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# 'Gaining health and wellbeing from birth to three': a web-based positive parenting programme for primary care settings

Enrique Callejas , Sonia Byrne  and María José Rodrigo 

Departamento de Psicología Evolutiva y de la Educación, Universidad de La Laguna, San Cristóbal de La Laguna, Tenerife, Spain

## ABSTRACT

Current models of pediatric care include parental support as part of health promotion in the early years. This study introduces the modality of e-health by describing the universal 'Gaining Health and Wellbeing from Birth to Three' programme, reporting on the level of programme satisfaction among 249 parents and 350 professionals. The average level of satisfaction was very high for both groups. The professionals showed significantly higher rates than the parents in the 'Activity' factor, but there were no significant differences with regard to the 'Programme experience' and 'Parenting impact' factors. Parents living in single-parent families were more satisfied, whereas professionals who were more heavily engaged with the Internet were less satisfied with the parenting impact of the programme. In sum, this study has demonstrated that a cost-efficient (brief and fully automated) structured programme was able to reach a large population of participants and satisfy their expectations about the programme.

## ARTICLE HISTORY

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## KEYWORDS

E-health; parental support; programme satisfaction; primary care settings; early intervention

## Introduction

A substantial body of research has shown that the promotion of development in the first years of life is key to guaranteeing a child's health and emotional wellbeing (Shonkoff & Fisher, 2013). First, early childhood is a crucial stage during which the brain undergoes important structural changes due to the influences that shape such development. Second, brain development is related to cognitive, emotional, and social abilities, and learning and behaviour are interconnected with physiological systems of response to the environment that influence health. Third, toxic environments lead to body stress responses that have adverse consequences that compromise health and well-being throughout life. And finally, cerebral plasticity can benefit from appropriate stimulation provided by adults in the family environment.

For these reasons, early intervention has become a priority in many European policies, with great efforts having been made to improve the care provided by public health systems at these ages. The public health system is considered to be the '*only universally accessed non-stigmatized setting that we have for very young children*' (p. vi) (Briggs, 2016). It also allows for early detection of developmental risk (indicated and selective intervention) and for preventive interventions through the universal promotion of health in primary care settings (Blair & Isaacs, 2003). Moreover, recent evidence has shown that health system interventions become more effective if parental support is included as part of the pediatric intervention (Barnes et al., 2017; Reedtz, Handegård, & Mørch, 2011; Scholer, Hudnut-Beumler, & Dietrich, 2010; Shah, Kennedy, Clark, Bauer, & Schwartz, 2016). The present study goes

in this direction, providing some results of parents' and professionals' satisfaction with a web-based early intervention programme and discussing the opportunities and challenges of implementing parental support in primary care settings.

### ***Parental support in primary care settings***

Pediatric care has recently seen the adoption of the Family-Centered Medical Home model (Han & Genevro, 2010; Stille et al., 2010), the aim of which is to move from the assistance model to the health promotion and disease prevention approach. This model includes parental support as an important part of the health promotion process. In pediatric services, this translates into giving greater prominence to the psychosocial factors that surround the child, such as the care provided by the family (Kaplan-Sanoff & Briggs, 2016). Thus, it is important to train parents in the development of healthy routines at home as a way to empower parental figures to become active agents of their child's health status (Farber, Ali, Van Sickle, & Kaslow, 2017). The Healthy Steps programme (Briggs, 2016) is an example of this type of comprehensive intervention, since it is located at the intersection of education, early care, and health. This evidence-based programme has been in use for more than 20 years in the US and has demonstrated the effectiveness of establishing collaborative professional-family relationships as the main objective in the care of children and adolescents (Kaplan-Sanoff & Briggs, 2016).

The health promotion model involving parental support to families poses a real challenge to clinicians, however. It is necessary to improve the training provided to health professionals, who have traditionally given a predominant role to biological variables and paid less attention to psychosocial aspects of child health, such as care and education in the family context. It is also necessary to help clinicians select appropriate techniques for carrying out parental support and for establishing a collaborative relationship with the family. The face-to-face family support used, for instance, by clinicians in the Healthy Steps programme is extremely important for introducing parental support into the primary care setting, but it is not the only mode of delivery possible. In this sense, the use of web-based technology has increased in health settings (Glascoe & Trimm, 2014; McGoron & Ondersma, 2015; Ritterband & Palermo, 2009). E-health actions have been proposed because of their advantages: they offer cost-efficient, universal availability, high fidelity, convenience, and ease of use, among other things (Baggett et al., 2010; Breitenstein & Gross, 2013; Self-Brown & Whitaker, 2008). Also, digital delivery methods meet a clear need, since parents (especially mothers) of young children are increasingly using the Internet to look for parenting and healthcare information (Dworkin, Connell, & Doty, 2013; Myers-Walls & Dworkin, 2015).

### ***Gaining health and wellbeing from birth to three***

The provision of parental support in social, educational, and community settings is a flourishing field in Europe, inspired by the Council of Europe's Recommendation (Rec2006/19) on Policy to Support Positive Parenting (Daly, 2013; Rodrigo, Almeida, & Reichle, 2016). This initiative provides a modern view of the parenting role, one that is focused on showing affection, supporting child's learning, sharing quality time, and offering positive reinforcement of tasks and behaviour in family life. However, the introduction of parental support into the public health system remains a novelty. Since 2009, Spain has also adopted a prevention approach to family support and widely disseminated positive parenting programmes in social services and education (Rodrigo, Byrne, & Alvarez, 2016). The Spanish Ministry of Health, Social Services, and Equality has identified early intervention as one of the main targets of the prevention efforts integrated into its Prevention and Health Promotion Strategy (Ministry of Health, Social Services and Equality, 2013). The idea is to endorse the positive parenting initiative by incorporating parental support into the pediatric services of the Spanish National Health System (SNS) by means of a web-based positive parenting programme, among other actions.

The *Gaining Health and Wellbeing from Birth to Three* (Ganar Salud y Bienestar de 0 a 3 años) programme (herein GH&W) represents an innovative approach to increasing the sustainability and accessibility of parental support in busy primary care settings where time is limited but the need for health promotion is great. The main objective of this programme is to promote e-health and emotional well-being in children from birth to three by training parents in personal, emotional, caregiving, and educational skills that allow them to be effectively involved in their parent–child relationships. The GH&W programme’s specific goals for parents are the following: (1) to learn about the child’s abilities in each developmental landmark to be able to meet his/her needs; (2) to develop strategies for the stimulation and support of the child’s capacities in everyday settings; and (3) to achieve security and confidence in their caregiving and educational task, that is, to gain in self-efficacy and increase parental satisfaction. The idea is to provide training resources for fathers, mothers, and other parental figures aimed at promoting positive parental models that help ensure a good start in the lives of all children so that they can develop their maximum health potential.

A team of applied researchers, of which the authors formed part, with experience in the development of face-to-face and web-based positive parenting programmes was commissioned to design and prepare the GH&W programme (Rodrigo et al., 2017). The programme is conceptually grounded in the developmental system model, stressing the importance of early intervention (Guralnick, 2011, 2013). According to this model, three general domains have consistently been found to be disrupted or of lower quality for children at high environmental risk as compared to families without substantial environmental risk factors: (1) parent–child transactions (attachment bonds); (2) family-orchestrated child experiences (daily stimulating routines); and (3) health and safety activities provided by the family (health promotion activities). Consequently, the GH&W programme includes four modules with interactive materials (video clips and illustrations) depicting everyday parent–child situations designed to foster attachment bonds and help parents establish adequate routines for feeding, physical activity and play, and sleeping. The materials are designed for three age ranges: birth to one, one to two and two to three years old, with the range to be selected by the participants at the start of the programme.

The GH&W programme follows an experiential methodology based on the presentation of everyday situations where it is possible to observe parental attitudes and behaviours that can be favourable to or hinder healthy development. Then, parents are encouraged to reflect on their own views and the consequences on child development while promoting their confidence on the parental capacities (Rodrigo, Correa, Máiquez, Martín, & Rodríguez, 2006). This methodology has been shown to be effective, with good results achieved in both face-to-face and online formats (Rodrigo, Máiquez, Martín, Byrne, & Rodríguez, 2015; Suárez-Perdomo, Byrne, & Rodrigo, 2018). The programme starts with a video in which two actors (one male and one female) present the programme and encourage parents to participate, and in which other parents’ opinions about the programme are presented. The structure of each subsequent module is as follows: (1) Introduction of the topic (images supported by a voice); (2) Presentation of developmental timetables (video clips or illustrations) corresponding to the main child capacities related to each topic (i.e. the establishment of attachment bonds). Participants are asked to predict the age at which a child is able to achieve a given outcome and are then provided with feedback on their response; if they get the wrong answer, they can try again with a new trial; (3) Everyday educational scenes (video clips) in which parents interact with the child in different ways and participants are asked to provide a title to the scene and predict the consequences that will follow in the next scene; and (4) a recall exercise, in which participants work through a set of written true/false statements related to the contents of each module. At the end, participants can also download one-page guides containing the main tips and recommendations for each session. The programme also offers additional links to relevant, scientifically-verified information related to the topic. Finally, there is a farewell video and a diploma for those who have completed the programme (at least all the exercises for one age group across the four modules). The full programme takes an average of eight hours to complete. The programme is hosted on <http://aulaparentalidad-msssi.com/> and is also available on the Ministry’s lifestyles page:

<http://www.estilosdevidasaludable.msssi.gob.es/> There is a face-to-face version that employs the same digital materials and targets groups of vulnerable parents who are unable to complete the digital version (Rodrigo et al., 2017). In addition, an online course has been launched specifically aimed at professionals (e.g. pediatricians, nurses, midwives, social workers, and physiotherapists) to train them in the programme contents and the dynamics of face-to-face workshops (four editions have been held since November 2015 with around 3341 participants, 75.5% of whom completed the course).

### ***The present study***

This study had three objectives. The first was to examine the profile of Internet experience and educational use in both the parent and professional groups. It was expected that the GH&W programme would spontaneously attract mainly highly-educated young mothers with young children and considerable experience in the educational use of the Internet, in accordance with the typical profile of users of parenting resources (Dworkin et al., 2013; McDaniel, Coyne, & Holmes, 2012; Myers-Walls & Dworkin, 2015). The second was to compare the programme satisfaction reported by the parents and professionals. Parents' satisfaction with the programme enables programme developers to learn about its strengths and gain insights into the areas requiring improvement. It also increases the probability that the programme will be recommended to other parents. Professionals' satisfaction with the programme is also very important to guarantee sustained support for its use. Satisfaction was measured with regard to the programme's usability (Nathan & Yeow, 2011), the quality of its content, and its parenting impact (Hughes, Bowers, Mitchell, Curtiss, & Ebata, 2012; Myers-Walls & Dworkin, 2015; Suárez, Rodríguez, & Rodrigo, 2016). It is expected that professionals and parents would show similar rates of satisfaction, mainly with regard to the programme activities, due to the variety of topics included and the use of didactic formats that are adapted to different user profiles. The third objective was to investigate the extent to which sociodemographic and Internet usage profiles may influence programme satisfaction in each group. Parents may differ in their satisfaction with the results of their Internet activity (Baker et al., 2012; Hand, Mc Dowell, Glynn, Rowley, & Mortell, 2013). In principle, it is expected that parents and professionals with a more experienced profile in Internet use would be more satisfied with the programme than those with a less experienced profile. However, it has also been found that highly-educated parents are more critical about the usefulness of information found on the Internet (Suarez, Rodrigo, & Muñeton, 2016).

## **Method**

### ***Participants and recruitment***

The participants in this study were 249 parents (parent group) and 350 professionals (professional group) from practically all Spanish Autonomous Communities. Professionals were mainly pediatricians, nurses, midwives, social workers, psychologists, and teachers. Data collection took place from January 2017 to February 2018. A total of 4639 users visited the course, 599 of whom (parents and professionals) filled out the final programme satisfaction survey. Tables 1 and 2 show that the parent group was mainly composed of highly-educated, urban mothers in the middle age group, i.e. between 20 and 40 years of age, living in two-parent families with a single child around one year old attending a day nursery, with the child's gender evenly distributed. The professional profile is quite similar, though the professionals were significantly more highly educated than the parents and less likely to live in two-parent families. Professional gender is missing due to a failure in the platform. Parents had found out about the GH&W programme mainly through a primary care professional or a non-health professional, whereas the professionals had found it mainly through web navigation or on recommendation from a non-health professional. Low rates of visits to the programme through social networks were found in both groups.

**Table 1.** Participants' sociodemographic distribution in parent and professional groups.

Variables	Parent group <i>n</i> = 249 %	Professional group <i>n</i> = 350 %	$\chi^2$ (g)
Adult age:			.31 (2)
Younger (<20 years)	2.0	1.7	
Middle (20–40)	67.1	69.1	
Older (>40 years)	30.9	29.1	
Educational level:			8.58 (3)*
Secondary education	1.6	0.9	
Professional training	25.3	18.1	
University degree	73.1	81.1	
Zone. Urban	79.9	77.7	0.42 (1)
Family typology. Two-parent	88.4	80.5	6.6 (1)**
How I heard of GH&W programme:			27.2 (5)***
From primary care professional	20.5	11.5	
From non-health professional	23.3	25.5	
From acquaintance	22.5	16.3	
I found it on the web	10.8	24.1	
Through social networks	10.0	13.2	
Others	12.9	9.5	

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

## Instruments

### Sociodemographic data

Composed of five items, included gender and age of adults, educational level, family structure, and residential area. Additional information was included for the parent group: child's gender and age, number of children, and their attendance at a day nursery.

### Internet experience and educational use (adapted from Suárez et al., 2016)

This survey measure consisted of seven questions divided into two sections:

*Internet experience:* This section is based on 2 items: How often do you go online? (scale of 0–4): (0) At least once a month; (1) Once or twice a month; (2) Three or four times a month; (3) Once or twice a week; (4) Three or four times a week or more. How long do you spend online each time of connection? (scale of 0–4): (0) Less than 30 min; (1) 30–60 min; (2) From 1 to 2 h; (3) More than 2 h; (4) Most of the day.

*Educational use of the Internet:* This section is based on 5 items: Have you ever done any of the following activities related to child-rearing issues? (scale 0 (never) to 3 (very often) for each category): Look for information about early childhood education; Look for an online educational game; Seek information or guidance on child development; Look up family health-related information; Look for parenting-related topics.

### Program Satisfaction Scale

Produced for this study, consisted of seven items (scale of 1 to 10; 1 (highly dissatisfied), 5 (neutral), to 10 (highly satisfied): (1) usability (2 items); (2) content (2 items); (3) parenting (3 items). Two additional measures of Overall satisfaction (scale of 1 to 10) and an open question: *What content would you add?* were also included.

**Table 2.** Additional sociodemographic information in the parent group.

Variables	<i>M</i> (SD)/%
Parent's gender (female)	85.1%
Child's gender (female)	43.4%
Child's age	1.14 (.96)
Number of children	1.15 (1.67)
Attending day nursery	61.8%

## **Procedure**

The first version of GH&W was revised by 25 experts in health and caregiving (representatives of professional associations and university researchers) and piloted with 105 professionals from public health services and NGOs from all over Spain (December 2015 to February 2016) and with 23 parents (April to June 2016). The results of this pilot study showed high levels of satisfaction with the usability and content of the programme, indicated minor technical failures, the need to adjust the difficulty of some activities, and added some links to enrich the informative section. After all the recommended changes had been made, the online course was launched in January 2017. From this date onward, the programme could be freely accessed at any time. Participants logged in to gain access to the programme and, as a first step, filled out both the initial sociodemographic questionnaire and the scale of Internet use. They then entered the Moodle platform and, once they had decided on which age range they wished to explore, self-administered the remaining materials. Participants voluntarily filled out the satisfaction scale before leaving the programme. The system tracked the initial and final measures and transferred the results to a database which was accessed for programme development and scientific purposes only.

## **Data analysis**

To compare the parent and professional sociodemographic and Internet profiles chi-square analyses were performed. To compare the parent and professional programme satisfaction, exploratory equation modelling (ESEM) was used first to calculate the factor structure of the Program Satisfaction Scale (MPlus 6.11) and then, analysis of variance (ANOVA) was performed to calculate group differences (SPSS 18). ANOVAs were also carried out to investigate which of the sociodemographic variables may have influenced programme satisfaction in each group. Lastly, to explore the influence of the Internet usage profile on programme satisfaction, hierarchical linear regression analyses were used.

## **Results**

The results are organized by study objective. First, the profile of Internet experience and educational use are presented in both groups. Second, the comparison of the programme satisfaction reported by parents and professionals is shown. Third, the influence of the sociodemographic and Internet usage profiles on programme satisfaction is analyzed.

### ***Profile of Internet experience and educational use***

Table 3 shows the averaged profile of Internet experience and educational use in both the parent and professional groups and their differences.

Overall, in both groups a high level of Internet experience (frequency of use of three or four times a week or more, and one or two hours per connection) was observed along with low educational use rates (between seldom and often). Regarding Internet experience, professionals spent significantly more time online in each connection ( $M = 2.41$ ) than parents ( $M = 2.19$ ). About the educational use of the Internet, there were no significant differences in the type of content searched for, with the exception of information about early childhood education, which was of more interest to the professional group.

### ***Comparison of the programme satisfaction reported by parents and professionals***

For the second research question, first the factor structure of the Program Satisfaction Scale was examined first. Then, Exploratory equation modelling (ESEM) with oblimin rotation was used. For confirmatory purposes, the estimation method the Weighted Least Squares Mean and Variance

**Table 3.** Mean contrasts of Internet use between Parent and Professional groups.

Variables	Parent group M (SD)	Professional group M (SD)	F (1, 597)
Internet experience (0–4 scale)	3.00 (.75)	3.12 (.75)	3.52
Frequency of internet use	3.82 (.53)	3.83 (.55)	.40
Connection duration	2.19 (1.29)	2.41 (1.24)	4.58*
Educational use of Internet (0–3 scale)	1.71 (.64)	1.78 (.64)	0.24
Early childhood education information	1.36 (.86)	1.62 (.93)	12.06***
Educational games	1.65 (.96)	1.72 (.91)	.91
Child development	2.00 (.75)	2.02 (.78)	.99
Family health-related information	1.82 (.82)	1.85 (.83)	.17
Parenting-related topics	1.74 (.86)	1.68 (.86)	.59

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

Adjusted with moving measurement window (WLSMW) was used with a total of participants of 599 from both groups. As a result, a final 3-factor model was selected, because it showed an appropriate fit (RMSEA = .066; CFI = .987; TLI = .908; SRMR = .019;  $\chi^2(3) = 17.479$ ,  $p > .001$ ), according to Tabachnick and Fidell (2007). The Bartlett sphericity test and the sample adequacy measure of Kaiser-Mayer-Olkin were also used (Pérez & Medrano, 2010).

The first factor: 'Programme experience', (2 items;  $\alpha = .78$ ) defined as the user's perception of whether *The variety of materials (i.e. multimedia, pdf, oral presentations) has helped me to understand and assimilate the contents in a simpler way* and whether *The duration of the program seemed appropriate*. The second factor: 'Activities' (2 items;  $\alpha = .70$ ), defined as the user's perception of whether *It has been easy for me to access the activities and navigate in the virtual classroom*, and whether *I found the activities interesting and practical*. Finally, the third factor: 'Parenting impact' (3 items;  $\alpha = .88$ ), defined as the user's perception of whether *Taking this course has helped me to reflect on the care and education of my children, I intend to implement the recommendations learned, and I feel more supported and confident in my parental task after this program*. When professionals scored the items for this factor, they were to think in terms of the potential impact of the programme on parents.

Next the differences between the parent and professional groups were examined with respect to the three satisfaction factors and the overall satisfaction mean (see Table 4).

The average level of satisfaction was very high for both groups. The professional group showed significantly higher rates than the parent group in the 'Activity' factor but no significant differences with regard to the 'Programme experience' and 'Parenting impact' factors. The overall satisfaction mean showed a high degree of satisfaction in both groups.

Finally, there was a register of the number of references to new content topics reported by 142 users who answered the final open question: *What content would you add?* The following new topics were suggested: deepen content (35.4%); behaviour problems (15.0%), health-related topics (vacuums, illness, and first aids) (14.3%), emotions (7.5%), hygiene (6.1%), rules and limits (4.1%), disability (3.4%) and others (i.e. communication, technology, school) (14.2%).

### ***Influence of the sociodemographic and Internet usage profiles on programme satisfaction***

For the third research question, the sociodemographic and Internet usage characteristics that may have influenced programme satisfaction in each group were explored.

**Table 4.** Programme satisfaction mean contrasts between Parent and Professional groups (1–10 scale).

Variables	Parent group M (SD)	Professional group M (SD)	F(1, 597)
F1: Programme experience	8.68 (.86)	8.87 (.83)	2.58
F2: Activities	8.46 (.97)	8.58 (.78)	7.12**
F3: Parenting impact	8.62 (.86)	8.57 (.94)	.50
General satisfaction	8.53 (1.51)	8.54 (1.39)	.01

\*\* $p < .01$ .



**Table 5.** Regression models predicting 'Parenting impact' from Internet use.

Variables	$\beta$	$rs^2$	Adj $R^2$ .03	$p$
<i>Step 1</i>				
Frequency of use	.05			.33
Connection duration	-.10			.06
<i>Step 2</i>				
Frequency of use	.06			.26
Connection duration	-.11	.01		.04*
Early childhood education information	.11			.08
Educational games	-.07			.29
Child development	.09			.25
Family health	.13			.07
Parenting-related topics	-.17	.02		.01**

\* $p < .05$ ; \*\* $p < .01$

### Parent group

There was no significant difference across sociodemographic variables with respect to 'Programme experience'. With respect to the 'Activities' factor, a significant effect of 'Family structure' ( $F(1, 247) = 4.09$ ;  $p = .04$ ) was found. Single-parent families showed higher satisfaction ( $M = 8.95$   $SD = .84$ ) as compared to two-parent families ( $M = 8.64$   $SD = .86$ ). Family structure was also found to be relevant for the variable 'Parenting impact' ( $F(1, 247) = 5.69$ ;  $p = .02$ ). Comparatively higher satisfaction was found among single-parent families ( $M = 8.98$   $SD = .64$ ) than among two-parent families ( $M = 8.57$   $SD = .88$ ). Regarding Internet use, regression models did not predict any factor of programme satisfaction.

### Professional group

With respect to 'General satisfaction', a significant difference was found according to the educational level ( $F(2, 347) = 4.45$ ;  $p = .012$ ). Professionals with a higher educational level showed a lower level of satisfaction ( $M = 8.45$   $SD = 1.43$ ) than those with a lower educational level ( $M = 9.03$   $SD = 1.11$ ). No other significant differences were found for any other sociodemographic variables on satisfaction factors.

Hierarchical regression models including Internet experience as a first step and Internet educational use as a second step were significant for 'Parenting impact' ( $F(7, 347) = 2.60$ ;  $p \leq .05$ ) and 'General satisfaction' ( $F(2, 347) = 3.23$ ;  $p \leq .05$ ). Concerning 'Parenting impact' (Table 5) in the professional group, the regression model for the scores in Internet use was not significant in Step 1,  $F(2, 349) = 2.02$ ;  $p = .14$ , but was significant in Step 2,  $F(7, 342) = 2.02$ ;  $p = .01$ , explaining 3% of the variance. The connection duration ( $rs^2 = .01$ ) as well as the searches for parenting-related topics ( $rs^2 = .02$ ) negatively predicted 'Parenting impact', indicating that longer connection duration and more parenting-related searches predict lower satisfaction with the parenting impact of the programme.

Concerning 'General satisfaction' (Table 6), the regression model for the scores in Internet use was significant in Step 1,  $F(2, 347) = 3.23$ ;  $p = .05$ , explaining 13% of the variance. The model was not significant in Step 2,  $F(7, 347) = 1.88$ ;  $p = .072$ . The users' connection duration ( $rs^2 = .02$ ) predicted less general satisfaction with the programme.

**Table 6.** Regression models predicting 'General satisfaction' from Internet use.

Variables	$\beta$	$rs^2$	Adj $R^2$ .13	$p$
<i>Step 1</i>				
Frequency of use	.01			.89
Connection duration	-.14	.02		.01*

\* $p < .05$ .

## Discussion

This study addresses the universal promotion of health in primary care settings through a web-based parenting support programme offered as a way to empower parental figures to become active agents of their child's health status (Blair & Isaacs, 2003; Farber et al., 2017). The study describes the development of the GH&W programme for digital and face-to-face delivery (Rodrigo et al., 2017). Some results are also provided concerning the digital version of the GH&W programme, reporting the user profile and programme satisfaction in two groups of parents and professionals.

Concerning the first objective, which was to examine the profile of Internet experience and educational use in both groups, the predictions made were confirmed. The GH&W programme spontaneously attracted mainly highly-educated, urban, young mothers with young children attending a day nursery; these parents were frequent users of the Internet, though relatively less experienced in the educational use of the Internet (Dworkin et al., 2013; McDaniel et al., 2012; Myers-Walls & Dworkin, 2015). Thus, a digital skill divide can be seen reflected in the programme access, mainly in terms of parental education, gender, and age. The origin of this digital skill divide probably does not lie in difficulties in accessing the Internet *per se* but rather in the existence of bias in the motivation for searching for educational material and self-perception of online skills (Suarez et al., 2016). Concern about the limited reach of face-to-face parenting programmes has prompted the development of a public health approach to providing web-based parenting support to improve participation rates of families and increase the population-level impact of parenting interventions (Baggett et al., 2010; Breitenstein & Gross, 2013; Self-Brown & Whitaker, 2008). However, substantial differences have been found along income and educational status in the use of online interventions (Baker, Sanders, & Morawska, 2017; Rothbaum, Martland, & Jannsen, 2008). As a consequence, there is a clear need to support e-health parental intervention through additional actions that engage other sociodemographic and Internet user profiles that may not access such material spontaneously.

The professional sociodemographic profile is quite similar to that of the parents, though professionals are significantly more likely to be highly educated than the parents and less likely to live in two-parent families. Professionals are more engaged with the Internet, spending more time online in each connection. Interestingly, they are more likely to search for educational material, especially that related to early childhood education. Probably, health and educational professionals accessing this programme are interested in learning more about how to promote child health and development at these critical ages. Professionals found the GH&W programme through web navigation or on recommendation from a non-health professional, whereas parents were more likely to find out about the programme through a primary care professional or non-health professional. The programme is not yet well known in the social networks, given that the national authorities have not yet advertised the programme on public media, as they have been awaiting the results of the present study.

Concerning the second objective, which was to compare the programme satisfaction reported by parents and professionals, the internal consistency of the Program Satisfaction Scale was examined. Results showed a good reliability especially with regard to the 'Parenting impact' factor. This suggests that the factor tackles three important dimensions in parenting: reflection of the child-rearing style, transfer capacity to daily life, and self-confidence in the parenting task. Concerning group differences, a high level of satisfaction with several aspects of the programme was reported in both groups. Both groups also reported a high level of satisfaction with the programme as a whole. As expected, parents and professionals show similar rates of satisfaction both with the programme experience and with the parenting impact. Thus, they are satisfied with the way the materials are designed, the programme duration, the way the programme helps them to reflect on how they approach the parenting task, and their increased feelings of confidence and support. This is important, since it has been found that gains in both confidence in parenting capacities and parental self-efficacy are related to positive parenting skills (Coleman & Karraker, 2003; Jones & Prinz, 2005). It is also important to note that parents reported their intention to transfer this knowledge to everyday situations, since the

content is conveyed using an experiential methodology that facilitates such transfer (Rodrigo et al., 2015). Professionals are significantly more satisfied with the activities, probably because they value the variety of topics included and the didactic formats used. Indeed, the GH&W programme follows existing guidelines to assure the quality of the activities: a) the information provided should foster effective learning (Dworkin et al., 2013; Hughes et al., 2012; Myers-Walls & Dworkin, 2015); b) activities should provide a variety of educational content with multimedia materials and support interactive exchanges; and c) activities should present personal experiences, concepts, research findings, and child-rearing techniques (Suárez-Perdomo et al., 2018).

With respect to the responses to the open question, users asked for deeper insights into the programme topics that would provide more complementary information about behavioural problems, child disabilities, health-related topics (vaccinations, breastfeeding, illness, and first aid), development of emotions, and family norms. However, the GH&W programme's global approach constitutes part of its added value, since there are few programmes with a general approach to health promotion which truly cover parental support (Daly et al., 2015). The majority of programmes have been centred around specific topics such as sleep (Cook et al., 2015; Mindell et al., 2011), feeding (Bensley, Anderson, Brusk, Mercer, & Rivas, 2011), or behavioural problems (Baumel & Faber, 2017; Breitenstein, Shane, Julion, & Gross, 2015; McGrath et al., 2013). The GH&W programme tries to cover many parenting challenges by providing links to other websites that could be potentially enriching.

The third objective investigates the extent to which sociodemographic and Internet usage profiles may have some influence on programme satisfaction. A different pattern was found in each group. In the parent group, satisfaction with the programme activities and with the parenting impact was shaped only by family structure but not by Internet use. Parents living in single-parent families are more satisfied, since they are more in need of parental support due to the challenge of carrying out the parenting task alone. In turn, professionals' level of satisfaction was more shaped by Internet use, with the exception that professionals with higher educational levels showed lower levels of satisfaction than those with lower educational levels. In the same vein, professionals who spent more time online in each connection and performed more parenting-related searches were less satisfied with the parenting impact of the programme and showed less overall satisfaction. In principle, it has been expected that parents and professionals with a more experienced profile in Internet use would be more satisfied with the programme than those with a less experienced profile. However, our results are in line with those that show that participants who are frequent Internet users and more knowledgeable about going online reported being more critical about the usefulness of the information obtained (Suarez et al., 2016).

There are some limitations to consider in this study. First, more generalizable results would have been obtained by better representing low-educated and low-income populations of vulnerable families. However, our study is informative with respect to the profile of parents that spontaneously engage in the programme, given that there was no general publicity about the programme at that time. Second, it was not possible to collect a full report of the activity of each user in the platform concerning programme duration, number of visits, or time of connection. These data may have further helped explain variations in user satisfaction. Third, not all users filled out the final survey, so the degree of satisfaction of all users could not be explored as self-directed use entails difficulties in engaging and retaining participants (Cook et al., 2015). The satisfaction scale has been already moved to a more visible place on the Moodle platform to increase the probability that participants will fill it out before leaving. Finally, testing programme satisfaction is not enough for claiming the full effectiveness of our programme. In this sense, a more comprehensive evaluation of the programme is in progress including aspects such as the parental sense of competence, the use of health-promoting daily educational activities and satisfaction with family life.

To conclude, the opportunities and challenges of implementing parental support in primary care settings are briefly discussed. This study has demonstrated that a cost-efficient (brief and fully

automated) structured programme was able to reach a large population of participants and satisfy their expectations about the programme. It is also remarkable that professionals and parents agree on the quality of the programme in terms of its usability, content quality, variety of formats, and parenting impact. This means that it is more likely that the programme will be sustainably used and recommended to other users. However, there are challenges to overcome. First, in order to get a higher engagement in the programme of parents coming from lower educational backgrounds, it is necessary to increase Internet proficiency to extend the benefits of the programme to more vulnerable populations. Otherwise, parents with a low educational level and less proficiency in Internet use will lose out on opportunities to learn more about positive child-rearing practices and thus overcome their odds of having children with poorer health, behavioural, and educational outcomes. Second, more efforts should be made to engage fathers, to overcome the subtle introduction of a gender bias into the seemingly socially unbiased and technically neutral medium that is the Internet. Accordingly, a differential training effort should be undertaken when helping mothers and fathers to use the Internet more productively as a parenting support. Finally, some authors have proposed hybrid methods for spreading the impact of parental support to selective and indicated populations, which consist of linking e-health interventions with face-to-face actions (Glascoe & Trimm, 2014). In this regard, the GH&W programme already has a face-to-face version for indicated populations, such as parents at psychosocial risk, to be implemented in primary care settings. Currently, it is undertaken the testing for an intermediate option that consists of implementing face-to-face workshops in primary care settings both to serve as a complement to the online programme and to promote its use. All these parental support actions must necessarily involve the training and engagement of health professionals, to help clinicians select appropriate techniques for carrying out parental support and for establishing a collaborative relationship with the family. It is expected that by testing all these options, a more comprehensive knowledge of how to overcome the remaining obstacles to fully introducing parental support into the public health system can be achieved.

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## Notes on contributors

**Enrique Callejas** is a Research Assistant at the Department of Developmental and Educational Psychology, Faculty of Psychology, University of La Laguna, La Laguna, Spain. His research interests relate to Family Intervention and Early Child Development.

**Sonia Byrne**, PhD is a Professor at the Department of Developmental and Educational Psychology, Faculty of Psychology, University of La Laguna, La Laguna, Spain. Her research specialises in Positive Parenting, Elaboration, Implementation and Evaluation of Positive Parenting programs; and Neurobiology of Maternal Neglect.

**María José Rodrigo**, PhD is a Professor at the Department of Developmental and Educational Psychology, Faculty of Psychology, University of La Laguna, La Laguna, Spain. Priority research lines are Positive Parenting, Elaboration,

Implementation and Evaluation of Positive Parenting programs; and Neurobiology of Maternal Neglect. She coordinates the Experts Group on Positive Parenting of the Spanish Ministry of Health, Social Services and Equity and the Spanish Federation of Municipalities and Provinces.

## ORCID

Enrique Callejas  <http://orcid.org/0000-0002-1259-901X>

Sonia Byrne  <http://orcid.org/0000-0002-9267-3354>

María José Rodrigo  <http://orcid.org/0000-0001-5504-886X>

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