

## Refereed papers

# The characteristics of users and non-users of a digital interactive television service – case study: the *Living Health* channel

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### ABSTRACT

In the Birmingham area, 35 000 households were provided with access to the *Living Health* television channel for a pilot period of six months. The transactional logs showed that over the period 13 718 people used the system and that an estimated third of subscribers (34%) chose to view the channel. A questionnaire survey ( $n = 723$ ) in the

third month of service showed that nearly a quarter (23%) of respondents had used the service.<sup>a</sup> The analysis seeks to reveal what types of people used the service during this period and why.

**Keywords:** digital television, health information, interactive channel

## Introduction

There is an understandable presumption on the part of most people providing or funding health information that its receipt will be welcomed. With such a positive frame of mind the government is currently spending vast and increasing amounts on digital consumer health information initiatives, such as NHS Direct, and the provision of health information on digital interactive television (DiTV). The hopes that many a politician has for DiTV were plainly manifest

in a proclamation in 2000 by the then Minister for Health, Gisela Stuart:

Digital TV . . . is likely to allow us to take a further significant step towards the NHS becoming the authoritative provider of advice on health at home and a proactive partner in helping people to change to healthier lifestyles.

This paper shows which people are, and which people are not, proving receptive to health information via their DiTVs. The study forms part of an ongoing investigation into digital health information that we are undertaking for the Department of Health.<sup>b</sup>

<sup>a</sup>The percentage of subscribers using a service will increase over time, given publicity, but the rate of increase will slow. Hence a figure of 23% after three months is comparable to that expected.

<sup>b</sup>The web, the kiosk, digital TV and the changing face of consumer health information provision: a national impact study. April 2000 to January 2002.

## Background

Flextech's *Living Health* channel, distributed by the cable company Telewest to 35 000 of its Birmingham subscribers, was the first broadcasting service to provide interactive health information to the consumer. The *Living Health* interactive channel is essentially a content database (mostly text) covering a wide range of health topics largely adapted from NHS Direct Online, although supplemented by content from other suppliers (for example, updated daily news bulletins, medicines and services directories, public health alerts). Also featured is NHS careers information provided by the Department of Health's Communications Directorate.

The channel also hosts two transactional services: NHS Direct In-Vision, and an Online Surgery Appointment Booking Service. In-Vision provides a one-way video link between a nurse in an NHS Direct call centre and the user at home; the video link is supplemented by a telephone link to provide oral communication between the two parties. The Online Appointments Booking Service allows users to book an appointment with their GP. Three GP surgeries in Birmingham are partners in this venture. All interactive and transactional *Living Health* services are provided within a 'walled-garden' package situated apart from the broadcast channels carried on the Telewest cable television system.

The general service and GP booking element was launched on 28 June 2001. The In-Vision element was rolled out across Birmingham cable hubs starting on 30 July 2001, and was available in all cable homes.

The study largely concerns itself with NHS Direct content on *Living Health*; further work is being undertaken on the transactional services.

## Aims and objectives

The research sought to:

- establish the numbers of people who were using the *Living Health* channel and were aware of its availability
- determine what types of people used the *Living Health* channel during the three-month survey period, why they did, and what they thought of it
- determine what types of people did not and why they did not
- compare the two types of people – users and non-users.

## Literature review

A clear sign of the infancy of digital TV is the multitude of conflicting claims, self-aggrandisement, and lack of meaningful data regarding its reach and impact. Carrigan, for example, writes that 'digital TV has arrived', and claims that seven million UK households now have digital TV.<sup>1</sup> Gronmark is equally enthusiastic, opining that '2001 will go down in broadcasting history as the year that broadcasters and viewers got interactive TV', with '4.2 million digital satellite viewers watching BBC's multi-stream interactive Wimbledon service.'<sup>2</sup> (It is worth noting that Scott Gronmark is, in fact, BBC's Head of Interactive TV.) Journalist Matt Wells, in direct contrast, says that 'the digital dream is in danger of turning into a nightmare.'<sup>3</sup> He points out that 60% of UK households are still content with the five terrestrial channels, and do not seem interested in multichannels of any kind, digital or analogue. Similarly, Denis Olivennes, the head of French broadcaster Canal Plus, was said by BBC reporter John Arnold to have admitted that digital TV had been a 'disaster', and 'uneconomic.'<sup>4</sup> Arnold goes on to highlight the fall in value of share prices of the big digital TV companies – ntl, Telewest, etc.

Getting some kind of grip on who is actually using digital TV is even more difficult than attempting to assess, through all the hype, how successful it currently is. No academic work appears to have been undertaken in the information field. Only one reference was found containing the words 'digital', 'interactive' and 'TV or television', for all the information science databases hosted by Dialog – and that concerned the nature of digital radio.<sup>5</sup> The commercial world has looked, with its eye on potential advertising revenue. The Yankee marketing group identifies 'key customer groups' likely to take interactive television services, including:

- 'Aggressive Early Adopters' – this group is eager to acquire a second interactive device in the home, but not at the cost or space requirements of a new PC
- 'Third Wave Adopters' – the mass-market group of 'Internet users to come'. This refers to the potential users who may not be able to afford a PC, but have an interest in tapping the new basic interactive services available over interactive television, such as email, banking, shopping and travel services.

Similarly, interactive TV was said by marketing company GartnerG2 to reach consumers that 'the traditional PC Internet can't reach; half of interactive TV users don't use the PC Internet – typically less educated, blue collar workers on average incomes'. Commercially confidential information acquired by the present authors suggests that interactive television users most closely followed

<sup>5</sup>Not including technical databases such as Inspec.

the profiles of early adopters of other technologies, that is, they were male and in their twenties. However, there seems to be some dispute regarding the relationship between PC owners and interactive television, with the commercially sensitive source claiming that there was no relationship between non-ownership of PCs and interest in interactive television.

Research by the National Opinion Poll organisation supports the view that interactive television consumers are young.<sup>5</sup> A NOP survey found that among the nearly five million 7 to 16 year olds now using the Internet, almost one in ten (9%) does so through digital TV, and that over a fifth (22%) of 14- to 16-year-old boys accessing the Internet do so by using digital TV. An *Evening Standard* article pointed to the difficulties in determining user numbers.<sup>6</sup> The existing BARB data gathering mechanisms have not proved to be sensitive enough to pick up the smaller audience that DiTV typically attracts. This was set to change by March 2002 when the size of the panel was to be increased.

Finally, the demise in December 2001 of Granada's joint venture with Boots' *Wellbeing* health channel has made commentators ask whether the days of niche television might be numbered, and especially so in the health field.<sup>6</sup> A 'meltdown' in advertising and low audience numbers provided the death knell, although the failure is partly attributed to not using the Boots brand fully and hiding behind some general health façade.

## Methods

This was largely a questionnaire-based study. However, the transactional logs of the service were also evaluated for the period July to November 2001 to provide detailed and real-time records of user activity. This gave us baseline levels of user activity to provide a context for questionnaire data. Generally speaking, *Living Health* logs are relatively refined and accurate by comparison with, say, the logs of a health website. There are no problems with robot use, for instance, and individual subscribers can be identified (but not by name, just number), although in the DiTV context here, subscriber refers to a household and the user may in fact be a family of users.

Data regarding status of usage were obtained from a postal questionnaire sent by City University with literature promoting the *Living Health* channel to all potential Telewest Birmingham subscribers – approximately 45 000 households plus business users accessing the service via the Internet. Seven-hundred-and-twenty-three questionnaires were returned and analysed. Of these, 496 (69%) gave postcode details, which are used in this analysis. The questionnaire was designed to obtain responses on the use and non-use of digital television for health information, specifically in regard to *Living*

*Health*. Furthermore, it asked for personal information details, as well as asking people to rank the importance of a variety of other sources for health information.

User questionnaire responses were related to geodemographic data. These data were obtained from UpMyStreet, a leading digital local area information resource in the UK created by a digital media consultancy.<sup>d</sup> Data were collected by entering location postcodes into a search area and extracting the data from the returned pages. For all the data from UpMyStreet, except location, house price and Acorn category, variables were pre-categorised into three groups: high, medium and low, with little explanation of the categories. For example the variable 'locations likely to have mortgage homeowners' was pre-grouped into three groups: areas having a high likelihood, an average likelihood and a low likelihood. Acorn is a geodemographic classification of residential neighbourhoods; there are six categories, 17 groups and 54 neighbourhood types. This analysis used the six category values only, and lower values represented wealthier neighbourhoods.

## Results

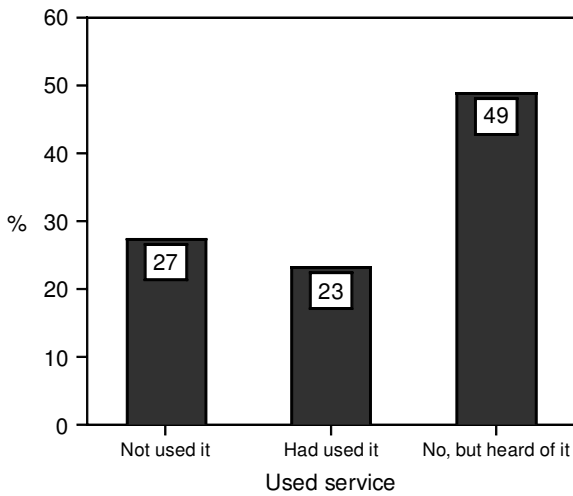
### Use and users

The service logs disclosed three salient facts about use, which furnish an important backdrop for the survey data.

- 1 The number of *Living Health* users varied quite considerably over the survey period – 18 July to 28 November 2001. Just after the launch of the channel, service access stood at just under 400 users a day. The number of users recorded fell significantly after 24 September and reached a low of 200 on 9 October. From the beginning of October until the end of the survey period the number of daily users has remained in the band 220 to 270.
- 2 Returning to a site may signify a degree of satisfaction on the part of the user. Just over 59% of people visited the channel once during the survey period, but a significant minority (41%) of users revisited the service.
- 3 *Living Health* is available to approximately 35 000 to 40 000 people. Over the period of monitoring reported upon here, 13 718 people used the system and, based upon these figures, it is estimated that 34% to 39% of potential users accessed the service during the survey period. Note that reach is a function of the service period over which the figure is calculated. The longer the period over which reach is calculated, the higher the reach figure will be.

Turning to the survey questionnaire findings, Figure 1 shows the relative proportions of people who had

<sup>d</sup>[www.upmystreet.com/](http://www.upmystreet.com/)

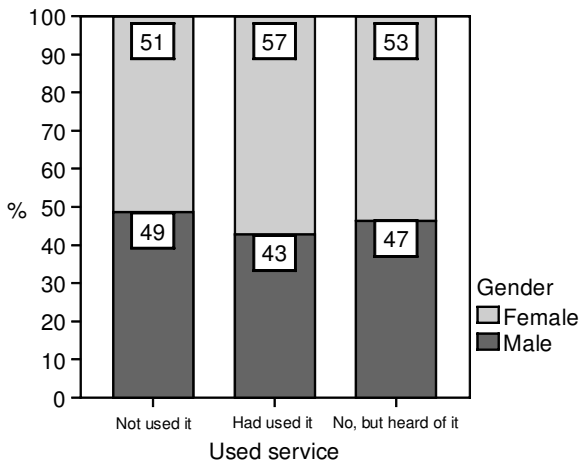


**Figure 1** As a Telewest subscriber, have you ever heard of a service called *Living Health*?

reportedly used the *Living Health* service, had heard of it but not used it, or had neither heard about it nor used it. A clear majority of respondents (72%) claimed to have heard of *Living Health*. However, only one in four (23%) actually claimed to have used the service. Just over one in four (27%) respondents said they had not used the *Living Health* service (they might not have heard of it either or they could have heard of it but not used it). Nearly half of respondents had heard of the service but not used it.

### Personal characteristics of users and non-users

More females responded to the survey than males. However, in a comparison of the three user status groups by gender (see Figure 2), it is clear that women were more likely to report using the service than men



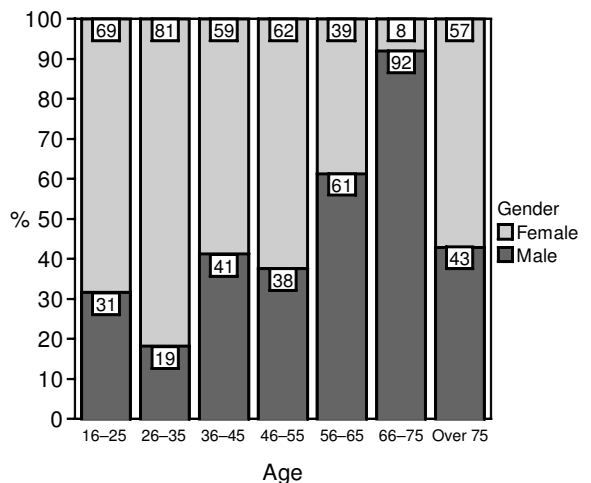
**Figure 2** Percentage distribution of user groups by gender



**Figure 3** Percentage distribution of user groups over age

were. Fifty-one percent of women said that they were not users, however women made up 57% of those who had reportedly used the service. The relationship with age is less clear, but those aged 36 to 45 were more likely to report use of *Living Health*, and those aged over 66 more likely to say they had not used or heard of the service (see Figure 3).

Figure 4 displays the age-gender relationship of those claiming to have used the service. There is a relationship between reported use and age and gender. A higher proportion of younger respondents tended to be women, while older respondents tended to be male. For example, just under two-thirds of respondents between 16 and 55 were women, whereas only about a quarter of respondents were female in the 56 to 75 age band. This relationship has been found to hold true for user profiles for health information services provided via the Internet and touch-screen kiosks.



**Figure 4** Distribution of gender over age groupings – users only

## Factors that might explain use

Multiple logistic regression was used to identify factors that might be important in explaining why some people had reportedly used the *Living Health* service and others had not. Logistic regression identifies explanatory variables of the outcome and the log of coefficients are odds ratios. Respondents who did not know about the service were coded as zero while those who said that they had used the channel were coded 1, while those who did not answer or knew about it but had not used it were excluded from this analysis. The best model fitted to the outcome variable identified four explanatory variables:

- if the respondent had phoned NHS Direct in the last 12 months
- if the respondent lived in an area with a high incidence of £20 000+ income earners
- if the area had a high incidence of 0 to 4 year olds
- if the respondent had an interest in a particular condition.

Table 1 lists the variables, the estimated log odds and the number of cases.

## Use of NHS Direct

People who said they had phoned NHS Direct in the last 12 months were three times as likely to report having used the *Living Health* channel, as compared

to people who had not phoned (see Figure 5). In all, 63% of those people who said they had phoned NHS Direct in the last 12 months had also reportedly used *Living Health* – this was only true of 37% of people who had not used the NHS Direct phone line. This suggests that the *Living Health* channel and NHS Direct are used as complementary services.

## Household income

Household income was also found to be significant (see Table 1), but not quite in the way that might have been anticipated. Users from lower income areas were more likely to use the service. People who came from wealthier areas were half as likely to say they used the *Living Health* channel compared to those people who came from less well-off areas. Approximately 45% of less well-off respondents claimed to be non-users; however, this percentage increased to 61% of reported users from the wealthier areas (see Figure 6). This is encouraging in that it supports the argument that DiTV may throw an online health lifeline to those who have been excluded from the digital revolution – the poor and socially excluded.

## Households having children

The incidence of households having young children (0 to 4 years old) was also significant. People from areas

**Table 1** As a Telewest subscriber, have you ever heard of a service called *Living Health*?: people who had used it compared to people who did not know about it

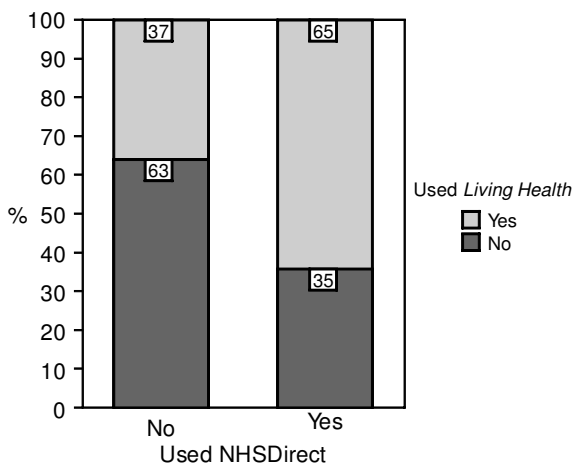
Variables in model	<i>n</i>	Log odds	(SE)
Have you phoned NHS Direct in the last 12 months?			
No	193		
Yes	115	2.97***	(0.30)
Incidence of households having £20 000+ income earners			
Low	116		
Medium	42	0.82	(0.40)
High	69	0.45*	(0.34)
Incidence of households having a baby (aged 0 to 4)			
Low and medium	138		
High	89	1.74 <sup>†</sup>	(0.30)
An interest in a particular condition			
Not at all/not very	37		
Fairly/very	190	4.8***	(0.45)

Levels of significance (Wald's Statistic): <sup>†</sup> $P < 0.1$ , \* $P < 0.05$ , \*\* $P < 0.01$ , \*\*\* $P < 0.001$ .

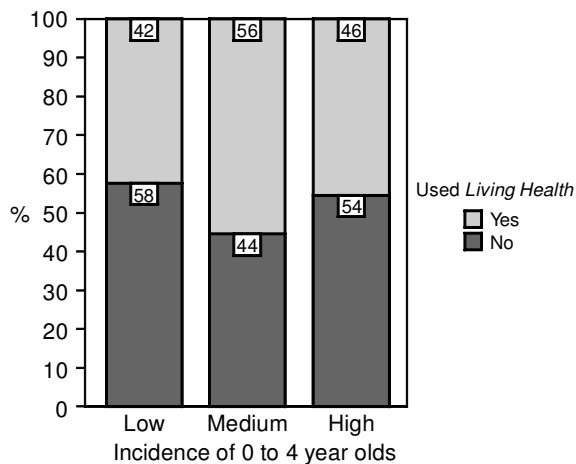
<sup>†</sup>I didn't know about it' coded as 0 ( $n = 113$ ).

I have used it' coded as 1 ( $n = 114$ ).

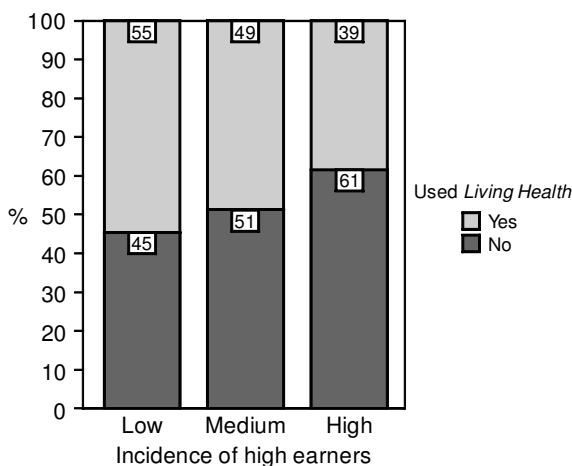
I know about it but haven't used it' coded as missing.



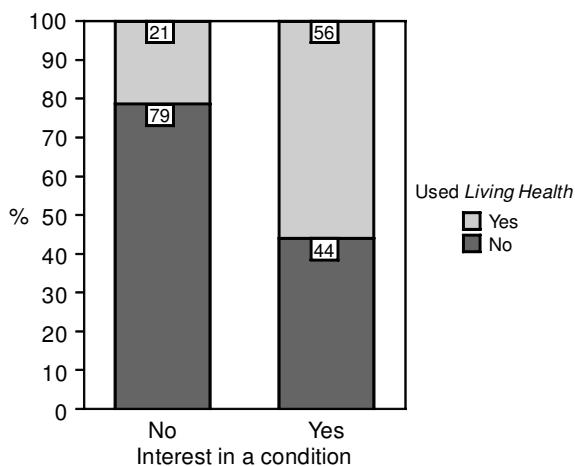
**Figure 5** Have you phoned NHS Direct in the last 12 months?: by use of *Living Health*



**Figure 7** Incidence of 0 to 4 year olds in the area and the use and non-use of *Living Health* service



**Figure 6** Incidence of households having income earners of £20 000+: by use of *Living Health*



**Figure 8** Use and non-use of *Living Health* by whether the respondent had an interest in a particular condition

with a high incidence of 0 to 4 year olds were just under twice as likely to say they used the *Living Health* channel compared to users who came from areas with a low or medium incidence (see Figure 7). This may reflect parents' needs for health information relating to their children. A similar result has been found by the same researchers for touch-screen kiosk users. Nicholas *et al.* reported that the proportion of 0 to 4 year olds in the area was related to the average number of people using the kiosks per hour – areas with a higher proportion of 0 to 4 year olds tended to have a higher average number of kiosk users per hour.<sup>7</sup>

### Having a particular medical condition

Respondents who had an interest in a particular medical condition were also more likely to say they used the *Living Health* service (see Figure 8). These

respondents were just under five times more likely to report using the service compared to those with little or no interest in a particular condition. Seventy-nine percent of those people with no or little interest in a particular condition had not used the service, compared with 56% of respondents who had an interest in a particular condition who said they had used the service. This finding makes good sense; people with specific health information needs may be expected to turn to any readily available and credible source.

### Factors that may explain why users had heard of the service but not used it

A multiple logistic regression model was also used to consider what factors may be important in explaining

differences between those respondents who said that they had used the *Living Health* service (coded as zero) and those respondents who had heard of the system but not used it (coded as 1). The model offering the best fit yielded three explanatory variables; these were:

- whether the person had reportedly used NHS Direct in the last 12 months
- how important to them the web was as a tool for medical information
- whether the user had an interest in prescription drugs.

Table 2 lists the variables, the estimated log odds and the number of cases.

Respondents who said they had phoned NHS Direct in the last 12 months were three times less likely to be people who had heard of *Living Health*, but not used it, compared to reported *Living Health* users who said they had not phoned the NHS. This confirms the result reported above in Figure 5.

Respondents who considered the web important as a source for health information were one-and-a-half times more likely to have heard of *Living Health* but not used it compared to those who did not consider the web as an important source. This indicated relationship suggests that those using the web for their health information needs were not switching to digital television, even though they know about the existence and availability of this alternative service. For these people, the early DiTV appears not to represent a substitute for web-based information. Further research needs to clarify whether these are distinct new media markets and likely to remain so.

The claimed importance to respondents of prescription drugs is an anomaly and suggests that reported *Living Health* users interested in this topic are half as likely to say that they had heard of the service but not used it compared to users with low or no interest in prescription drugs. Bivariate analysis did indicate that respondents interested in prescription drugs were more likely to visit their doctor and more likely to be interested in information on a specific condition, both indicators of users who may be unwell. We expect that those who are unwell are likely to be users of the service. Of those who did reportedly use the *Living Health* service, approximately 55% said they had used the service either before or after a consultation with their doctor. Hence the significance of prescription drugs in the model may well be an indicator variable of those users who are unwell. Users who have heard of the service but not used it may well use the service once they have the need, that is, once they become ill.

### Why people chose to use the service

Figure 9 shows how people came upon the service in the first place. The large majority had just started using it and this suggests that they found out about the service by exploring the menu on Telewest's cable network – browsing, in other words. Twenty percent of users said they found out about the *Living Health* service from the company's promotional literature, while 12% said they read about it in a newsletter and 8% reportedly found out about it from other publicity material. Word

**Table 2** As a Telewest subscriber have you ever heard of a service called *Living Health*?: people who had heard about the service but did not use it compared to those who had used the service

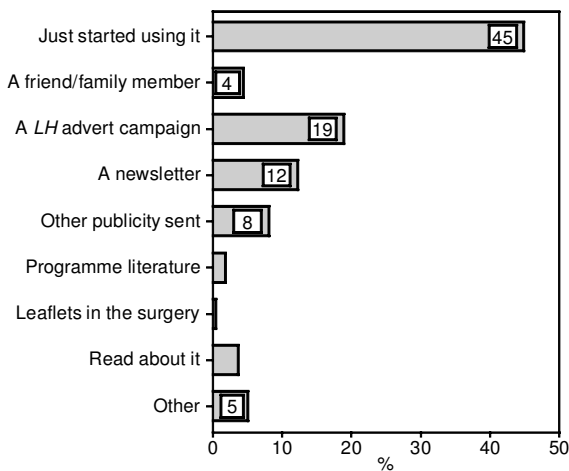
Variables in model	<i>n</i>	Log odds (SE)
Have you phoned NHS Direct in the last 12 months?		
No	294	
Yes	145	0.35** (0.22)
How important is the Internet or web for medical information?		
Not at all/not very	196	
Fairly/very	243	1.44 <sup>†</sup> (0.22)
An interest in prescription drugs?		
Not at all/not very	119	
Fairly/very	320	0.45* (0.26)

Levels of significance (Wald's Statistic): <sup>†</sup> $P < 0.1$ , \* $P < 0.05$ , \*\* $P < 0.01$ , \*\*\* $P < 0.001$ .

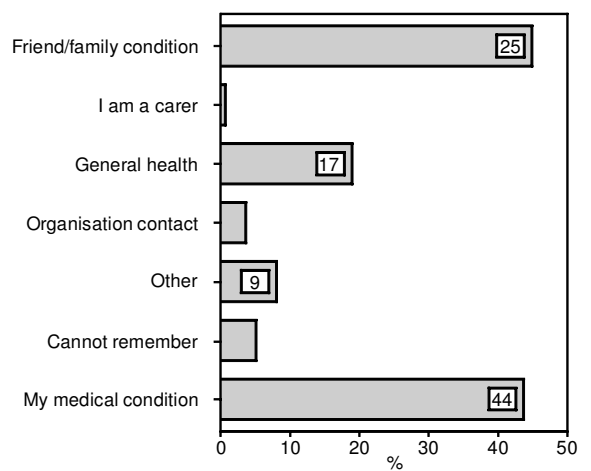
<sup>†</sup>I didn't know about it' coded as missing.

'I have used it' coded as 0 ( $n = 138$ ).

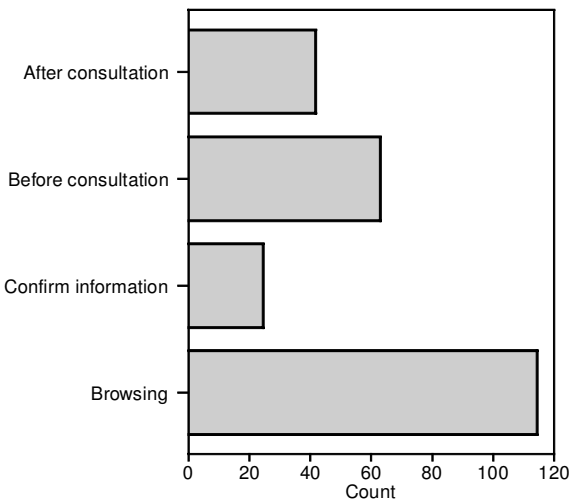
'I know about it but haven't used it' coded as 1 ( $n = 299$ ).



**Figure 9** How did you first come to use the *Living Health* service?



**Figure 11** What information were you looking for the last time you used the service?

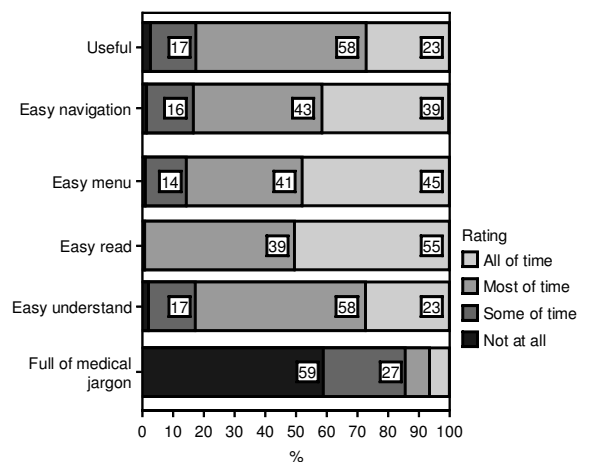


**Figure 10** For what purposes have you used the service?

of mouth did not emerge as a significant source, though its low rating may simply be a function of how little time the channel has had to establish itself.

Figure 10 examines the main reasons for using the service – users could tick more than one option. Just browsing for health information proved the most popular reason – over two-thirds (68%) of users reported browsing as a reason for use. Over one in three users said that they searched for information before consulting their doctor. In all, 55% of users queried the system for information regarding their consultation with the doctor, either before, after, or before and after a consultation.

When asked what information they were looking for the last time they used the service, most users (44%) said that they were looking for information on their own medical condition (see Figure 11). A further one-quarter said that they were looking on behalf of either a friend or a member of the family.



**Figure 12** The last time you used the service, how did you find the *Living Health* service?

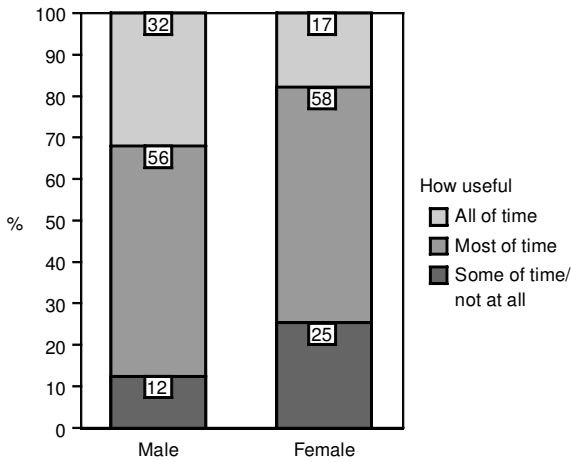
Users were asked about the general usefulness of the site and how easy the site was to navigate, how they found the menus, if the site was easy to read and understand, and if the site was full of medical jargon. Figure 12 reports the results.

More than one in two respondents (55%) said the site was easy to read all of the time. Further, 45% and 39% of respondents respectively reported that the site had easy menus and easy navigation all of the time and 59% said that the site was not at all full of medical jargon. Approximately 85% of users said that the site had easy menus, was easy to read and was easy to navigate either most of the time or all of the time. On a less positive note, however, only 23% of respondents reported that the site was useful.

A relationship was found between how useful respondents found the service and gender, and also how interested the respondent was in information on health topics.

Figure 13 displays the usefulness and gender relationship. As can be seen, more men than women



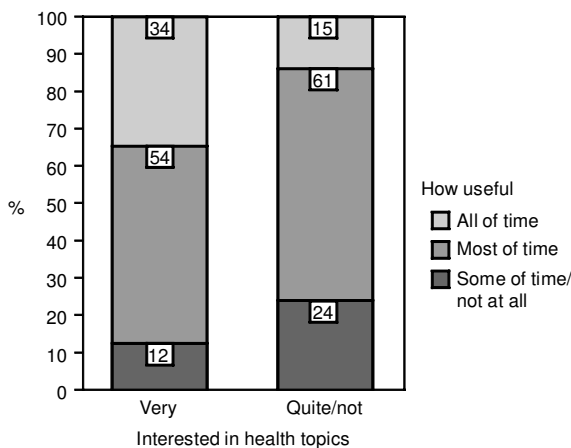


chi = 6.681, df = 2, P = 0.045.

**Figure 13** Did you find the *Living Health* service useful?: by gender

reported that the service was useful all of the time: 32% compared to 17%. Further, women were more likely to say that the service was useful only some of the time or not at all compared to men: 25% compared to 12%.

The users' interest in health topics was also found to be related to whether the user found the service useful (see Figure 14). Those users saying that they were very interested in health information were more likely to report that the service was useful all of the time compared to other users: 34% compared to 15%. Users who were only quite interested or not interested in health information were more likely to report that the service was only helpful some of the time or not at all compared to users who are very interested in health information: 24% compared to 12%.

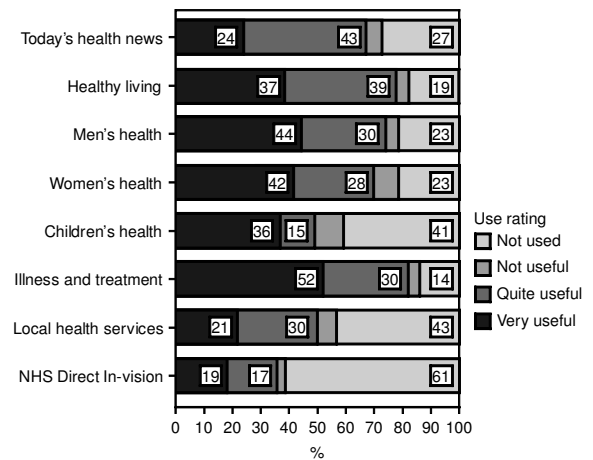


chi = 9.941, df = 2, P = 0.007.

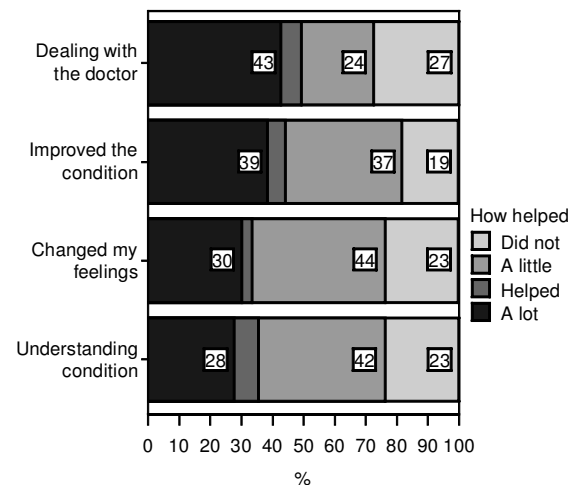
**Figure 14** Did you find the *Living Health* service useful?: by how interested are you in information on health topics?

Figure 15 reports on how useful respondents found each part of the service. The illness and treatment section was considered the most useful section, followed by men's health, then women's health and healthy living. However, it should be noted that these sections have the most pages and topics and hence are the most likely to be used. Today's health news and local health services were considered to be the least useful sections.

The final question, for those respondents who had used the service, asked how much help the information found had been for them in their dealings with their doctor, improving their condition, in changing their feelings about their condition and in understanding their condition (see Figure 16). Forty-nine percent of respondents said that the information found had either helped or helped a lot in dealing with their doctor.



**Figure 15** How useful did you find the information provided by *Living Health*?



**Figure 16** How much help has the information found on the service been?

### Why people chose not to use the service

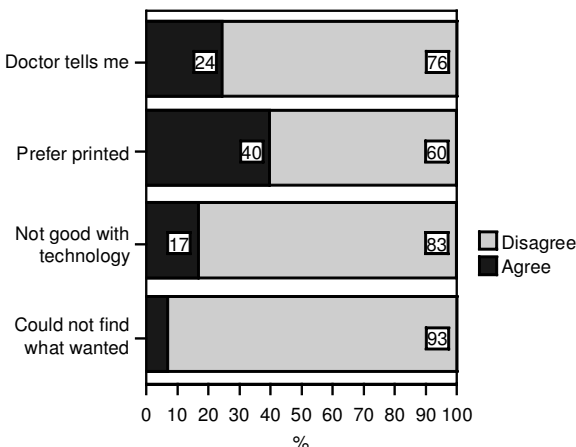
Non-users of the service were asked to fill in a separate part of the questionnaire. The first part asked respondents if they agreed or disagreed with the following statements:

- 1 My doctor/nurse tells me all I need to know, so I do not bother with the information on *Living Health*
- 2 I prefer to receive written/printed information from the doctor about a condition
- 3 I do not use the *Living Health* service because I am not very good with technology
- 4 I tried to use the *Living Health* service but could not find what I wanted.

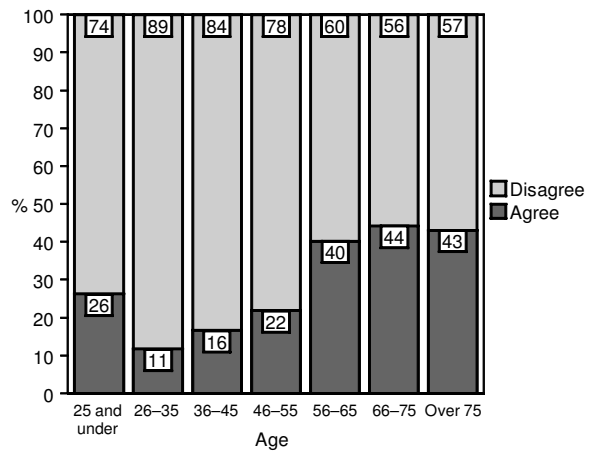
The results are presented in Figure 17. Twenty-four percent of non-user respondents said that they preferred their doctor to tell them and 40% said that they preferred printed information handed to them by their doctor. Seventeen percent said that they were no good with technology, while 7% said that they could not find what they wanted from the service – however, this group must relate to respondents who had heard of the service and not used it and, restricting the responses to this group only, the percentage increases to 14%.

A relationship was found between a preference for printed information and for the doctor to explain the condition with both gender and age. Twenty-one percent of men compared to 20% of women ( $\chi^2 = 6.2, df = 1, P = 0.13$ ) responded by saying that they agreed that the doctor told them all they needed to know. Further, older users were more likely to agree compared to younger users (see Figure 18). About 45% of those aged 55 or over said that they agreed with this statement. Only 20% of those aged under 55 agreed with this statement.

With the statement ‘I prefer to receive written/printed information from the doctor about a condition,’



**Figure 17** Please indicate whether you agree with any of the statements

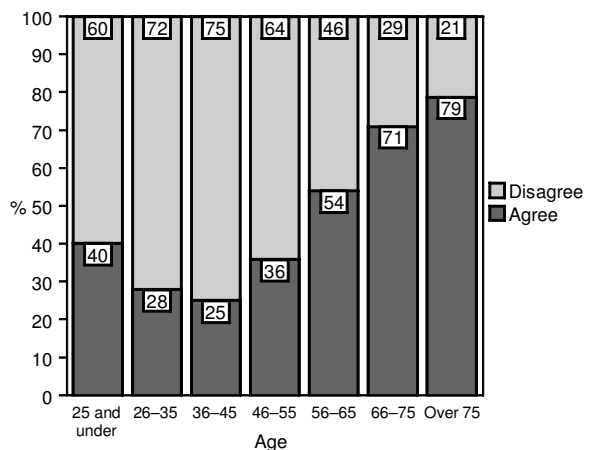


$\chi^2 = 37.6, df = 6, P = 0.000$ .

**Figure 18** My doctor/nurse tells me all I need to know, so I do not bother with the information on *Living Health*

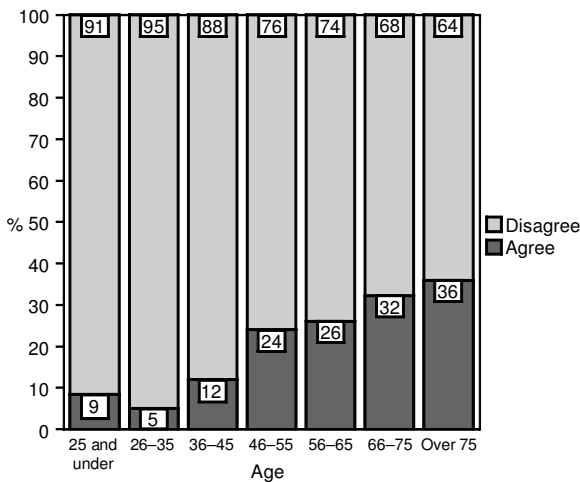
48% of males compared to 33% of women agreed with this statement. Again, older users were more likely to agree compared to younger users. Approximately 70% of those aged 65 or over said that they agreed with this statement. Only 25% of those aged under 45 agreed with this statement (see Figure 19).

Age was also found to relate to non-use as a result of a perceived problem with using the technology. Older users were more likely to report that they did not use the service because they perceived themselves as not being good with technology (see Figure 20). Approximately 30% of users over 55 reported technology as a problem regarding use while 12% or less of users under 45 reported this as an issue. Older users were also more likely to report that they could not find what they wanted (see Figure 21).



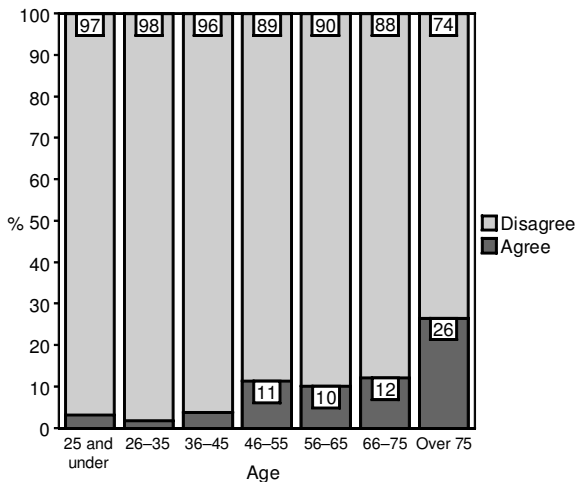
$\chi^2 = 57.9, df = 6, P = 0.000$ .

**Figure 19** I prefer to receive written/printed information from the doctor about a condition



$\chi^2 = 33.8, df = 6, P = 0.000.$

**Figure 20** I do not use the *Living Health* service because I am not very good with technology



$\chi^2 = 21.8, df = 6, P = 0.001.$

**Figure 21** I tried to use the *Living Health* service but could not find what I wanted

## Discussion

The research presented here has identified considerable differences between users and non-users of a health information system delivered via digital television. Further (qualitative) research is needed to find out the reasons behind these differences. The key differences and possible explanations can be summarised as being:

- A clear majority of respondents (72%) had heard of *Living Health*, however, only one in four (23%) said that they had actually used the health information service. Just over one in four (27%) respondents had neither heard of the service nor used it.

- Subscribers were more likely to search for health information on the DiTV service if they had previously phoned NHS Direct in the last 12 months. Further influencing variables included income and information needs. Respondents living in an area with a low incidence of £20 000+ income earners were more likely to use the service, as were users living in areas with a high incidence of 0 to 4 year olds, and if the respondent had an interest in a particular condition. The income result is encouraging in that it supports the argument that DiTV does throw an ICT (information and communications technology) lifeline to those who have traditionally been excluded from the digital revolution – the poor and socially excluded.
- Subscribers who said that they had heard of the system but not used it were less likely to have used NHS Direct in the last 12 months, were more likely to consider the web as an important information source and were less likely to be interested in prescription drugs. For web users, DiTV seems to be a poor information source.
- Well over half (55%) of claimed *Living Health* users queried the service for information about their consultation with the doctor either before, after, or before and after their consultation. This appears to represent an integrated health information acquisition.
- Two-thirds (67%) of claimed *Living Health* users said that the information they obtained had either helped or helped them a lot in becoming better informed; 40% of users felt that the information they found had helped or helped a lot in their dealings with the doctor. Furthermore, one-third of *Living Health* users said that the information found either helped or helped a lot in improving their condition. This constitutes the importance of use of a health information service.
- Women were less likely to find the system useful 'all of the time' compared to men, and were more likely to say that the information offered was full of medical jargon.
- Users from lower income areas were more likely to say the system was useful compared to users from higher income areas, while users located in higher unemployment areas were more likely to say the system was easy to navigate. Further, users with a greater experience of technology were more likely to find the navigation and menu structure easier.
- The age of the respondent was found to relate to how easy the user found it to understand.
- Of non-users, older respondents were more likely to say that their doctor or nurse gave them all the information they needed and that they preferred written or printed information given to them by their doctor.

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