices (e.g., email, videoconferencing, online social networks) which underpin digital culture [1,2]. Given the exponential growth in the use of these resources over the last two decades, ICTs nowadays represent an integrative part of contemporary family life [2,3]. According to Eurostat's last publication [4], 81% of European households had computers with internet access in 2014. This is particularly true for 93% of the households in Norway, 90% in the U.K., 74% in Spain and 65% in Portugal. Regarding the USA, 87% of adults used the internet in 2014 [5]. More recent data indicate that 92% American adults have a cell phone, 68% have a smartphone and 45% have a tablet computer in 2015 [6].

Naturally, the rapid incorporation of ICTs into families' lives has created new interactions scenarios as well as rearrangements in current family relational patterns [1,3]. As a result, the interface between ICTs and family dynamics arises as a prominent topic of research. Thus, new and important questions are raised, such as: how are families dealing with the ubiquitous integration of ICTs on their lives? How do ICTs and family dynamics interact? What are the implications associated with this interaction? This paper provides a note about a recent literature review of existing literature on the topic [7] and then presents some specific implications and suggestions to be integrated into future studies in the field of ICTs and family systems.

The Interface between ICTs and Family Dynamics: What We Already Know

Aiming to provide insight into the relationship of ICTs and family dynamics, Carvalho, Francisco and Relvas [7] conducted a literature review of the literature on this topic over the last 15 years. Forty-five papers including at least one ICT- and one family functioning-related variables were reviewed. The findings suggested that a consensus on the prevalence of positive, negative or mixed aspects of the influence of ICTs on family lives is yet to be reached. This is valid concerning different aspects of family functioning identified in the review such as communication, cohesion, roles, rules, intergenerational conflicts and boundaries. Some results supporting this conclusion will be briefly presented next.

The interconnectedness facilitated by mobile services and social networking sites [8] potentiates the emergence of new patterns of technology use (e.g., media multitasking, perpetual connectivity) [2,3,9]. However, whereas some studies have suggested that these revolutions in human communication can lead to disruptions in family routine [10], loss of family control over virtual interactions [10-12], as well as over boundaries between the private and public spheres [2,9,11,12], other studies offered more optimistic results. In fact, the adoption of these new patterns of technology use was also found to simplify the current daily management activities [13-15]

and the maintenance of family relations despite geographical distance [1], especially in transnational families, which in turn facilitates the assurance of the family identity by a virtual presence in real time and at a low cost of use [1,15].

In addition, ICTs were found to increase the time spent as a family [1,15], the intimacy among members [16], and also to strengthen family bonds [1,2,15]. Contrastingly, another subset of studies suggested that ICTs reduce family time and lead to intergenerational conflicts due to children's use of ICTs for entertainment purposes and to the room culture phenomenon [10]. Furthermore, the rapid development of technological abilities by adolescents was found to intensify the intergenerational digital gap [10,17,18]. In this scenario, parental authority might be deflected to the children, creating space for questioning of family rules, boundaries and values [10,12].

Gaps between ICTs and Family Dynamics Relationship: What We Do Not know Yet

Overall, this research synthesis [7] underscored that ICTs introduce qualitative changes in the way that members of today's families interact with each other. However, the literature reviewed is revealed to be not only inconsistent, but also scarce and particularly heterogeneous. Studies focused on different ICTs (e.g., smart-phone, videoconference, instant messaging), partial variables of family functioning (e.g., cohesion, conflict) and different activities conducted with ICTs (e.g., meeting people, paying bills, communicating with family members). In addition, the use of non-standard instruments and different methodologies (e.g., questionnaire, interview, case study) was common. Finally, the existing literature on the topic of ICTs and family dynamics is limited to specific stages of the family life cycle, such as families with children in school and families with adolescent children. More importantly, some studies have suggested that ICTs might have different impacts on family life according to the specific stage of the family life cycle (e.g., couples in romantic long distance relationships, families with children, couples in the empty nest stage [14,19-21]). Notably, these data might partially explain the diversity of findings provided by this review.

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Future Direction

How can scientific knowledge progress in this research field?

Recognizing the scarcity, gaps and caveats among the literature on ICTs and family dynamics, advancing scientific knowledge on this subject is taking on substantial relevance. This assumes even more importance as some authors of recent studies, given the greater adoption of these resources by families, have considered ICTs a new family subsystem [1,18]. Nonetheless, in order to achieve this goal, it is crucial to expand the focus of analysis: identifying the diversity of ICT use, assessing different dimensions of the family dynamics (not only family functioning variables) and including the whole-family system, addressing how the interaction of ICTs and family dynamics varies according to the families' stage of life. In other words, drawing upon the conclusions of the research synthesis presented before, future studies should provide answers to the following key current research questions on the field:

RQ1: How are families using ICTs (in each stage of the family life cycle)?

RQ2: Are the patterns of ICT use associated with different perceptions of family dynamics (in each stage of the family life cycle)?

RQ3: Does the relationship between ICTs and family dynamics change in according to the stage of the family life cycle?

Aiming to respond to these global questions, an investigation is being conducted in Portugal, stemming directly from the presented research synthesis. Key aspects of this study will be briefly described next, since it might shed some light on possibilities for future research.

First, the study aims to identify patterns of individual use of ICTs (considering the type, variety, frequency, activity and contexts of use) and verify if socio-demographic characteristics (e.g., sex, socioeconomic status, education level) and the stage of the family life cycle influenced those patterns. In order to accomplish this goal, Emerging Technologies & Families Survey (SEFT/ETEF©) [22] will be administered to the study participants. This instrument, which assesses how family clinicians construe the impact of ICTs in the clinical context, is currently being used in a research across four Occidental countries (Canada, Mexico, Spain and USA) and adapted to the general Portuguese population. This adaptation will allow a significant step in the state of current research and also may stimulate future and cross cultural studies in this field.

As highlighted before [7], it is of highly relevant and necessary to use validated and standardised instruments. Thus, future studies should address this issue carefully. Second, the relationship between the patterns of individual of ICT use and individual perceptions of the family dynamics will be evaluated in this study considering not only some variables of the family functioning (e.g., cohesion, conflict) assessed by SCORE-15 [23,24], but also other variables of the family dynamics (e.g., quality of life) measured by QOL [25,26] and routines and family rituals assessed by FRQ [27], in each stage of the family life cycle (couple; family with young children/at school; family with adolescents; family with adult children/empty nest; [28]). The final goal of the study is then to create and test a comprehensive model of the relationship between ICTs and family dynamics, never neglecting the potential moderator of this interaction: the family life cycle.

Conclusion

Regardless of the rapid incorporation of ICTs into families' experiences of everyday life, research addressing the role and impact of ICTs on families' dynamics is still at an early stage of development. Based on a recent published literature review [7], particular gaps in this body of research were highlighted. Then, the main cornerstones of a current research were briefly presented, pretending to delineate some guidelines to be considered in further research worldwide.

Advances on the scientific development of this research field are highly necessary and valued, as it might inform the development of preventive interventional strategies aimed at families (focusing not only on risks of the ICT use but also on enhancing a positive integration of these resources into everyday family lives) and also draw implications for the general clinical practice. Further, scientific knowledge on this issue could help and advise the development and management of digital inclusion policies, optimizing the potential of ICTs. These will enable progress to be fostered and families' quality of life enhanced, as promoted by the Digital Agenda for Europe (DAE), included in the Europe 2020 Strategy [29].

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