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ORIGINAL ARTICLE

Understanding children: a qualitative study on health assets of the Internet in Spain

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Abstract
Objectives This research was designed to explore the opinions held by primary school pupils about the Internet as a source of assets for health and well-being.
Methods A qualitative study was carried out based on 8 focus groups comprising 64 pupils from 8 primary schools in Spain.
Results Our findings describe the Internet as a tool for learning, communication, fun and health care. In addition, they reveal how children understand influences on health and well-being in relation to their view of the Internet. The results are discussed in terms of the public-health implications of digital literacy, as well as its connection to well-being, especially in relation to health assets.
Conclusions The Internet is an important resource for children's health and well-being, which, through learning, communication, fun and health care, encourages them to make use of it. Digital and health literacy constitutes the foundation required for browsing the Internet in a positive way, as identified by the children interviewed in this study, and especially in relation to the health assets that the Internet can contain.

Keywords Internet · Health assets · Childhood · Family · Qualitative methods · Spain

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Introduction

Information Communication Technologies (ICTs) in primary education are included in the area of action of the European Digital Agenda (European Commission 2013). The Internet has been widely introduced in schools and in the environments of childhood and adolescence and is an important resource for learning (Plowman and McPake 2013).

In Spain, 70 % of homes have Internet access (INE 2013). According to data from EU Kids Online, Spanish children are among those who show the lowest level of risk behaviour in Europe in their uses of the Internet, using the web for school work, leisure and social networks (Ólafsson et al. 2013). In Andalusia, the region of Spain that provides the context for this study, 65 % of homes have Internet access and 89 % of young people between the ages of 10 and 13 use it on a regular basis (Junta de Andalucía 2013).

The interactive nature of the Internet along with the possibility of confidential and personalised access represents part of its potential as a health resource (Borzekowski

2009). On the other hand, managing the Internet appropriately is a crucial aspect of making the most of its potential (van Deursen and van Dijk 2011). Some studies suggest that in order to be critical health-care consumers, patients must become active participants in knowledge management (Ghaddar et al. 2012).

Placing information in locations where children under the age of 18 go to find out about health promotion and prevention measures (Jiménez-Pernett et al. 2010; Norman and Skinner 2006; Hernán et al. 2004) can be crucial for promoting eHealth literacy (Paek and Hove 2012) as a set of social and cognitive skills that determine each person's ability to access, understand and use information in order to maintain good health (Gray et al. 2005).

We face a dualism between (a) the risks and (b) the assets for health and well-being (AHW) that the Internet can generate. As regards the problems posed by use of the Internet in terms of three core issues, Content/Contact/Conduct (Livingstone et al. 2011), with the emphasis on children as receivers of inappropriate Internet content, as participants in inappropriate contacts with adults via the Internet or as perpetrators or victims of peer-to-peer exchanges (Livingstone et al. 2012). Thus, we confront the need to create safe and positive environments (UNICEF 2012; Chen et al. 2008) that prevent harassment, addiction and other behaviour-related health problems (Janssen et al. 2012; Seo et al. 2009). With respect to the AHW we encounter the opportunities and advantages offered by using ICTs and the Internet (Plowman and McPake 2013; Kuntsche et al. 2009), or a set of factors capable of creating well-being in individuals, promoting interpersonal relations or benefits for the community (Morgan and Ziglio 2007). This positive current is closely connected to the salutogenic focus of health promotion (Hernán et al. 2013; Antonovsky 1996) and leads us to study how children value the Internet as a favourable environment for health and well-being, based on the AHW model (Hernán et al. 2014; Morgan et al. 2010; Scales et al. 2003). The scientific evidence indicates that children who have access to more AHWs have a better perception of health and quality of life (Lindström and Eriksson 2009). All this highlights the importance of investigating the potential of the Internet as a positive source. The objective of this study is to explore the opinions held by primary school pupils about the Internet as a source of assets for health and well-being.

Methods

A qualitative study was carried out, based on Focus Groups (FGs) held during the second and third quarters of 2012, in the region of Andalusia (Spain).

Sample

The participants were pupils aged 10 and 11 from eight primary schools (PS). The selection process was carried out by the teacher of each class, choosing a mixed group of boys and girls. In all, 64 pupils were selected (31 male and 33 female). Together they represented a non-probabilistic and intentional sample, according to theoretical sampling based on typical and homogenous cases (Patton 2002; Creswell 2012).

Inclusion criteria: the pupils came from eight classes in eight PS selected according to the following criteria: (1) they were state schools; (2) they were part of the representative sample of schools in Andalusia use for the quantitative part of the study being carried out in parallel; (3) they were within the areas of Western Andalusia or Eastern Andalusia; (4) they were from either a rural or an urban setting; (5) they were included in the regional ICT programme for schools. Taking these criteria as the starting point, the segmentation strategy shown in Fig. 1 was created.

Data collection

Each FG was recorded in its entirety and transcribed literally. These transcriptions were completed by comparing the field notes of the interviewer and the observer. The duration of each group ranged from 27 to 50 min. The FGs were led by a researcher with help from an observer, both of whom were from the research team, and who alternated roles in the different FGs. Both interviewers had previous experience of the subject-matter of the study and performed the subsequent analysis. The teachers took part in selecting the children, introduced the interviewers and explained the objective of the FG. However, they were not present while the group was being conducted. Data collection in each FG was carried out by means of a script containing the relevant questions to be explored, to the point of obtaining a redundancy of information. This allowed the saturation of the information to be verified (Strauss and Corbin 1998), in pursuit of a representation system for the social values of the discourse, specially represented by a set of ideas derived from textual communication and based on the guiding theme of the script (Table 1) and the categories of the theoretical model and the emerging model (Creswell 2012) (Fig. 2).

Analysis

An analysis of the manifest content and of the underlying meanings was carried out, which contributing to the grounded theory of this study.

The analysis units or independent texts that structured, encoded and linked the analysis categories were established.

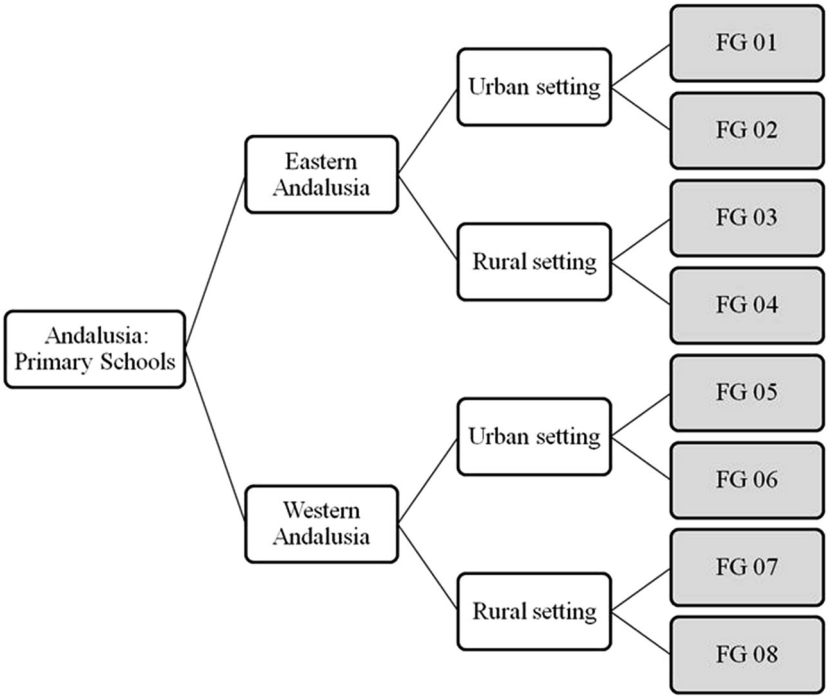

Fig. 1 Theoretical study sample. Children (10–11 years old). Spain, 2012

Table 1 Script for focus groups, Spain, 2012

What do you think about doing things on the Internet in order to feel good?
What do you think about having friends on the Internet?
What do the adults and your family think about the things you do on the Internet?
How do you think people learn about health on the Internet?
How does the Internet teach about healthy things?

The analysis was begun on the basis of the theoretical model (Fig. 2) in accordance with the study objectives and the literature reviewed; this gave rise to a pre-determined list of topics to be explored. The categories and sub-categories that emerged during the process of exploring the narrative data were integrated into the analysis, creating the emerging model (Fig. 2).

The review of the categories and of the encoding process was performed by different members of the research team in order to check the analysis process and give it a greater degree of reliability.

The authenticity of the information generated by the textual data and its relationship with the study categories were assessed for their redundancy. As such, narrative data that fulfilled saturation criteria were included in the results.

The credibility of the findings was reinforced through a process of triangulation (Creswell 2012) through three channels: (1) FGs were held with children and parents in different PS but applying the same methodology; (2) FGs were carried out with the roles exchanged between moderators and observers; (3) the texts were analysed by more than one researcher. QSR NVivo 8 software was used to facilitate the analysis. The research was carried out according to the systematic process shown in Fig. 3.

Ethics

The research was carried out in accordance with the ethical principles formulated by the World Medical Association (WMA) and set out in the Helsinki Declaration. The Spanish privacy and confidentiality framework (LOPD 15/1999) was used to obtain consent from participants. The research protocol was approved by the school boards of each PS and by the research committee of the principal researcher's institution.

Results

The Internet has assets for health and well-being

Fun, games and learning

The children saw the Internet as an asset for their own well-being and they associated it with doing things to feel good, be happy and interact or share ideas, experiences and feelings with others. The pupils interviewed associated the Internet with fun, entertainment and games with the

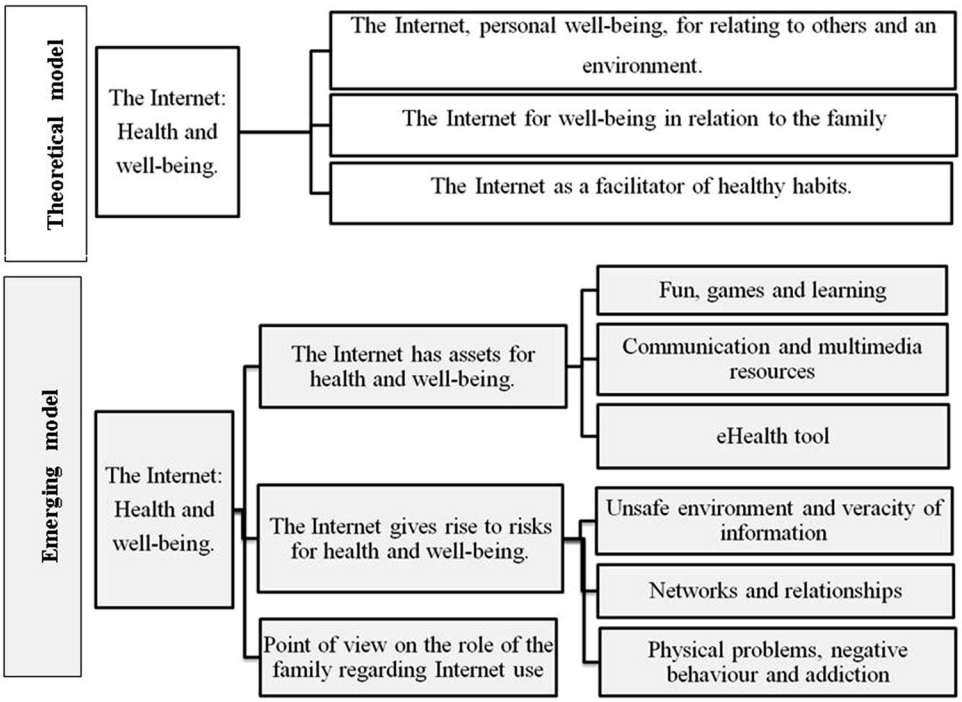

Fig. 2 Analysis categories. Theoretical model and emerging model

Internet, emphasising the fact that play can facilitate the constructive use of free time and learning.

- You often learn things on the Internet.
- … and for having fun.
- Sometimes playing is the most important thing.
- To play and to be able to learn…
- On the computer we get a game that we download and then we can learn with those games… they're about maths, language, English…

(FG02).

- I use it for what we're given to do at school. To look for information, and if we're not sure about something, we look it up as well. Also when we're bored we play a game or we log into the school website and revise.
- Sometimes when there's something written in English and I don't understand it, I use the translator… sometimes I learn words by searching with the translator.

(FG07).

Communication and multimedia resources

They valued the possibilities offered by the Internet as a medium for communication and a multimedia resource, for "creating your own stuff": watching videos, listening to music and producing photos. They also highlighted its usefulness for getting in touch with their own classmates for the purpose of carrying out school tasks, and as a means of communicating with loved ones and friends. They also see the Internet as a way of being able to download resources free.

- I think happiness is being able to communicate with your family when they are far away.
- I sent a friend an email with an animated birthday greeting.
- Or if you have a friend who you have not seen for ages and you don't have their address, then you can look them up on Facebook and put their name into Tuenti and you can see how they are, their photos.

(FG02).

- I… use the Internet either to talk to my friends or to do things for school like exercises, looking for pictures, texts.
- But you can also download music, because CDs are very expensive to buy.
  […]
- To me the best thing is that you can download stuff.
- You can't if you don't pay!
- Downloading things is not illegal.

(FG07)

eHealth tool

The Internet was described as a tool for health care and for learning about health topics, acquiring healthy habits and knowledge about medicines and diseases. The participants

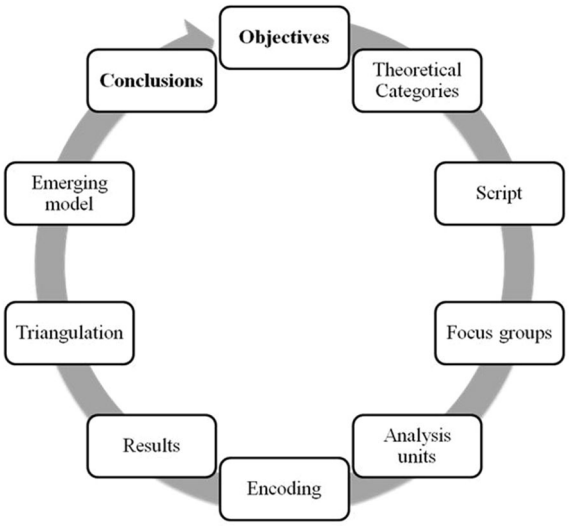

Fig. 3 Research process. Developed by the authors, based on Bradley et al. (2007), Denzin and Lincoln (2011)

also mentioned the usefulness of accessing health-care services through eHealth tools, such as advance appointment services.

- You can look for information about a medicine or something if you don't understand it.
- You can ask for an appointment with the doctor.
- When you're ill you can look up what medicine to take.
- … and they can also give you a prescription (over the Internet).
- My grandfather was ill and there were several things he couldn't eat because of the medicine- he was taking and so my mother looked on the Internet to see what he could eat and that helped him in his illness, to look after himself.
- And also, if you can't remember the emergency number you can look it up there.

(FG03)

- You can also watch a video to find out what to do in an emergency. Where a doctor appears doing things [explanation] and you see it and so more or less…

(FG04)

The Internet gives rise to risks for health and well-being

The children taking part in the study stated that the Internet can be negative for health and well-being.

Unsafe environment and veracity of information

The pupils expressed the opinion that the Internet can cause problems by being an insecure and unsafe environment in terms of the veracity and limitations of the information accessed.

- … they can steal information from you. You can go to some page and something pops up like an offer for you to enter your email address or whatever and then… they have looked at all your personal details illegally.
- […]
- You shouldn't add people you don't know.
- Or visit things [pages] that you shouldn't.
- And also, for example, you mustn't threaten anybody.
- And when adverts appear where you have to put your telephone number, don't put it.

(FG06)

- For example, if you have a back problem, well, you look it up.
- The thing is that sometimes you look for information and all sorts of things come up.
- Yes, in the search engine.
- I think looking in Wikipedia for stuff about backs is like looking in the Yellow Pages for information about the Alhambra.

(laughter)

Moderator: Why? Doesn't Wikipedia explain back problems well?

- Sometimes they put things that we just don't understand.
- Yes, because sometimes you can understand it better in some other page.
- The thing is that Wikipedia tells you more about the circulation of the blood than whether the vertebrae are or aren't…
- It doesn't tell you how to cure it.
- They tell you the causes of the problem, not how to cure it.
- But the point is that that's what you're searching for: how to cure your back if it's painful.

(FG08)

Networks and relationships

One of the biggest risks identified was coming into contact with strangers through shared games online, chats and social networks, in which you might be the victim of threats or deceptions. Pupils highlighted the importance of not revealing private details about yourself or any of your friends. The idea of a "virtual friend", was perceived as a collection of "relationships that are not as real as those of everyday life".

- It is better to have friends, and instead of chatting on Tuenti, chat in real life.
- But suppose you haven't got any…
- …on social networks you can have virtual friends and you feel like you're part of something.
- But the thing is they're not real friends; …they are there.
- You can also lose friends if you are glued to the Internet all the time.

(FG01)

- I was saying that sometimes it can be good, because they're friends from your class that you share everything with and get on well with, or a cousin, but it could also be a man who only wants to know about your house so he can rob you.
- Or it could also be to do bad things to you.

(FG04)

Physical problems, negative behaviour and addiction

"Spending many hours in front of the computer" can cause both physical eyesight and/or back problems and can lead to "getting hooked". The children stated that if you end up losing "direct contact with your friends", this damages your relational and emotional side. Similarly, the children taking part in the study also referred to the negative influence of accessing certain content and violent games.

- It's good, that's true, but at the same time you can also feel bad, not be so healthy. If you spend hours glued to it, you can feel sick, it can damage your eyesight… it's harmful to you.
- That's what happens to me when I spend more than five hours a day on the computer.
- That's a hell of a lot!
- I think those who do that are boring people who aren't capable of doing anything else. That's what I think: the Internet is for boring people.
- But I don't get bored.
- I think those that don't get bored are kids who have always been on the computer, on Tuenti [a social network], and have grown used to it and feel good doing it. Or kids that have never used the Internet, so they find it interesting.
- I agree that the Internet is boring. Instead of going out and doing something healthy, they're stuck indoors on the Internet.
- Yes, but remember there are people who may be unhappy, and haven't got any friends, and perhaps they feel better when they're on the Internet.
- A little bit is OK, but you shouldn't overdo it. Anything is bad if you take it too far. I think doing it every day, day after day after day… instead of that you should get out into the fresh air.

(FG05)

- I think the thing about games is, I'm not saying they're bad; it depends what sort of game it is. Games involving killing and bloodshed… maybe that sort of thing teaches you to be violent. Now if they're normal games…
- Quiz games are better.

(FG07)

Point of view on the role of the family regarding Internet use

The children considered that their families focus mainly on highlighting the risks and dangers of the Internet. They associated the role of their parents with control measures. The children's discourse revealed certain distinct Internet parenting styles: (a) instructive, (b) restrictive and (c) unlimited. The children interviewed expressed the view that their families need to have greater knowledge of what they do on the Internet. They underlined the importance of parents being better informed about the positive applications of the Internet, in order for them to see it as a tool that enables them to use their time constructively. This idea, from the children's perspective, involves not limiting the Internet to being thought of solely as a resource for supporting schoolwork. In this respect, the children not only expressed ideas not only about how they can help their families in terms of using the Internet, but also about the importance of their families being involved in teaching them how to use it.

- Well, some people get into some really bad stuff. For example, this guy here; and his mum doesn't know, or else she knows and she doesn't tell him off (laughter).
- No, she doesn't know.
- Well, sometimes my mum says to me, "show me your photos!".
- The trouble is if you've looked at something bad, your mum takes the laptop and she knows where you've been.
- Of course, she looks at the browsing history.
- There are also some programs that allow you to see from one computer the sites that you have visited on another, my dad does this every day.
- My mum thinks everything is fine.

(FG04)

- I teach my mother tricks. My mum doesn't know how to look at the browsing history, and she doesn't much about how web pages work either, so I teach her.

(FG08)

Discussion

The results reveal the importance of the Internet as a source of information, communication, entertainment, play and learning. This study helps us to understand how the Internet is related in different ways to health and well-being, as well as to happiness, interpersonal relationships and networks. The children associated the Internet with health opportunities, tending to identify the assets for well-being provided by the Internet and certain associated risks. This could be in line with recent views and controversies on the concept of health (Godlee 2011). It could also be indicative of the logic that is evolving along two different perspectives: on the one hand, that of risk prevention, and on the other, the search for health and well-being. Future studies could further explore these two views and their implications for Internet use, from the perspective of the assets model or that of the deficits model (Hernán et al. 2014; Morgan et al. 2010).

The children underlining two potential risks: (a) that of "deception" on coming into contact with strangers, and (b) the effect of "getting hooked" to the Internet. Our findings highlight issues relating to physical health and Internet use. However, there is insufficient relevant information available to be able to suggest a relationship. The children identified at least three types of parental attitudes: (1) a democratic model in the home as a strategy for Internet use, (2) constant control, to which some participants referred, and (3) a lax attitude on the part of parents involving neither control over nor interest in what their children are doing. Future studies could take a closer look at these three profiles and their relationship with the health habits of school-aged children. On the other hand, the children taking part in the study focus on the assets provided by the Internet's overall worth and its positive resources. Studies are needed to describe different views of the Internet in order to determine whether adults lay more emphasis on risks and children on health assets on the Internet.

The available literature has shown that the best perception levels in terms of health and quality of life will be enjoyed by those who, from the earliest stages of their life, appear to have more assets for health (Lindström and Eriksson 2009). For the children participating in our study, the idea of a constructive use of time is mainly mediated by the type of content that they access. Similarly, the notion of well-being was particularly associated with the possibilities for communication and entertainment offered by the Internet (Plowman and McPake 2013; Kuntsche et al. 2009). Although the children's discourses show that they are aware of the existence of opportunities and risks for health, the way in which the possibilities for fun and communication were described points to important links with the theory of health assets (Morgan and Ziglio 2007).

The constructive use of time and a commitment to learning are considered to be two key elements in psychosocial development at young ages (Theokas et al. 2005). Our findings indicate that "fun" and "communication" are linked together through the notion of "sharing". In the field of public health, it has been shown that the perception of health and quality of life is strongly affected by a social sense, contributing to the formation of networks and the development of social capital (Ipsos MORI/UNICEF 2011; Morgan and Haglund 2009). According to our findings, this can be said to be the case (1) when the Internet facilitates connectedness with classmates in relation to daily school tasks; (2) when it facilitates intergenerational relationships between children and their grandparents; and (3) when ties of friendship are developed.

Our study also indicates that, as other authors have shown, the Internet is not just a tool for collecting information or for communication and entertainment (Subrahmanyam and Lin 2007); it is also a tool for health care. As we know, there is a relationship between people's state of health and the process of health literacy (Nutbeam 2000). In fact, this is considered to be a prerequisite condition in order for individuals to participate effectively in making decisions about their health (Austvoll-Dahlgren et al. 2012). This has led to a highlighting of the need for increasing knowledge in terms of using the Internet from a young age, exploring it and making ever greater use of the resources it offers (van Deursen and van Dijk 2011; Neter and Brainin 2012). Schools play a vital role in the digital literacy of children, by enhancing access to health content and information search strategies (Ion et al. 2010). Thus, the promotion of eHealth literacy, as identified by children, plays a significant role in the development of skills for self-management and control (Paek and Hove 2012; Brown and Dickson 2010).

In Andalusia, studies have identified the need for teach skills for selecting information on reliable websites, as well as for promoting literacy for health generated by the Internet (Hernán et al. 2014; Observatorio de la Infancia en Andalucía 2010). Consequently it is interesting to note that the development of collaborative teaching–learning strategies between parents and children was identified as a way of strengthening interpersonal relationships within families, as well as improving how parents view the way in which their children use the Internet.

The methodology used facilitated an in-depth investigation of the children's discourse, as other studies had done previously with groups of adolescents and young people (Hernán et al. 2014). Although we do not wish to generalise, it allows us to suggest that future studies might

replicate this methodology at the beginning of children's relationship with ICTs.

Conclusion

This paper is a new contribution to identifying the Internet as an important resource for children's health and well-being, which, through learning, communication, fun and health care, encourages the children interviewed to make use of it. Digital and health literacy constitutes the foundation required for browsing the Internet in a positive way, as identified by the children interviewed in this study, and especially in relation to the health assets that the Internet can contain.

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