Journal of Telemedicine and Telecare
2015, Vol. 21(7) 400–407

DOI: 10.1177/1357633X15583431
jtt.sagepub.com
SAGE

Internet health seeking behaviour of parents attending a general paediatric outpatient clinic: A cross-sectional observational study

Christian Sebelefsky[1,2], Denise Karner[3], Jasmin Voitl[1], Frederic Klein[4], Peter Voitl[1,3] and Andreas Böck[1]

Abstract

Introduction: Our aim was to examine the internet health seeking behaviour of parents attending a general paediatric outpatient clinic. For this purpose, the proportion of parents going online to obtain child health information, the most commonly used online resources, and factors having an influence on internet usage were identified.

Methods: This cross-sectional observational study was conducted at a general paediatric outpatient clinic in Vienna, Austria. Data collection was done by means of an anonymous questionnaire containing 14 items. A total number of 500 questionnaires were collected.

Results: Among parents visiting the outpatient clinic, 94.4% use the internet to obtain child health information in general and 21% to be informed about the reason for consultation. Most commonly used online resources are Google (91.4%), websites run by doctors (84.8%), Wikipedia (84.7%), health portals (76.4%), the outpatient clinic's homepage (76.4%), as well as health forums and communities (61.9%). Younger parents ($p = 0.022$) and parents of younger children ($p < 0.01$) display a higher tendency to use the internet for child health information purposes. Mothers and fathers ($p = 0.151$) as well as parents with different completed educational levels (mothers: $p = 0.078$; fathers: $p = 0.388$) do not differ in this behaviour.

Discussion: Important reasons for high internet use might be the inexperience of young parents regarding child health as well as the frequent infections, vaccinations, and preventive check-ups which are associated with young age of children. In contrast to former findings relating to health seekers in general, internet usage of parents is independent of their sex and educational level.

Keywords

Internet child health information, health seeking behaviour, online resources, influencing factors, parents

Date received: 29 January 2015; accepted: 30 March 2015

Introduction

Background

It is widely known that the majority of parents use the internet to obtain child health information (CHI).[1–6] However, the percentage varies considerably in the literature of the years 2005–2012 (52–96%).[1–6] These results were mainly obtained at specialized subdivisions of paediatric hospital departments in Australia, Canada and Europe. Referring to investigations that were carried out at general paediatric institutions with resident doctors, Moseley et al.[1] found that 96% use the internet to look for CHI (Michigan, US; 2011). In accordance with Kind et al.,[2] 52% use it for this purpose (Washington, DC, US; 2005).

The findings of Goldman and Macpherson[3] indicate that 8.5% search the internet to get CHI immediately before seeing a doctor. Google is the most popular search engine used to obtain CHI, a finding which was determined by Sim et al.[4]

Regarding health seekers in general, the internet is mostly used to gain information on specific medical conditions,[7,8] One in four of those who consult a doctor use it in conjunction with the appointment.[9] It was revealed by

[1]Department of Pediatrics and Adolescent Medicine, Medical University of Vienna, Vienna, Austria
[2]Institute of Diabetes Research, Helmholtz Zentrum München, and Forschergruppe Diabetes, Klinikum rechts der Isar, Technische Universität München, Neuherberg, Germany
[3]First Vienna Pediatric Medical Center, Vienna, Austria
[4]Independent Statistician

Corresponding author:
Christian Sebelefsky, Institute of Diabetes Research, Helmholtz Zentrum München, and Forschergruppe Diabetes, Klinikum rechts der Isar, Technische Universität München, Ingolstädter Landstraße 1, 85764, Neuherberg, Germany.
Email: christian.sebelefsky@helmholtz-muenchen.de

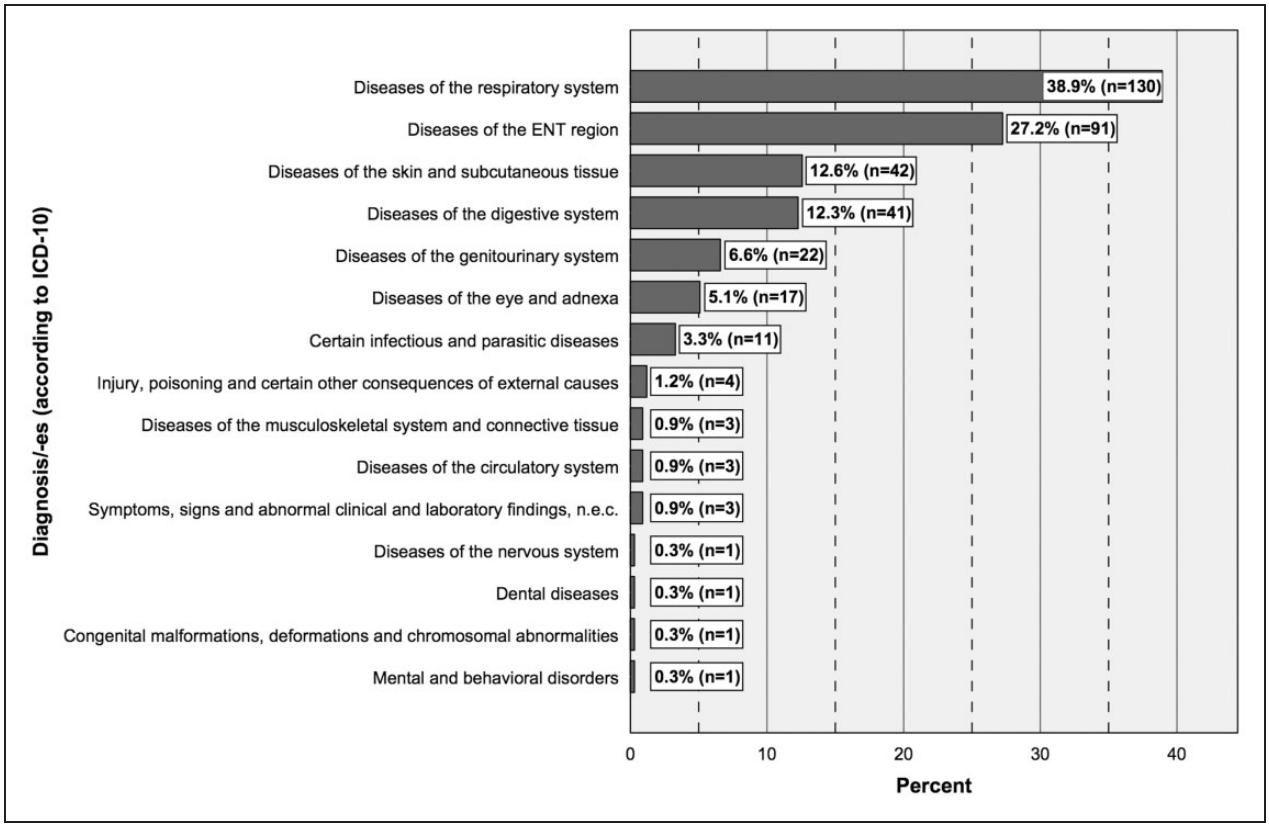

Figure 1. Diagnosis/-es (according to ICD-10) indicated by the treating doctor with percentages of sick children and numbers of cases. Diagnosis groups that were not observed were excluded from the diagram (Table 1); n.e.c.: not elsewhere classified.

the 2009 Pew study in the US that user-generated contents are accessed by the majority of adults who look online for health information.[10] Former studies have shown that more women than men seek web-based health information[7,10–12] and that online health consumers tend to have a higher education level.[13,14]

Objectives

Our main goal was to identify the most common types of websites (internet child health information resources (IR)) used by parents to obtain CHI. The question refers to the types of websites accessed in general for CHI purposes, together with their frequency of use (never, occasional or frequent). Although several former studies have focused on the proportion of parents using the internet,[1–6] little is known on this specific topic.

In addition, this investigation was intended to determine the percentage of parents who use the internet to obtain CHI (general internet use to obtain child health information (IUG)) in a general paediatric outpatient clinic. It specifies whether parents use it on an occasional or frequent basis. Furthermore, it provides information about to what extent they use the internet to be informed about the reason for consultation (IUC). Compared to the findings of Moseley et al.[1] and Kind et al.,[2] this study allows a European perspective on the internet health seeking behaviour of parents consulting resident doctors in a general paediatric setting.

Another aim was to provide insight into how the internet use of parents is influenced by other variables (influencing factors (IF)). These variables comprise sex, age, nationality, and education level of the parents. They also include sex, age, and current diet of the children. Extensive data on influencing factors are available for health seekers in general,[7,10–14] which does not apply to parents in particular and makes this another essential aspect of this work.

Methods

Study design and data collection

This cross-sectional observational study was conducted at the First Vienna Pediatric Medical Center (FVPMC), a general paediatric outpatient clinic located in Vienna, Austria. The spectrum of presented diseases comprises all paediatric entities and was evaluated as part of this study (Figure 1).

All data were gathered by means of an anonymous and voluntary questionnaire in the German language comprising 14 items (Table 1). Twelve of them had to be answered by an accompanying parent, while in the waiting room. Only one parent per family, volunteering to participate in

Table 1. Questionnaire items (variables, values, and descriptive statistical data).

Questionnaire items			
	Variables (dimensions)	Values (answer options)	Descriptive statistical data
1.	Accompanying parent (completing the questionnaire)	Mother/Father	Mothers: 81.5% (n = 378) Fathers: 18.5% (n = 86)
2.	Age of the accompanying parent (completing the questionnaire)	_____ (years)	n = 464 Average: 34 years Std. dev.: 6.4 years Min.: 18 years Max.: 56 years
3.	Nationality of the mother	_____	Total: 34 (for statistical testing: 2 groups) Austrian: 82.5% (n = 411) Other countries: 17.5% (n = 87)
4.	Nationality of the father	_____	Total: 34 (for statistical testing: 2 groups) Austrian: 80.5% (n = 399) Other countries: 19.5% (n = 95)
5.	Highest completed level of education (mother)	Compulsory school/Apprenticeship or technical college/High-school diploma/University	Compulsory school: 2.8% (n = 14) Apprenticeship or technical college: 30.8% (n = 154) High-school diploma: 27.6% (n = 138) University: 38.8% (n = 194)
6.	Highest completed level of education (father)	Compulsory school/Apprenticeship or technical college/High-school diploma/University	Compulsory school: 5.5% (n = 27) Apprenticeship or technical college: 35.4% (n = 174) High-school diploma: 24% (n = 118) University: 35.2% (n = 173)
7.	Sex of the child	Female/Male	Girls: 45.8% (n = 228) Boys: 54.2% (n = 270)
8.	Age of the child	_____ (years)	n = 497 Average: 2.4 years Std. dev.: 2.6 years Min.: 0 years Max.: 17 years
9.	Current diet of the child	Mother's milk/Pre-food/Stage 1 infant formula/Complementary food/Infant food/Vegetarian/Vegan/ Normal diet (without restrictions) (All options to be answered with Yes/No; multiple answers possible)	Mother's milk: 15.9% (n = 106) Pre-food: 9.9% (n = 66) Stage 1 infant formula: 7% (n = 47) Complementary food: 8.2% (n = 55) Infant food: 9.1% (n = 61) Vegetarian: 0.6% (n = 4) Vegan: 0% (n = 0) Normal diet (without restrictions): 49.2% (n = 328)
10.	General internet use to obtain child health information (IUG)	Never/Occasionally/Frequently	Never: 5.6% (n = 28) Occasionally: 56.1% (n = 280) Frequently: 38.3% (n = 191)
11.	Internet use to be informed about the reason for consultation (IUC)	Yes/No	Yes: 21% (n = 105) No: 79% (n = 394)
12.	Internet child health information resources (IR)	For answer options see Fig. 2. (All options to be answered with Never/Occasionally/Frequently; multiple answers (IR) possible)	For descriptive statistical data see Fig. 2.
13.	Reason for consultation (indicated by the treating doctor)	Acute disease/Control visit after an acute disease/Monitoring of a chronic disease/Preventative check-up/Vaccination/ Other reason: _____ (All options to be answered with Yes/No; multiple answers possible)	Acute disease: 53.3% (n = 276) Control visit after an acute disease: 8.1% (n = 42) Monitoring of a chronic disease: 2.7% (n = 14) Preventative check-up: 21.2% (n = 110) Vaccination: 12.9% (n = 67) Other reason: 1.7% (n = 9)

(continued)

Table 1. Continued

Questionnaire items			
	Variables (dimensions)	Values (answer options)	Descriptive statistical data
14.	Diagnosis/-es (according to ICD-10) (indicated by the treating doctor)	For diagnosis groups see Fig. 1. (All options to be answered with Yes/No; some diagnosis groups (ICD-10) were subdivided into more specific entities and could also be answered with Yes/No; multiple answers possible)	For descriptive statistical data see Fig. 1. The following diagnosis groups were excluded from Fig. 1, as these were not chosen: Neoplasms/Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism/Endocrine, nutritional and metabolic diseases/Certain conditions originating in the perinatal period

the study, was allowed to complete the questionnaire. In the case of more than one child per family requiring medical attention, parents were advised to pick one in order to answer the questions correctly. Another two items had to be answered by the treating doctor, immediately after the families had left the treatment room.

The questionnaire was designed for this study and has not been validated prior to its use, as no standardized instrument is available to survey the internet health seeking behaviour of parents. Several investigations have been previously conducted at the FVPMC, which involved questionnaires including items 3–9, 13, and 14 (Table 1). Items 1, 2, 10, 11, and 12 were developed exclusively for data collection within this study (Table 1). No definitions of the answer options 'never', 'occasionally', and 'frequently' (items 10 and 12) were given on the survey. The frequency of use was subjectively assessed on the part of parents.

A sample size of 500 was chosen in order to meet without difficulties the criteria suggested by Israel.[15] In a huge statistical population the data sample should include a minimum of 400 cases (for continuous variables, even less for categorical variables) to keep the sampling error $\pm 5\%$.[15] Five hundred and fifty-three questionnaires were distributed. Fifty-three surplus copies were needed to replace incomplete questionnaires where several items were missing or could not be evaluated.

The data collection period lasted from 25 October to 8 November 2013. An average number of 152 paediatric patients (2014) visiting the outpatient clinic with their parents per day (weekdays and weekends) made it possible to keep this period relatively short. Of the parents asked to complete a questionnaire, approximately 10% declined to participate in the study.

All parents and legal guardians (aged 18 and above) of paediatric patients (aged 0–17) as well as all kinds of consultations and diseases could be included in the investigation. Parents and legal guardians with insufficient German language skills were excluded.

Ethical standards

The study has been approved by the Ethics Committee of the Medical University of Vienna (protocol no. 1814/2013). Data collection was performed by means of an anonymous and voluntary questionnaire. Informed consent was obtained from all individual participants included in the study.

Statistical methods

After collection of the questionnaires, statistical analysis was done with IBM SPSS Statistics (Version 22.0). Frequencies were calculated for each item. All variables, with their respective values and descriptive statistical data, are shown in Table 1. For statistical testing the significance level was set to 0.05.

The Mann–Whitney U test was used in order to identify significant statistical differences in IUG (ordinally scaled) with respect to the sex of parents and children and the nationality of parents (all nominally scaled, dichotomous).

The Spearman correlation and Spearman's rank correlation coefficient were used to examine the statistical relationship between IUG (ordinally scaled) and the education level of parents (ordinally scaled).

The Pearson correlation and Pearson's product-moment correlation coefficient were applied to test for multicollinearity of the variables age of parents and children (both metrically scaled) and current diet of children (nominally scaled, dichotomous).

In order to examine the influence of these independent variables on IUG within multivariate analysis, ordinal regression (ordered logit model) was used. For calculation of the model, the age of children was selected as the influencing variable, as it was supposed to have the strongest effect on IUG. An extreme statistical outlier ($1 \times$ age 17) was excluded so as to not distort the results of the regression. It was also tested in advance whether the influencing variable meets the proportional odds assumption. The Nagelkerke generalized coefficient of determination served to evaluate the goodness of the ordered logit model.

Fisher's exact test was used in order to identify significant statistical connections between IUC (nominally scaled, dichotomous) and the reasons for consultation indicated by the treating doctors (nominally scaled, dichotomous).

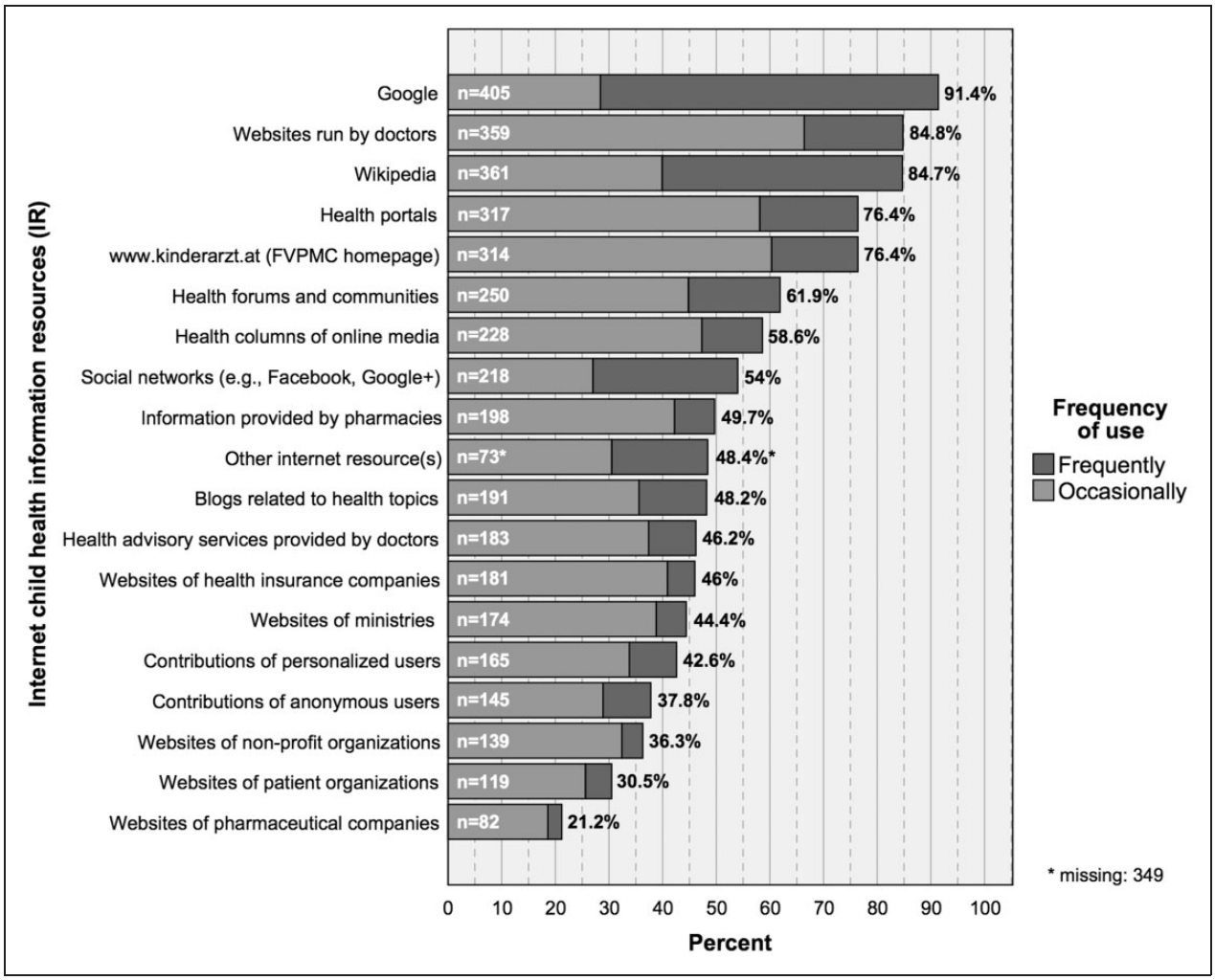

Figure 2. Internet child health information resources (IR) with percentages of users, numbers of cases, and frequencies of use. FVPMC: First Vienna Pediatric Medical Center.

Results

General internet use to obtain child health information (IUG)

The vast majority (94.4%, $n = 471$) of parents attending the outpatient clinic use the internet to obtain CHI. Of these parents, 56.1% do it on an occasional and 38.3% on a frequent basis. Only 5.6% of parents never use the internet for this purpose. These results can also be found in Table 1.

Internet use to be informed about the reason for consultation (IUC)

Of the parents visiting the outpatient clinic, 21% ($n = 105$) use the internet to obtain information on the reason for consultation. This is most likely the case with children having an acute disease (compared to other reasons for consultation) ($p = 0.046$, Fisher's exact test). The web is not used for this purpose by 79% of the parents. These results can also be found in Table 1.

Internet child health information resources (IR)

The most common internet resources used by parents to get CHI are Google (91.4%), websites run by doctors (84.8%), Wikipedia (84.7%), health portals, www.kinderarzt.at (FVPMC homepage) (both 76.4%), as well as health forums and communities (61.9%) (Figure 2). The most common IR used on a frequent basis are Google (63%), Wikipedia (44.8%), and social networks (e.g. Facebook, Google+) (27%) (Figure 2). Common IR occasionally used by parents are websites run by doctors (66.4%), the FVPMC homepage (60.3%), health portals (58.1%), health columns of online media (47.3%), health forums and communities (44.8%), information provided by pharmacies (42.2%), and websites of health insurance companies (40.9%) (Figure 2). Multiple answers were

possible. For all remaining IR and numbers of cases, see Figure 2.

General internet use to obtain child health information (IUG) and influencing factors (IF)

Mothers and fathers do not differ regarding their IUG ($p = 0.151$, $U = 14805.5$; Mann–Whitney U test). Younger parents tend to use the internet for this purpose more often than older parents ($p = 0.022$, OR = 0.964; ordered logit model). There is no statistically significant difference between the IUG of accompanying mothers from Austria and from other countries ($p = 0.312$, $U = 8394.0$; Mann–Whitney U test). The same applies to accompanying fathers from Austria ($p = 0.532$, $U = 459.0$; Mann–Whitney U test). No statistically significant connection was found for the education level of accompanying parents and their IUG (mothers: $p = 0.078$; fathers: $p = 0.388$; Spearman correlation). Parents of girls and boys do not differ regarding their IUG ($p = 0.336$, $U = 29321.0$; Mann–Whitney U test). Parents of younger children ($p < 0.01$, OR = 0.864; ordered logit model) are more likely to use the internet for CHI purposes. The diet of children exerts no influence on IUG ($0.098 \leqslant p \leqslant 0.999$; ordered logit model).

The age of parents and the age of children display a high multicollinearity ($p < 0.01$; Pearson correlation). The age of children is also highly correlated with the variables pertaining to the diet of children (all $p < 0.01$; Pearson correlation), except for 'vegetarian' and 'vegan'. The age of parents also displays a high multicollinearity with 'mother's milk', 'pre-food', 'normal diet (without restrictions)' (all $p < 0.01$; Pearson correlation), and 'complementary food' ($p = 0.02$; Pearson correlation). Descriptive statistical data pertaining to IF can be found in Table 1.

Discussion

Internet use (IUG and IUC)

The vast majority of parents (94.4%) visiting the outpatient clinic use the internet for CHI purposes. This is in accordance with percentages ranging from 52–96%, mentioned in the literature,[1–6] and comparable to the findings of Moseley et al. (96%).[1] The proportion of 52% determined by Kind et al.[2] is markedly lower, which might be due to the earlier date of publication (2005).

The internet is used by more than one in five (21%) of the parents prior to their visit to the paediatrician. In this case, primarily information on acute diseases is gathered. This corresponds with former findings that online research is mainly done to gain information on specific medical conditions.[7,8] The proportion of 21% is similar to the results that 25% of the people consulting a doctor use online health information in conjunction with the appointment,[9] although these findings refer to health seekers in general and not to parents in particular. Nevertheless, the proportion of 21% is considerably higher than the 8.5% reported in Goldman and Macpherson,[3] which might be accounted for by the fact that the respective investigation was conducted at a paediatric emergency department. It might also be due to the earlier date of publication (2006).

In conclusion, our observations confirm that internet usage is of particular importance to parents looking for CHI. Our results allow for the first time a European perspective on the internet health seeking behaviour of parents consulting resident doctors in a general paediatric setting.

Internet child health information resources (IR)

The results show which online resources are most frequently used by parents to obtain CHI. Apart from providing an overview, these findings suggest to which types of websites medical professionals should direct their attention in terms of quality control and improvement.

Naturally, this is essential with regard to websites provided by doctors. In this investigation, these are represented by the IR websites run by doctors, the FVPMC homepage, and health advisory services provided by doctors. Together with Google and Wikipedia, these resources belong to the most frequented among all IR. Our results indicate that online information and online advice provided by doctors are widely trusted. Doctors, and especially paediatricians, with their expertise, have a major influence on the quality of these contents. Consequently, awareness of this should be promoted and more quality resources should be created. Furthermore, the high percentage of parents (76.4%) using the FVPMC homepage (www.kinderarzt.at) demonstrates how well-accepted websites run by resident doctors can be. The widespread acceptance of this concept is also imaginable for homepages of other private practices, outpatient clinics, and hospitals, if not already established.

Google is not only the most popular search engine used to look for CHI[4] but also the most important website for child health issues in general. Aside from Google, Wikipedia, and websites provided by doctors, another important group of online resources are health portals, forums, and communities. Thus, the exchange of experiences among parents seems to be important in terms of online CHI seeking. This corresponds to the results of the 2009 Pew study that user-generated health information is accessed by the majority of 'e-patients'.[10] However, quality management with interactive online resources is only possible to a very limited extent so far. Therefore, health professionals should consider web-based solutions to combine the advantages of exchange between parents and the possibility of quality control through medical experts. A study conducted by Gabbert et al.[16] among parents of very low birth weight children revealed that nearly all of these would welcome an interactive online network that is independent of established social networking (e.g. Facebook) and other dedicated sites (e.g. parenting sites). The authors also suggest a synthesis of

information exchange with other parents and moderation through experts, which is consistent with our concepts.

General internet use to obtain child health information (IUG) and influencing factors (IF)

Previous investigations show that more women than men seek web-based health information.[7,10–12] Unexpectedly, in our study mothers and fathers do not significantly differ regarding their internet use. This indicates that, among online health seekers, parents display a specific health seeking profile. Further research is necessary to determine why fathers are also very likely to seek for online CHI, although men in general less frequently search the internet for health topics.

As could be concluded from this investigation, the education level of parents is not an indicator for their IUG. This is in accordance with the results of Kind et al.,[2] who examined the internet use of parents in an underserved community in Washington, US. However, it is contradictory to the findings of Kummervold et al.[13] and Wangberg et al.,[14] who examined the internet use of the general population. These findings substantiate that, among health seekers, parents who look online for CHI have a specific health seeking behaviour.

In contrast to the sex and diet of paediatric patients, there is a strong statistical relationship between IUG and their age. This also applies to the age of parents. Younger parents and parents of younger children show a higher tendency to use the internet. Even when adjusted for multicollinearity and evaluated separately, these influences on IUG could be proven. However, the relatively low Nagelkerke coefficient (0.083) indicates that the applied logit model cannot account for factors with an influence on IUG in a comprehensive manner. It suggests that further influencing variables exist, which could be the subject of future investigations.

An important reason for high internet use might be the inexperience of young parents regarding child health. The increased incidence of infections in younger children might also contribute to the higher frequency of internet consultations. In addition, more vaccinations and preventive check-ups are necessary for young children, potentially resulting in a higher internet use.

All doctors dealing with neonates, infants and toddlers should be aware of the high internet use of their parents, in particular when providing advice on how to find quality IR and how to deal with the available contents appropriately. However, low use groups must not be disregarded, as their motives for a less frequent use remain unclear. A lack of quality resources for parents of school children and adolescents might be one reason for a lower use. Further investigations are needed to clarify potential causes.

Consequently, the creation of new online child health resources should reflect the aforementioned findings.

Quality criteria and quality control concepts for internet health information resources

Whether websites and contents are provided by medical professionals or laymen, the issue of quality management in the age of steadily increasing web content becomes more and more relevant. Therefore, quality criteria have to be determined, enabling especially non-professional health seekers to deal with web-based health information on their own authority. Quality control concepts for professional medical internet resources like the HONcode[17] already exist and should be promoted by health professionals to assure quality information available to online health seekers. The HONcode principles are also in line with the five most important trust markers for health websites, identified by Sillence et al.:[18] easy usage, knowledgeable source, expertise of the author, impartial and independent advice, and explanation of the reasoning behind the advice. These aspects can be used as a guideline for a critical approach to the use of online child health resources, and online health resources in general.

Limitations

Being mindful of the limitations of questionnaire-based research, our data should be interpreted with caution. Reporting bias in our setting was not able to be controlled, as parents were asked to complete the questionnaires entirely on their own and were only given explanations in case of uncertainties. We merely obtained answers from those parents who were willing to complete the questionnaires and, therefore, we cannot be sure that our findings are applicable to all parents visiting the FVPMC. We have no estimate of how IUG, IUC, IR and IF are distributed in the population of parents not visiting a doctor. The item 'current diet of the child' did not allow parents to state other types of diets (e.g. gluten-free diet) than the given answer options. These answers could not be gathered.

Contributors and authorship

Denise Karner and Jasmin Voitl were involved in the acquisition of data and in creating the draft of this article. Frederic Klein contributed to the conception and design of the study as well as the analysis and interpretation of data. Peter Voitl was involved in the conception and design of the study, the acquisition of data, and the revision of this article. Andreas Böck contributed to the conception and design of the study and revised this article. Christian Sebelefsky was involved in all processes associated with the preparation of this manuscript. All authors have approved the submitted final version of this paper.

Acknowledgements

We would like to thank all participating parents and families for their great cooperation and support with this project. We are

grateful to all doctors working at the FVPMC for completing the questionnaires despite busy schedules. We cordially thank Carina Kaiser for editing and reproducing the questionnaire. We also owe thanks to Stephanie Zillmer for useful content-related advice.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

References

1. Moseley KL, Freed GL and Goold SD. Which sources of child health advice do parents follow? *Clin Pediatr (Phila)* 2011; 50: 50–56.
2. Kind T, Huang ZJ, Farr D, et al. Internet and computer access and use for health information in an underserved community. *Ambul Pediatr* 2005; 5: 117–121.
3. Goldman RD and Macpherson A. Internet health information use and e-mail access by parents attending a paediatric emergency department. *Emerg Med J* 2006; 23: 345–348.
4. Sim NZ, Kitteringham L, Spitz L, et al. Information on the world wide web–how useful is it for parents? *J Pediatr Surg* 2007; 42: 305–312.
5. Baker JF, Devitt BM, Lynch S, et al. Internet use by parents of children attending a dedicated scoliosis outpatient clinic. *Eur Spine J* 2012; 21: 1972–1977.
6. Khoo K, Bolt P, Babl FE, et al. Health information seeking by parents in the Internet age. *J Paediatr Child Health* 2008; 44: 419–423.
7. Gallagher S, Tedstone Doherty D, Moran R, et al. Internet use and seeking health information online in Ireland: demographic characteristics and mental health characteristics of users and non-users. HRB Research Series 4. Dublin: Health Research Board, www.hrb.ie/uploads/tx_hrbpublications/HRBResearchSeries4.pdf (2008, accessed 27 September 2013).
8. McMullan M. Patients using the internet to obtain health information: how this affects the patient–health professional relationship. *Patient Educ Counsel* 2006; 63: 24–28.
9. Sorensen T. WHO/European eHealth consumer trends survey. Final project report. Health & Consumer Protection Directorate General – Health Information, http://ec.europa.eu/health/ph_projects/2004/action1/docs/action1_2004_frep_21_en.pdf (2008, accessed 27 September 2013).
10. Fox S and Jones S. The social life of health information. Pew Research Internet Project, www.pewinternet.org/2009/06/11/the-social-life-of-health-information/ (2009, accessed 28 September 2013)
11. Andreassen HK, Bujnowska-Fedak MM, Chronaki CE, et al. European citizens' use of E-health services: a study of seven countries. *BMC Publ Health* 2007; 7: 53.
12. Atkinson NL, Saperstein SL and Pleis J. Using the internet for health-related activities: findings from a national probability sample. *J Med Internet Res* 2009; 11: e4.
13. Kummervold PE, Chronaki CE, Lausen B, et al. eHealth trends in Europe 2005–2007: a population-based survey. *J Med Internet Res* 2008; 10: e42.
14. Wangberg SC, Andreassen HK, Prokosch HU, et al. Relations between internet use, socio-economic status (SES), social support and subjective health. *Health Promot Int* 2008; 23: 70–77.
15. Israel GD. Determining sample size. University of Florida Cooperative Extension Service, Institute of Food and Agriculture Sciences, EDIS, http://edis.ifas.ufl.edu/pdffiles/PD/PD00600.pdf (1992, accessed 1 August 2013).
16. Gabbert TI, Metze B, Buhrer C, et al. Use of social networking sites by parents of very low birth weight infants: experiences and the potential of a dedicated site. *Eur J Pediatr* 2013; 172: 1671–1677.
17. Health On the Net Foundation. HONcode principles, www.hon.ch/HONcode/Patients/Conduct.html (accessed 2 February 2014).
18. Sillence E, Briggs P, Harris P, et al. Going online for health advice: changes in usage and trust practices over the last five years. *Interact Comput* 2007; 19: 397–406.