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Parental activities seeking online parenting support: Is there a digital skill divide?

Arminda SUAREZ¹, Maria Jose RODRIGO², Mercedes MUNETON³

Abstract

This study examined the existence of a digital skill divide in Internet use for parenting purposes, exploring whether child-rearing content searched, parental skills on search practices, criteria used in the evaluation of content and satisfaction with the results are modulated by socio-demographic factors and level of Internet experience. Participants were 234 Spanish parents recruited through notices in day care centers, schools and parents' associations, who reported on these issues through an online survey. Results showed that parents were very active in searching for information on child-rearing issues. However, a digital skill divide can be seen mainly by parental education, gender and age on the content searched and perceived skills for going online. Parental age and education also shaped technical abilities such as searching practices, criteria for evaluating websites (level of confidence and relevance), and satisfaction with search results. In turn, level of experience in Internet use played a more restrictive role confined to searching practices and satisfaction with the results. The present findings may inform initiatives of Internet literacy training applied differentially to help fathers and mothers with low education and Internet experience levels to access higher quality, reliable educational content. They also may provide guidelines for those who develop websites for parents.

Keywords: parental digital divide, internet use, internet skills, positive parenting.

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Introduction

A growing body of research on parental online activities has shown that, above and beyond the everyday tasks that could be performed online, parents use the Internet as an important source of information to support their parenting role and to better promote their children's development (see for reviews, Dworkin, Connell, & Doty, 2013; Myers-Walls & Dworkin, 2015; Nieuwboer, Fukkink & Hermanns, 2013; Plantin & Daneback, 2009). The use of the Internet for parenting purposes allows parents to obtain information and counseling from experts, but also to exchange experiences with other parents and create virtual communities around certain child-rearing topics (Drentea & Moren-Cross, 2005; Madge & O'Connor, 2006; McDaniel, Coyne & Holmes, 2011).

Web-based parenting support, whether endorsing a public health approach or are targeted to indicated or selective groups, seems to compare favorably well with face-to-face methods of delivery (Ebata & Dennis, 2011). On-line support provides a sense of empowerment, purpose, and control that leads parents to become more active in constructing their own parenting role (Amichai-Hamburger, 2008). Parents who go online are autonomous in seeking for information, allowing personal control over contents and rate of learning. The support can be received immediately at any time, anonymously without embarrassment and tailored to their particular needs (LaMendola & Krysik, 2008). On this regard, the Council of Europe's Recommendation 19/2006 (Council of Europe, 2006) on the *Policy to Support Positive Parenting* has identified online support as one psycho-educational resource that could prove very helpful in promoting positive parenting in Europe. The aim of positive parenting work is to promote positive relationships between parents and their children based on the exercise of parental responsibility, thus granting children and adolescents rights within their families and optimizing their potential development and well-being (Rodrigo, 2010; Rodrigo, Almeida, & Reichle, 2015). Overall, Internet penetration levels are much higher among households with children in Europe than without children (Eurobarometer, 2008) as it is the case in the United States of America (National Telecommunications and Information Administration, 2011). A Google survey showed that new and expecting parents perform 2.7 times the number of online searches as non-parents (Rost, Johnsmeyer, & Mooney, 2014). This is good news, since digital inequalities among parents may have negative implications for families, limiting the access to online support from the early parenting stage. However, in spite of the increased opportunities for online support for parents, little is known about how parents are able to take advantage of what is on offer. And yet, what parents actually do with technology is just as important as having access to it. Several authors refer to differences in Web proficiency as a "new" or "second" digital divide, to differentiate it from the "first" digital divide that refers to Internet access (Attewell, 2001; Hargittai, 2002; Van Dijk, 2003). The present study explores the existence

of a digital skill divide in Internet use for parenting purposes, examining the extent to which socio-demographic variables and level of Internet experience modulate the parental proficiency in using the Internet. These two sources of influences may not be related to each other, revealing a more detailed view of the respective influences shaping parental online activities.

Impact of socio-demographic variables

Researchers have considered the association of several socio-demographic variables, including parental age, gender, education and socio-economic status, with online activities. Previous studies point out that parents make use of parenting support in transitional periods, especially the first pregnancy and infant-periods (Daneback & Plantin, 2008; Nieuwboer, Fukkink, & Hermanns, 2013; Plantin & Daneback, 2009). Other studies have noted the tendency of young adults to rely on quick superficial information found on search engines such as Google compared to older adults who tend to conduct more in-depth online searches (Nicholas, Rowlands, Clark, & Williams, 2011). With respect to parental gender, women have been found to search more for health information than men (Stern, Cotten, & Drentea, 2011). Parental engagement in online exchanges was higher for mothers than for fathers, probably because most websites only focus on pregnancy/childbirth and early childhood development and as such are more akin to mothers' interests (Fletcher & St. George, 2011; Hall & Irvine, 2008; Madge & O'Connor, 2006; Nieuwboer *et al.*, 2013). In turn, highly-educated parents were more active than low-educated parents in searching for educational issues on the Internet (Dworkin *et al.*, 2013; Radey & Randolph, 2009; Rothbaum, Martland & Janssen, 2008; Zickuhr & Smith, 2012). Parents with a higher socioeconomic status (SES) are more skillful in looking for relevant information, more able to identify which online information is relevant and trustworthy, and more likely to reject unreliable sources than low SES parents (Rothbaum *et al.*, 2008).

Impact of experience in Internet use

Although the Internet is already established as a communication tool in our lives, it requires an appropriate social and technological environment to take full advantage of its possibilities (Hargittai, 2011; Jung, 2008). Therefore, parents who are more experienced in getting help online and communicating very frequently and for longer periods could be more capable in using the Internet efficiently for parenting purposes. Parents who reported feeling comfortable with technology tended to use the Internet frequently and that would help them to profit more from the online activities (Walker, Dworkin, & Connell, 2011). In a recent study, comfort with technology has emerged as a more salient predictor of frequency of information-seeking activities and frequency of parents' online social activities than SES and age (Doty *et al.*, 2012). However, direct evidence showing

how experience and familiarity with daily Internet use shape the parents' online activities is still lacking.

Aims of the present study

The present study aims to examine the parental proficiency in using the Internet for parenting purposes, addressing the following aspects: the child-rearing content parents are searching for, how skillful they feel in conducting these searches, the criteria used in evaluating the validity of content accessed on the Web, and the extent to which they are satisfied with the results obtained. Researches has emphasized that the content and amount of parental online activities can constitute a source of inequalities among families by either facilitating or limiting the parenting information available (Doty, Dworkin, & Connell, 2012; Hargittai, 2010; Martin & Robinson, 2007; Warschauer, 2008). However, less is known about the sources of inequalities among families with weak parenting skills related to conducting Internet searches or with poor criteria to evaluate the validity of the information accessed. Some parents are not skillful enough in using the Internet to reject unreliable information, since they are unaware that it could be biased or misleading, while other parents are reluctant to trust what they find on the Web (Rothbaum *et al.*, 2008). Parents may also differ in their confidence in a source or their satisfaction with the result of their searches (Baker, Devitt, Lynch, Green, Byrne & Kiely, 2012; Bernhardt & Felter, 2004; Carter, 2007; Hand, Mc Dowell, Glynn, Rowley & Mortell, 2013).

The main aim of the study was to identify factors indicating the existence of a digital skill divide in parental proficiency. Thus, parents' age, gender, educational level and economic status as well as their level of Internet experience were expected to have an influence on parental proficiency in the use of the Internet for parenting purposes. Moreover, we would expect that the socioeconomic background would play a role in the content accessed and perceived skills for going online. For instance, level of education influences parents' knowledge, beliefs, values, and goals about childrearing that influence parental behaviors, which in turn may guide the online activities (Rochette & Bernie, 2014). In turn, level of experience in the Internet may play a role in technical aspects such as searching practices, validating criteria and satisfaction with the results.

The study may also contribute to knowing more about online parenting activities in a broader international context, involving countries such as Spain. According to the Instituto Nacional de Estadística ("National Institute of Statistics") the use of the Internet in Spanish homes in 2014 was 74.4%, similar to other central and southern European countries (INE, 2014). There is also a growing body of online resources promoting positive parenting in Spain. For instance, the website <http://educarenpositivo.es> offers information and interactive learning materials,

providing parents with a space for reflection on how to improve their parenting skills (Torres, Suárez, Álvarez, Padilla, Rodríguez & Rodrigo, 2014). However, the Spanish family has been characterized by strong bonds of affection and a supportive role in caring for young members (Delgado, Meil & Zamora López, 2008). Therefore, the weakening of close support networks that has served as an impetus for parents to go online for information and support (Plantin & Daneback, 2009) could be less pronounced in Spain, potentially making this country an interesting showcase for exploring this issue. In sum, the results of this study could be used to identify the parents' conditions associated with more active searching for child-rearing issues and perceived skill as well as to avoid the parental access to unbiased and trustworthy online information regarding child development and education, health and family life.

Methods

Participants and Recruitment

This research was approved by the Ethical Committee of University of La Laguna (Spain). Participants were 234 Spanish parents (67.5% mothers and 32.5% fathers). Each mother or father was from a different family, to avoid possible interference while responding to the survey. Participants were aged from 25 to 62 years old and they were placed into three age groups: 25-38 years old, $M = 35.03$, $SD = 2.92$ (35.9%), 39-45 years old, $M = 41.53$, $SD = 1.81$ (39.7%), and 46-62 years old, $M = 48.53$, $SD = 3.45$ (24.4%). Three educational levels were defined: low (24.4%, Primary and Secondary Education), middle (43.1%, High school, Vocational Training, Diploma programs) and high (32.5%, University degree, Master, Ph.D.). We used employment status and professional level as proxies for economic status. Two types of employment status were used: employed (73.9%) and unemployed (26.1%); and three professional levels (Spanish Instituto Nacional de Estadística, 2011): low (21%, unskilled workers, agricultural workers, service workers and elementary occupations), middle (51.6%, accounting, employees of administrations, teachers and professional technical support) and high (26.2%, scientists, managers and business people). The three age ranges established for participants' children were: early childhood from 0 to 5 years old (21.4%), middle childhood from 6 to 12 years old (52.1%) and adolescence from 13 to 18 years old (26.5%). Of the children, 51.7% were girls and 48.3% were boys. Parents provided age and gender information for each of their children. Finally, with regard to Internet experience, parents were placed in three groups: low (28.2%), middle (30.8%) and high (41%) (*See next Section*).

Parents were recruited through notices in day care centers, schools and parents' associations. Those interested in participating contacted us by email and were

informed on the existence, among other Web resources, of the Spanish positive parenting website *educarenpositivo.es* and were advised to visit it. Upon final acceptance, participants received the link to the survey by email and were asked to complete it using online survey software (SurveyMonkey).

Survey Measures

The survey included 31 forced-choice questions in a check-list format, designed to gather data regarding parental proficiency in using the Internet. Questions were designed for this study, with the exception of those on search practices, evaluation criteria and satisfaction that were adapted from the study carried out in the USA by Rothbaum, Martland & Jannsen (2008) with 120 parents to facilitate comparability with this previous study.

- a) *Socio-demographic data* (7 items): parental gender and age, educational level, employment status, professional level, gender and age of children.
- b) *Internet experience* (3 items): How many years ago did you start using the Internet? (scale of 1-5): (1) Less than 1 year ago; (2) 1-2 years ago; (3) 3-4 years ago; (4) 5 years ago; (5) 5-10 years ago. How often do you go online? (scale of 1-5): (1) At least once a month; (2) Once or twice a month; (3) Three or four times a month; (4) Once or twice a week; (5) Three or four times a week or more. How long do you spend online each time? (scale of 1-5): (1) Less than 30 minutes; (2) 30-60 minutes; (3) from 1 to 2 hours; (4) More than 2 hours; (5) Most of the day. Overall mean rating was calculated for the Internet experience measure. The sample was divided into three groups with means calculated for each third: low ($M = 2.87$, $SD = .29$), medium ($M = 3.5$, $SD = 0.20$) and high level ($M = 4.2$, $SD = 0.10$) of experience with the Internet.
- c) *Content sought about child-rearing issues* (7 items): play activities, child development, family leisure, behavioral problems, educational tips, school information, family health), scored 0-1 in all the questions (participants were requested to indicate all applicable answers throughout the survey).
- d) *Parental Internet skills* (2 items): A comparison with the child was made to facilitate the parents' self-evaluation: a) who is more skillful searching on the Internet, you or your child, and b) who derives more personal benefit from searching on the Internet, you or your child, scored 0-1 in both questions.
- e) *Search practices* (6 items). Refer to how participants seek information online: a) the parents' preferred search engine (Google, Yahoo, Bling); b) why it is preferred (find relevant information with it, use it by default); c) result of a search (I can hardly find relevant information, find information

quickly, I am getting bored and leave); d) features of the ideal search engine (the ease of searching, search speed and the amount of information retrieved); e) sources of frustration when searching (irrelevance of the search results, the time that has to be spent on it, and the fact that too much information is retrieved); and f) how they learn about new websites (find it by browsing, links from other websites, friends, colleagues, relatives, and publications in digital newspapers), scored 0-1 in all the questions.

f) *Evaluation criteria* (3 items): Refer to the means by which participants judge the quality and credibility of the sites they visit: a) participants' level of confidence in websites (the response scale ranged from not confident at all (1) to very confident (5); b) criteria for the trustworthiness of the information contained: (I value the organization that placed the information, I value the professional expertise, I value my familiarity with the contents, I value information coinciding with my own view); and c) reasons for the usefulness of the information (relevance per se, practical use, answer my questions), scored 0-1 in the last two questions.

g) *Satisfaction* (3 items): Refers to how pleased or frustrated participants are with the results of their searches: a) satisfaction with search results (ranging from not satisfied (1) to fully satisfied (5)), b) satisfaction with usefulness of results (ranging from not useful at all (1) to very useful (5), and c) satisfaction with language adequacy of content (use of colloquial, technical or vulgar language), scored 0-1 in the last question.

Data analyses

For each question, chi-square analyses were conducted with parental age, gender, level of education, employment status and professional level, and age and gender of the child as socio-demographic variables and the level of Internet experience. We used the corrected typified residuals (r_z) to further explore the statistically significant differences in the contingency tables (Haberman, 1973). This procedure allowed us to identify the particular cells in which the z scores were greater than +1.96 or less than -1.96. A positive z score means that the cell frequency is greater than would be expected by chance, whereas a negative score means that the cell frequency is lower than expected. One-way ANOVAS were used when necessary. The statistic R^2 was used as an indicator of effect size (ES), which is considered negligible when $R^2 < .01$, small when $R^2 > .01$ and $R^2 < .09$, medium when $R^2 > .09$ and $R^2 < .25$, and large when $R^2 > .25$ (Cohen, 1988).

Results

Socio-demographic variables were not significantly related to level of Internet experience with the exception of parental age ($\chi^2 = 15.20, p < .01$). Younger parents were overrepresented in the low level of Internet experience and underrepresented in the high level of Internet experience, and the reverse was true for older parents (who reported more years of Internet use, more frequent use and longer periods for each connection). Therefore, we reported separately results with socio-demographic measures (*Table 1* and *Table 2*) and results with level of Internet experience (*Table 3*).

Influence of socio-demographic variables

Parental education, parental gender and age had an influence on the main aspects of parental proficiency surveyed. Concerning online educational activities, results show that 63.2% of participants sought information about the children's school, 43.6% searched for child-rearing tips, 36.8% conducted searches related to family leisure, 32.1% looked for information on child development, 31.2% searched for family health information, 30.3% searched for play activities, and 23.9% sought information about children's behavioral problems. *Table 1* presents results on the parental activity broken down by parents' gender and educational level. Mothers searched more for information about child development, children's behavioral problems and child-rearing tips than fathers, and they looked for a greater amount of child-rearing activities than fathers, with medium ES ($R^2 = .15$). Parents in the middle educational level searched more for play activities than parents with high or low educational levels. Also, parents with a high educational level searched more for information about child development, family leisure activities and child behavioral problems than parents with a low and middle educational level. No significant results were found for school information and family health, indicating that both topics were very popular for all sample.

With regard to how skillful parents are with respect to their children, results showed that 18.7% of parents reported that their children browsed the Web more skillfully than they do. Parental gender ($\chi^2 = 12.15, p < .001$) modulated these perceptions. In particular, mothers thought their children browse the Web more easily than they did ($r_z = 8.5$), whereas this opinion was seldom typical of fathers ($r_z = -8.5$). The majority of parents reported being benefited more from the use of the Internet than their children (54.4%). However, parental gender ($\chi^2 = 5.9, p < .05$) and educational level ($\chi^2 = 8.55, p < .05$) modulated this perception. Fathers reported that they benefited more from Internet use than their children ($r_z = 7.5$), whereas mothers seldom held this opinion ($r_z = -7.5$). Parents with a high educational level thought that they benefited more from the Internet than their children ($r_z = 8.4$), than parents with a middle ($r_z = -3.8$) or low educational level ($r_z = -4.7$).

Table 1. Web Searches for Child-rearing Issues, by Parental Gender and Educational Level.

		Gender			Educational level			
		Mother	Father		High	Middle	Low	
Play activities	% $\chi^2(1)$	31	28.9	0.104	23.7	39.6	22.8	7.22*
	Typified residuals	0.3	-0.3		2.6	-0.8	-1.9	
Child development	% $\chi^2(1)$	36.7	22.4	4.84*	42.1	30.7	21.1	6.77*
	Typified residuals	2.2	-2.2		2.3	-0.4	-2.0	
Family leisure	% $\chi^2(1)$	35.4	39.5	0.359	47.4	35.6	24.6	7.38*
	Typified residuals	-0.6	0.6		2.3	-0.2	-2.2	
Behavioral problems	% $\chi^2(1)$	29.1	13.2	7.17**	30.3	18.8	24.6	4.14*
	Typified residuals	2.7	-2.7		1.9	-1.9	0.1	
Tips	% $\chi^2(1)$	49.4	31.6	6.60**	42.1	39.6	52.6	2.61
	Typified residuals	2.6	-2.6		-0.3	-1.1	1.6	
School information	% $\chi^2(1)$	42.7	20.5	1.00	14.5	26.5	22.2	1.34
	Typified residuals	0.0	0.0		-0.6	.05	1.1	
Family health	% $\chi^2(1)$	22.6	8.5	1.24	6.4	13.7	11.1	0.96
	Typified residuals	1.1	-1.1		-0.9	0.1	0.7	
Amount of activities	M (SD) F(232)	2.84 (1.54)	2.36 (1.37)	5.32**	3.05 (1.46)	2.9 (1.38)	2.7 (1.26)	0.86

Note: * $p \leq .05$; ** $p \leq 01$.

When asked about search engine preferences, 100% of parents surveyed answered that they prefer Google. Young parents used Google more as a default search engine, whereas older parents used Google more because they say it finds relevant information (Table 2). With respect to the result of a search, 56.5% said they find information quickly, 42.3% said they can hardly find relevant information, and 1.2% get bored and leave. With respect to the ideal features of a search engine, 70.7% of parents valued the ease of searching, 20% the search speed and 9.3% the amount of information retrieved. The most frustrating aspects of searching were related to the irrelevance of the search results (58%), the time that has to be spent on it (26.3%), and the fact that too much information is retrieved (15.7%).

When asked about how they find new websites, participants indicated that they find them by browsing (28.4%), via links from other websites (22%), friends (21.6%), colleagues (10.1%), relatives (9.2%), and publications in digital newspapers (8.7%). Mothers found new websites by browsing, whereas fathers used links from other websites (Table 2). Also, young parents found a new website

through friends and in digital newspaper whereas older parents found websites by browsing and from other websites. Finally, parents in the low and middle education groups found new websites through friends, whereas highly-educated parents found them through advertising in digital newspapers.

When asked about how they evaluated the trustworthiness of websites the overall confidence level was above the mean ($M = 3.86$, $SD = .60$). Results are presented in Table 2. Parental age modulated the level of confidence, which increased with age, with large ES ($R^2 = .28$). For 61.1% of parents the trustworthiness of the sites depended on the organization that is placing the information on the Web, 18.2% used as a criterion their own familiarity with the topic, 16.2% looked at the professional expertise of the site's authors, and 4.5% relied on the degree to which the information coincides with their own views.

When asked why they would consider information as reliable, 64.8% said they consider information to be reliable when it answers their questions, 15.3% said because it is practical, and 10.2% said because it is relevant *per se*. Parents with a high educational level stated more often that they consider information to be reliable because it is relevant, whereas parents with a low and middle educational level reported that the information is considered to be reliable when it answers their questions.

Satisfaction significantly increased with the parents' age, with medium ES ($R^2 = .21$), with younger parents being less satisfied than older parents (Table 2). Parental educational level moderated satisfaction with the usefulness of the information they find on the Internet, with medium ES ($R^2 = .19$), with perception of usefulness lowered in parents with a high educational level with respect to those with low educational level. With respect to the language of the contents, 82.5% of parents found the language of the contents colloquial and easy to understand, 17% found it technical and 0.5% found it vulgar.

Influence of Level of Experience in Internet Use

Level of experience influenced on searching practices and satisfaction with the results (Table 3). When was asked why Google was their search engine of choice, parents with low-level experience reported that it was by default, whereas high-level experienced parents reported that it was because it provided relevant information, with medium ES ($R^2 = .23$). Also, parents with low-level experience reported that they found a new website through friends and digital newspapers, whereas parents with middle-level and high-level experience found websites by other websites and by browsing, with high ES ($R^2 = .40$). Finally, satisfaction with the results significantly increased with the level of Internet experience, with medium ES ($R^2 = .15$), with less experienced parents being less satisfied than middle ($p < .01$) and highly experienced parents ($p < .001$), with a small ES ($R^2 = .06$).

Table 2. Search Practices, Evaluation Websites and Satisfaction with Search Results by Parental age, Parental gender and Parental Educational level.

	Parental gender		Parental age			Educational level			χ^2 1/F(232)
	Mother	Father	25 to 38	39 to 45	46 to 62	Low	Middle	High	
Search Practices									
Google by default	% (r _i) 18.1(0.2)	15.5(-.4)	24.1(5.4)	19.8(2.1)	3.6(-7.3)	13(-.8)	19.6(0.5)	17.6(0.1)	
Information relevant	% (r _i) 60.4(0.2)	56.3(-.3)	12.7(-.4)	23.3(-1.8)	40.0(5.8)	18.96***	29.6(0.9)	21.7(-.4)	21.6(-.4)
Find a new Website by chance	% (r _i) 32.4(5.9)	5.7(-5.9)	28.6(0.1)	25.3(-2.7)	33.3(2.6)		5.9(-.7)	2.2(-2.1)	18.7(-2.9)
Find from other Websites	% (r _i) 16.9(-7.6)	32.9(7.6)	6.5(-2.9)	24.1(0.4)	40.7(2.9)		23.5(0.2)	19.6(-.5)	24.0(0.4)
Find through friends	% (r _i) 23(0.4)	18.6(-.4)	26(3.4)	24.1(2.4)	11.1(-5.6)		27.5(3)	23.9(2.2)	14(-5.2)
Find by digital newspaper	% (r _i) 10.1(0.6)	5.7(-.9)	11.7(2.3)	10.3(1.4)	1.9(-3.7)	30.17**	5.9(-1.4)	2.2(-.6)	40.9(7.5)
Evaluation of Websites									
Level of confidence	M(SD) 3.38(.86)	3.37(.93)	3.08(.99)	3.46(.81)	3.68(.67)	8.22***	3.42(.80)	3.51(.84)	3.20(.96)
Info relevant per se	% (r _i) 10.3(-.3)	13.2(0.5)	9.2(-.5)	13.1(0.5)	11.3(0.0)		7.5(-1.3)	5.8(-4.7)	20.3(6.3)
Info answers their questions	% (r _i) 76.3(0.5)	67.9(-.4)	76.3(0.5)	67.9(-.4)	71.7(0)	1.42	79.2(3.9)	76.7(4.2)	60.8(-8.2)
Satisfaction with Results									
Satisfaction	M(SD) 3.03(.64)	3.05(.87)	3.67(.71)	3.87(.58)	4.04(.47)	4.85**	3.02(.72)	3.05(.78)	3.04(.65)
Usefulness	M(SD) 3.81(.68)	3.91(.68)	2.96(.68)	3.02(.74)	3.15(.73)	1.07	3.91(.62)	3.95(.58)	3.66(.78)
									4.11*

Note: * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$; Typified residuals (r_i)

Table 3. Search Practices and Search Results by Level of Internet Experience.

		Level of Internet Experience			$X^2 / F(232)$
		Low	Middle	High	
Search Practices					
Google by default	% (r_z)	18.7(1.9)	24.7(0.7)	28(-1.8)	
Information relevant	% (r_z)	4.9 (-1.3)	8.2(-0.7)	15.4(1.9)	13.43**
Find website by browsing	% (r_z)	3.7(-3.1)	9.6(1.9)	15.1(2.2)	
Find from other websites	% (r_z)	2.8(-2.7)	9.2(1.9)	10.1(2.7)	
Find through friends	% (r_z)	8.3(1.9)	4.6(-1.5)	8.7(-0.2)	
Find by digital newspaper	% (r_z)	4.6(2.5)	3.2(0.7)	0.9(-2.9)	36.33***
Search Results					
Satisfaction	M(SD)	3.02(1.0)	3.48(0.86)	3.55(0.74)	7.24***
Usefulness	M(SD)	3.70(0.78)	3.98(0.59)	3.83(0.64)	2.79

Note: ** $p \leq 01$; *** $p \leq .001$; Typified residuals (r_z)

Discussion

The present study examined how parents use the Internet to get help with their parenting task by addressing several aspects: child-rearing contents explored, search practices, evaluation criteria, and satisfaction with search results, as well as associated socio-demographic factors and level of experience in Internet use. Overall, parents with children at every age group actively searched for a wide variety of topics primarily including health and college planning (Rost *et al.*, 2014), and also topics related to child-rearing tips, family leisure, normative child development, play activities and child behavioral problems (Bernhardt & Felter, 2004). However, results showed a wide skill divide in our sample (Attewell, 2001; Hargittai, 2002; Van Dijk, 2003). Nearly half of our sample (42%) declared that they can hardly find relevant information when searching on the Internet and 1.2% get bored and leave, suggesting that there is a great need for learning more efficient methods of searching and validating information. The differences were more salient by parental educational level than by employment status and professional level, whereas other studies showed an overall impact of parental SES on Internet use and proficiency (e.g., Dworkin *et al.*, 2013; Rothbaum *et al.*, 2008). In our study, more highly educated parents, as compared to middle and low educated parents, searched more for information about different child-rearing topics, use advertising in digital newspapers to find new websites and considered themselves to be more experienced in using the Internet and felt that they accrue more benefits from Internet use than their children. More highly educated parents seem to follow knowledge-based criteria in the evaluation of websites, whereas less educated parents followed pragmatic-based criteria. Thus, highly-educate

parents considered the relevance of the information *per se* and not because it answers their questions and they reported being more critical about the usefulness of the information.

Our results show that parental gender is another factor to consider when analyzing the digital skill divide. Mother as compared to fathers felt more skillful and experienced and thought that they obtain fewer benefits from the Internet than their children. Mothers found new pages by browsing whereas fathers found a new websites using links from other pages. However, from a practical standpoint, mothers were more active in searching for educational information and, in general, they searched the Internet for more types of educational topics (Doty *et al.*, 2012; Sarkadi & Bremberg, 2005; Stern *et al.*, 2011). In fact, most of the parents posting on parenting discussion boards are mothers (Brady & Guerin, 2010; Madge & O'Connor, 2006). In a previous study about the parents' regulation of their child's Internet use, parents reported that it is the mother who decided most often what the children are to see on the Internet, suggesting that the mother is still considered as being more responsible for child-rearing matters in this new socialization area (Álvarez, Torres, Rodríguez, Padilla, & Rodrigo, 2013). However, it could be the case that fathers are not totally disengaged from the parenting task but rather are more interested in the technological aspects of the support and assist mothers in that regard (Hart, Bober, & Pine, 2008). More research is needed to ascertain the specific role played by fathers in looking for online educational support and the best ways to motivate them.

Parental and child age, two variables that are related, also contribute to the digital skill divide. Older parents reported using Google more because it helps them find significant and relevant information, as compared to younger parents who consider it as the default as they live in the Google era (Nicholas *et al.*, 2011). Likewise, young parents reported relying on friends in exchanging useful information and using digital newspapers more than older parents. Confidence in the quality of the information obtained and satisfaction with the results increased with age, suggesting that older parents were more willing to accept the results of a search. The age differences in parental proficiency may reflect the digital generation gap that provides different social and technological contexts to each generation (Radey & Randolph, 2009; Walter, Dworkin, & Connell, 2011). As in previous studies (e.g., Baker *et al.*, 2012; Hand *et al.*, 2013), overall parents' confidence in a source mainly depended on the organization that is placing the information on the Web, with more subjective appraisals of the information (e.g., their own familiarity with the topic) relegated to second place.

Level of experience played a more limited role in shaping parental proficiency in Internet use. It is not related to the content sought, perceived skills or the criteria to evaluate webpages, but mainly to the searching practices and the satisfaction with the results. Therefore, in our sample the appropriate exposure to a technological environment did not guarantee that parents would become more active in seeking for online support, as was obtained in previous studies (Walker

et al., 2011; Doty *et al.*, 2012). Moreover, highly experienced parents did not feel more skillful navigating the Internet or report improved quality of the contents searched. These aspects seem to be more dependent on the general educational background acquired during their academic years and the gender role assumed as fathers and mothers.

There are some limitations to consider in this study. Although parents were recruited through notices in day care centers, schools and parents' associations, it is difficult to know if they were already online as they had to email the researchers to sign up for the study or became motivated to go online as they were invited to visit our website "*educarenpositivo.es*" upon acceptance. More generalizable results would have been obtained by better representing low-educated and low-income populations of vulnerable families. Finally, the study was cross-sectional and therefore causality could not be determined.

In sum, as expected parental education, gender and age played a relevant role in the content accessed and parents' perceived skills for going online. However, parental age and education also shaped technical abilities such as searching practices (also gender), criteria for evaluating websites (level of confidence and relevance), and satisfaction with search results. In turn, level of experience in Internet use only shaped technical aspects such as searching practices and satisfaction with the results. These findings suggest that complex processes accompany differences in parental proficiency, leading to some guidelines to improve parental Internet skills that are described in the next section.

Conclusions

There are many ways in which information and communication technologies can impact positively on family life. Using the Internet as a tool to assist parenting is one that has remained relatively understudied. This is especially true for Spain since this is the first study performed on this matter, following the initiative of the Council of Europe that recommends the use of Internet to support positive parenting. Spain is a country with strong supportive role of the extensive family on child-rearing issues, which may have diminished the impetus of parents for going online to seek parenting support. Our results show that this is not the case since parents in our sample were very active in seeking for parenting support. However, there is a wide digital skill divide in terms of parental proficiency in Internet use. Empowering tools and opportunities are available for parents once they are connected to the Internet. But it is important that parents as individuals may have the technical and personal capacities to take advantage of these opportunities. Among these technical capacities is the ability to conduct more effective searches, find better-quality sites and evaluate more properly the searching results. In turn, parents' perceived skills and personal confidence in their technical abilities should also increase accordingly.

As expected, parents with a low educational level are at a greater risk of not finding valuable online support. Therefore, they are losing out on opportunities to learn more positive child-rearing practices and overcome their odds of having children with poorer behavioral and educational outcomes (Davis-Kean, 2005; Dearing *et al.*, 2001; Nagin *et al.*, 2001). Hence, more training efforts should be made in online parenting programs to help these parents improve their technical and personal capacities to access higher quality, reliable educational content. Parental experience in Internet use also helps, since more experienced parents were more able to manage some technical skills. Concerning gender, mothers in general are very interested in searching for information on child-rearing issues but are at a greater risk of feeling less technically prepared to do it better. Fathers are in precisely the opposite situation, as they feel more experienced and more confident in technical matters but are less active in searching for educational content. This finding reveals the subtle introduction of a gender bias into this seemingly socially unbiased medium. It also corroborates the idea that the required shift in gender, knowledge, and power hierarchies is not automatically achieved by the introduction of new media tools and technologies (McQuillan & Neill, 2009). Accordingly, a differential training effort should be undertaken when helping mothers and fathers to use the Internet more productively as an educational support.

In addition, website designers and online service providers must be aware that new family-related content should be included if they want to attract a wider audience of parents. Reproductive and health-related topics, mainly targeting new mothers, have been over represented on the Internet, probably because they are in more demand (Bouche & Migeot, 2008; Nieuwboer *et al.*, 2013; Plantin *et al.*, 2009). However, new topics also merit a wider presence – covering, for instance, how fatherhood impacts child development, how to select good schools, how to promote online family-school communication, how to strike a work-life balance, how to select family leisure activities that will contribute positively to child development, how to successfully incorporate the Internet into family life, among others. This inclusion would increase the chances that both mothers and fathers will be incorporated into the mainstream of consumers of educational content on the Internet. We are aware that more research is needed on how the Internet can be used as a tool to assist parents. Future research should investigate the quality of web resources and the extent to which using these resources is effective in supporting positive parenting, even in vulnerable families. Nevertheless, the present findings are relevant in that they place an emphasis on promoting parental proficiency in the use of online parenting resources, informing initiatives of Internet literacy training applied differentially for fathers and mothers with low education and low Internet experience levels and helping to improve the educational resources for parents on the Internet.

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References

- Álvarez, M., Torres, A., Rodríguez, E., Padilla, S., & Rodrigo, M.J. (2013). Attitudes and parenting dimensions in parents' regulation of Internet use by primary and secondary school children. *Computers & Education*, 67(C), 69–78.
- Attewell, P. (2001). The First and Second Digital Divides. *Sociology of Education*, 74(3), 252-59.
- Baker, J. F., Devitt, B. M., Lynch, S., Green, C. J., Byrne, D. P., & Kiely, P. J. (2012). Internet use by parents of children attending a dedicated scoliosis outpatient clinic. *European Spine Journal*, 21(10), 1972-1977.
- Bernhardt, J. M., & Felter, E. M. (2004). Online pediatric information seeking among mothers of young children: results from a qualitative study using focus groups. *Journal of Medical Internet Research*, 6(1), e7.
- Bianco, A., Zucco, R., Nobile, C. G. A., Pileggi, C., & Pavia, M. (2013). Parents seeking health-related information on the Internet: cross-sectional study. *Journal of Medical Internet Research*, 15(9), e204.
- Brady, E., & Guerin, S. (2010). “Not the romantic, all happy, coochy coo experience”: A qualitative analysis of interactions on an Irish parenting web site. *Family relations*, 59(1), 14-27.
- Bouche, G., & Migeot, V. (2008). Parental use of the Internet to seek health information and primary care utilization for their child: a cross-sectional study. *BMC Public Health*, 8(1), 1-9.
- Carter, B. (2007). Parenting: a glut of information. *Journal of Child Health Care*, 11(2), 82-84.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Hillsdale, NJ: Lawrence Erlbaum.
- Council of Europe (2006), *Recommendation 19 of the Committee of Ministers to Member States on policy to support positive parenting*. Strassbourg. Retrieved from <https://wcd.coe.int/ViewDoc.jsp?id=1073507>
- Daneback, K. y Platin, L. (2008). Research on Parenthood and the Internet: themes and trends. *Ciberpsychology: Journal of Psychosocial Research on Cyberspace*, 2, article 2. Retrieved from <http://cyberpsychology.eu/view.php?cisloclanku=2008110701 &article=2>
- Davis-Kean, P. E. (2005). The influence of parent education and family income on child achievement: the indirect role of parental expectations and the home environment. *Journal of Family Psychology*, 19(2), 294-304.
- Dearing, E., McCartney, K., & Taylor, B. A. (2001). Change in family income needs matters more for children with less. *Child Development*, 72(6), 1779-1793.

- Delgado, M., Meil, G., & Zamora López, F. (2008). Spain: Short on children and short on family policies. *Demographic Research*, 19, 1059-1104.
- Doty, J. L., Dworkin, J., & Connell, J. H. (2012). Examining digital differences: Parents' online activities. *Family Science Review*, 17(2), 18-39.
- Drenea, P., & Moren-Cross, J. L. (2005). Social capital and social support on the web: the case of an Internet mother site. *Sociology of health & illness*, 27(7), 920-943.
- Dworkin, J., Connell, J., & Doty, J. (2013). A literature review of parents' online behavior. *Cyberpsychology: Journal of Psychological Research on Cyberspace*, 7(2), 2. Retrieved from <http://www.cyberpsychology.eu/view.php?cisloclanku=2013052301&article=1>
- Ebata, A.T., & Dennis, S.A. (2011). Family life education on the technological frontier. *Family life education: Principles and practices for effective outreach*. 236-262.
- EU Commission (2008). *Eurobarometer: Towards a safer use of the Internet for children in the EU-a parent's perspective*. Brussels. Retrieved from http://ec.europa.eu/public_opinion/flash/fl_248_en.pdf
- EU Commission (2014). *Eurobarometer: E-communications and Telecom Single Market Household Survey*. Brussels. Retrieved from <https://ec.europa.eu/digital-agenda/en/news/special-eurobarometer-414-e-communications-household-survey>
- Haberman, S. J. (1973). The analysis of residuals in cross-classified tables. *Biometrics*, 29(1), 205-220.
- Hand, F., Mc Dowell, D. T., Glynn, R. W., Rowley, H., & Mortell, A. (2013). Patterns of internet use by parents of children attending a pediatric surgical service. *Pediatric Surgery International*, 29(7) 1-5.
- Hargittai, E. (2002). Second-level digital divide: Differences in people's online skills. *First Monday*, 7(4). Retrieved from <http://firstmonday.org/ojs/index.php/fm/article/view/942>
- Hargittai, E. (2010). Digital Na (t) ives? Variation in Internet skills and uses among members of the "Net Generation". *Sociological inquiry*, 80(1), 92-113.
- Hart, R., Bober, M., & Pine, K. (2008). *Learning in the family: Parental engagement in children's learning with technology*. Bakewell: Intuitive Media Research Services.
- Instituto Nacional de Estadística (2011). *Clasificación Nacional de Ocupaciones. (CNO-11)*. Retrieved from http://www.ine.es/daco/daco42/clasificaciones/nota_epa_cno-11.pdf
- Instituto Nacional de Estadística (2014). *Encuesta sobre Equipamiento y Uso de Tecnologías de Información y Comunicación en los Hogares*. Retrieved from <http://www.ine.es/prensa/np864.pdf>
- Jung, J. J. (2008). Ontology-based context synchronization for ad hoc social collaborations. *Knowledge-Based Systems*, 7(21), 573-580.
- Kind, T., Huang, Z. J., Farr, D., & Pomerantz, K. L. (2005). Internet and computer access and use for health information in an underserved community. *Ambulatory Pediatrics*, 5(2), 117-121.
- LaMendola, W., & Krysik, J. (2008). Design imperatives to enhance evidence-based interventions with persuasive technology: A case scenario in preventing child maltreatment. *Journal of Technology in Human Services*, 26(2-4), 397-422.
- Linebarger, D. L., & Chernin, A. R. (2003). Young children, parents, computers, and the Internet. *IT & Society*, 1(4), 87-106.

- Liu, Z. (2004). Perceptions of credibility of scholarly information on the web. *Information Processing and Management*, 40(6), 1027-1038.
- Madge, C., & O'connor, H. (2006). Parenting gone wired: empowerment of new mothers on the internet?. *Social & Cultural Geography*, 7(02), 199-220.
- Martin, S. P., & Robinson, J. P. (2007). The income digital divide: Trends and predictions for levels of Internet use. *Social problems*, 54(1), 1-22.
- McDaniel, B. T., Coyne, S. M., & Holmes, E. K. (2012). New mothers and media use: Associations between blogging, social networking, and maternal well-being. *Maternal and child health journal*, 16(7), 1509-1517.
- McQuillan, H., & Neill, B. O. (2009). Gender differences in children's internet use: Key findings from Europe. *Journal of Children and Media*, 3(4), 366-378.
- Myers-Walls, J.A. & Dworkin, J. (2015) Parenting education without borders. Web-based Outreach. In, Ponzetti, J.J. (eds.). *Evidence-based Parenting Education. A global perspective*. (pp 123-139) New York: Routledge.
- Nagin, D. S., & Tremblay, R. E. (2001). Parental and early childhood predictors of persistent physical aggression in boys from kindergarten to high school. *Archives of general psychiatry*, 58(4), 389-394.
- National Telecommunications and Information Administration. (2011). *Digital nation: Expanding Internet usage*. Washington, DC. Retrieved from https://www.ntia.doc.gov/files/ntia/publications/ntia_internet_use_report_february_2011.pdf
- Nicholas, D., Rowlands, I., Clark, D., & Williams, P. (2011). Google generation II: Web behaviour experiments with the BBC. Paper presented at the *Aslib Proceedings*, 63(1) 28-45.
- Nieuwboer, C. C., Fukkink, R. G., & Hermanns, J. (2013). Online programs as tools to improve parenting: A meta-analytic review. *Children and Youth Services Review*, 35(11), 1823-1829.
- Plantin, L. & Daneback, K. (2009) Parenthood, information and support on Internet. A literature review of research on parents and professional online. *BCM Family Practise*, 10(1), 1-12.
- Radey, M., & Randolph, K. A. (2009). Parenting sources: How do parents differ in their efforts to learn about parenting? *Family Relations*, 58(5), 536-548.
- Rieh, S. Y. (2002). Judgment of information quality and cognitive authority on the web. *Journal of the American Society for Information Science and Technology*, 53(2), 145-161.
- Rochette, É., & Bernier, A. (2014). Parenting, Family Socioeconomic Status, and Child Executive Functioning: A Longitudinal Study. *Merrill-Palmer Quarterly*, 60(4), 4.
- Rodrigo, M. J. (2010). Promoting positive parenting in Europe: New challenges for the European Society of Developmental Psychology. *European Journal of Developmental Psychology*, 7(3), 281-294.
- Rodrigo, M. J., Almeida, A., & Reichle, B. (2015). Evidence-Based Parent Education Programs: A European Perspective. In J. Ponzetti (Ed). *Evidence-based Parenting Education: A Global Perspective*, (pp 85-104). New York: Routledge.
- Rost, J., Johnsmeyer, B., & Mooney, A. (2014). Diapers to diplomas: what's on the minds of new parents. *Think Insights with Google Series*. Retrieved from https://think.storage.googleapis.com/docs/new-parents_articles.pdf

- Rothbaum, F., Martland, N., & Janssen, J. B. (2008). Parents' reliance on the Web to find information about children and families: Socio-economic differences in use, skills and satisfaction. *Journal of Applied Developmental Psychology, 29*(2), 118-128.
- Sarkadi, A., & Bremberg, S. (2005). Socially unbiased parenting support on the Internet: a cross-sectional study of users of a large Swedish parenting website. *Child: Care, Health and Development, 31*(1), 43-52.
- Stern, M. J., Cotten, S. R., & Drentea, P. (2012). The Separate Spheres of Online Health: Gender, Parenting, and Online Health Information Searching in the Information Age. *Journal of Family Issues, 33*(10), 1324-1350.
- Torres, A., Suárez, A., Álvarez, M., Padilla, S., Rodríguez, E. & Rodrigo, M.J. (2014). Apoyo Parental Online. In M.J. Rodrigo, M.L. Máiquez, J.C. Martín, S. Byrne & B. Rodriguez (Eds.), *Manual Práctico en Parentalidad Positiva* (pp. 245-262). Madrid: Síntesis.
- Van Dijk, J. A. G. M. (2003). A framework for digital divide research. *Electronic Journal of Communication, 12*(1-2). Retrieved from <http://doc.utwente.nl/94688/1/Volume%2012%20Numbers%201.pdf>
- Walker, S. K., Dworkin, J., & Connell, J. H. (2011). Variation in Parent Use of Information and Communications Technology: Does Quantity Matter?. *Family & Consumer Sciences Research Journal, 40*(2), 106-119.
- Warschauer, M. (2008). Whither the digital divide? In D. L. Kleinman, K. A. Cloud-Hansen, C. Matta, & J. Handelsman (Eds.), *Controversies in Science & Technology: From Climate to Chromosomes* (pp.140-151). New Rochelle, NY: Liebert.
- Zickuhr, K., & Smith, A. (2012). *Digital differences*. Washington, DC: Pew Internet & American Life Project.