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Investigating the public's use of Scotland's primary care telephone advice service (NHS 24):

a population-based cross-sectional study

Abstract

Background
There has been no comprehensive examination of the public's understanding of, and attitudes towards, NHS 24.

Aim
To investigate the public's use of NHS 24 and explore their understanding of, and beliefs about, the service.

Design and setting
Population-based cross-sectional study of adults in Scotland.

Method
Quantitative data were collected by self-completion postal questionnaire and qualitative data by follow-up telephone interviews.

Results
A corrected response rate of 34.1% (n = 1190) was obtained. More than half (51.0%, n = 601) of responders had used NHS 24. Callers were more likely to be female, have at least one child, and be aged 25–34 years. Most calls (92.4%, n = 549) were made out of hours, and 54.6% (n = 327) were made on behalf of someone else. The main reason for calling was to get advice about a new symptom (69.0%, n = 414). A total of 38.6% (n = 219) of users contacted another health professional following their call, mostly on NHS 24 advice (71.7%, n = 157). Over 80.0% (n = 449) of callers were satisfied with the service and 93.9% (n = 539) would use it again.

Only 8.4% (n = 78) of responders had used the NHS 24 website and 4.6% (n = 53) the NHS inform service. The main reasons for non-use were not needing the service, a preference to see their own GP, and not knowing the telephone number. NHS 24 was mainly viewed as an out-of-hours alternative to the GP. It was not considered an appropriate service for minor symptoms. The main facilitator to use was convenience, whereas the main barrier to use was not knowing how and when to use the service.

Conclusion
Although most people who used NHS 24 were satisfied, others were unclear about how and when to use the service. Further education about the full range of services that NHS 24 offers should be considered.

Keywords
after-hours care; delivery of health care; health services research; interviews; primary health care; questionnaires.

INTRODUCTION

NHS 24 is a telephone advice line that provides help and information to people with health-related problems. Introduced in 2002,[1] NHS 24 is now an established part of NHS Scotland, receiving around 1.5 million calls a year, predominantly out of hours.[2] NHS 24 consists of a network of contact centres accessible through a single telephone number, available 24 hours a day, 7 days a week. NHS 24 is the primary contact point for accessing health care, including GPs, out of hours (similar to the English telephone advice line, NHS 111). Through telephone consultation, aided by clinical algorithms, NHS 24 staff manage callers' health problems, either through the provision of information and advice about appropriate self-care, call backs or visits from relevant clinical staff, or onward referral to another service.

NHS 24 has the potential to reduce unnecessary demands on other NHS services,[3] such as GPs or accident and emergency (A&E) departments. However, studies of other UK telephone advice lines (NHS Direct: England's discontinued telephone advice line, replaced in 2014 by NHS 111) have reported variable use of the service, suggesting lower uptake by disadvantaged groups.[4,5] Although there have been a small number of studies investigating specific components of NHS 24,[6–8] no studies have comprehensively examined how NHS 24 is being used, or have explored the public's understanding of, and attitudes towards, the service. Exploring how and why people do or do not use NHS 24, and determining possible barriers to its use, will help to identify where public education may be required or where the service might require reconfiguration.

As part of a multifaceted assessment of NHS 24, a Scotland-wide survey was conducted to examine the public's use of the service, with follow-up telephone interviews to explore participants' understanding and views about the service.

METHOD

Questionnaire survey

A Scotland-wide population-based postal survey of adults (≥18 years) was undertaken between March and September 2013. Participants were individuals registered with 14 Scottish practices recruited by the Scottish Primary Care Research Network on the authors' behalf. The practices varied in size and rural/urban location, and were based within five area nodes of the Scottish Primary Care Research Network: three west, three east, two south east, two north, and four north east. An age- and sex-stratified random sample of 256 adults was drawn from each practice list. A GP in each practice screened the sample to

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How this fits in

To date, there has been no comprehensive examination of the public's understanding of, and attitudes towards, NHS 24. A Scotland-wide survey was conducted to examine the public's use of the service, with follow-up telephone interviews to explore participants' understanding and views about the service. The study reports the public's understanding of, and attitudes towards, NHS 24 and the barriers and facilitators to its use. The results suggest that further education about the full range of services that NHS 24 offers should be considered.

exclude anyone for whom they felt the questionnaire would be inappropriate, for example, individuals with terminal illness or severe mental health problems. Remaining individuals were sent a questionnaire asking about their experience of using the NHS 24 telephone service, frequency of use, reasons for using/not using the service, and satisfaction with the service. The questionnaire also included questions about the NHS 24 website, NHS inform (the NHS health information service), sociodemographics, general health, use of health services, and access to health services. Non-responders were sent a reminder after 3 weeks. Descriptive analyses were used to explore the data. χ^2 tests examined differences between groups. To identify factors independently associated with use/non-use of the NHS 24 telephone service, binary logistic regression was used to calculate unadjusted odds ratios and adjusted odds ratios (AOR), together with their 95% confidence intervals (CI) and *P*-values. Only factors significant in univariate analysis were included in the multivariate analysis.

Telephone interviews

Two semi-structured topic guides — one for users of NHS 24 and one for non-users — were developed to explore knowledge and understanding of NHS 24, reasons for use and non-use, reasons for satisfaction/dissatisfaction with calls, and barriers and facilitators to use. Interviewees were drawn from questionnaire responders who had agreed to participate in further research and comprised three groups: satisfied users, dissatisfied users, and non-users. Purposive sampling was used to try to obtain as broad a range of interviewees as possible with respect to sociodemographic characteristics. Interviews were conducted between July and September 2013. The interviews were anonymised, transcribed verbatim, and imported into a qualitative data software package (NVivo version 10) to aid analysis. Transcripts were independently checked for quality and reviewed extensively by the research team. Data were analysed using thematic analysis.[9,10] The coding framework was developed in an iterative process, using a deductive approach to explore themes identified as being of interest before the interviews, and an inductive approach to identify themes that emerged during the interviews.

RESULTS

Questionnaire survey

A total of 3515 questionnaires were dispatched. From these, 1190 were returned completed, giving a corrected response rate of 34.1%. Table 1 shows the characteristics of the questionnaire responders.

Almost half (49.5%, *n* = 589) of the questionnaire responders had never used the NHS 24 telephone service. The most common reasons for non-use were: lack of need (79.4%, *n* = 462), a preference to see their own GP (23.5%, *n* = 137), and not knowing the telephone number (15.8%, *n* = 92).

'Ever users' of the service (50.5%, *n* = 601) were significantly more likely to be female than male (AOR = 1.70, 95% CI = 1.29 to 2.25), aged 25–34 years (AOR = 2.19, 95% CI = 1.11 to 4.29) (with an overall trend of declining use with age), and have at least one child (AOR = 1.75, 95% CI = 1.19 to 2.58). Those who had not consulted a health professional in the previous year were significantly less likely to use the service than those who had (AOR = 0.54, 95% CI = 0.36 to 0.82) (Table 2).

Over half (58.9%, *n* = 351) of the 'ever users' reported that they had used the service more than once and just under half had used it in the last year (47.4%). Most calls (92.4%, *n* = 549) were made out of hours and from the caller's own home (88.7%, *n* = 526). Over half (54.6%, *n* = 327) of the calls were made on behalf of someone other than the caller, usually the caller's child or partner. The most common reasons given for using NHS 24 were: the problem occurring out of hours (87.5%, *n* = 484), being too ill to leave home (16.5%, *n* = 91), and not knowing who else to contact (8.9%, *n* = 49). A new symptom accounted for 69.0% (*n* = 414) of calls, whereas 28.5% (*n* = 171) were about an ongoing problem, and 2.5% (*n* = 15) were for general health advice or information about local services. (Table 3).

Over one-third (38.6%, *n* = 219 out of 567)

Table 1. Characteristics of questionnaire responders

Category	Characteristic	*n*	%
Sex (*n* = 1175)	Male	558	47.5
	Female	617	52.5
Age group, years (*n* = 1179)	18–24	86	7.2
	25–34	102	8.6
	35–44	146	12.4
	45–54	178	15.1
	55–64	212	18.0
	65–74	198	16.8
	≥75	257	21.8
Marital status (*n* = 1182)	Single	204	17.3
	Married/living together	756	64.0
	No longer living together	222	18.8
Number of children (*n* = 1170)	None	343	29.3
	One or more	827	70.7
Educational status (*n* = 1108)	No educational qualifications	238	21.5
	Secondary school or equivalent	393	35.5
	Higher education	477	43.1
Housing tenure (*n* = 1170)	Owned/mortgaged	904	77.3
	Rented from council/housing association	141	12.1
	Rented from private landlord	95	8.1
	Other	30	2.6
Employment status (*n* = 1174)	Work full-time	364	31.0
	Work part-time	121	10.3
	Self-employed	83	7.1
	Others not in paid employment	98	8.3
	Retired	505	43.0
	Other	3	0.3
Annual household income, £ (*n* = 984)	<15 000	288	29.3
	15 000–29 999	292	29.7
	30 000–49 999	213	21.6
	≥50 000	191	19.4
Ethnic group (*n* = 1164)	White	1145	98.4
	Other	19	1.6
Smoking status (*n* = 1175)	Current smoker	165	14.0
	Ex-smoker	363	30.9
	Never smoked	647	55.1
Access to a telephone at home (*n* = 1173)	Yes	1150	98.0
	No	23	2.0
Access to internet at home (*n* = 1174)	Yes	910	77.5
	No	264	22.5
Social support (*n* = 1411)	Low support	48	3.4
	Medium support	406	28.8
	High support	957	67.8
General health (*n* = 1159)	Excellent	180	15.5
	Very good	342	29.5
	Good	358	30.9
	Fair	194	16.7
	Poor	85	7.3
Chronic condition (*n* = 1188)	Yes	754	63.5
	No	434	36.5
Consulted health professional in last year (*n* = 1173)	Yes	1030	87.8
	No	143	12.2
Overall access to services (*n* = 610)	Good	252	41.3
	OK	189	31.0
	Poor	169	27.7

of users reported contacting another health professional about the problem following their call to NHS 24. Of these, 71.7% (*n* = 157 out of 219) had been advised by NHS 24, 24.2% (*n* = 53 out of 219) resulted from a decision of the responder themselves, and 4.1% (*n* = 9 out of 219) resulted from family advice. Of those who contacted another health professional, 58.9%, (*n* = 129 out of 219) contacted their GP, 23.3% (*n* = 51 out of 219) contacted A&E or 999, and 11.4% (*n* = 25 out of 219) contacted the local out-of-hours centre.

Satisfaction with the service was high, with >80% of users stating that they were either satisfied or very satisfied with a range of aspects of the service (Table 4). Education was the only sociodemographic factor associated with satisfaction (*P* = 0.012), with higher educated participants being less satisfied. Most users (93.9%, *n* = 539 out of 574) said that they would use NHS 24 again, because they had little choice if they needed out-of-hours care (71.7%, *n* = 386 out of 538), they found it helpful (61.5%, *n* = 331 out of 538), it was convenient (29.6%), and it was quick (26.0%). Of the small number who said that they would not use it again (*n* = 35), 48.6% (*n* = 17 out of 35) had found it unhelpful, 34.3% (*n* = 12 out of 35) would rather speak to their own GP, and 31.4% (*n* = 11 out of 35) would prefer to see someone in person.

Only 8.4% (*n* = 78 out of 928) of responders reported that they had used the NHS 24 website, although 38.1% (*n* = 428 out of 1123) were aware of it. Females, younger responders (18–44 years old), those with higher education, those who were not retired, those with a higher household income, and those with internet access at home were significantly more likely to have used the website. Of the website users, 83.8% (*n* = 62 out of 74) rated the information provided as either good or very good, 85.1% (*n* = 63 out of 74) rated it as easy or very easy to use, and 92.1% (*n* = 70 out of 76) said they would use it again. Only 4.6% (*n* = 53 out of 1150) of responders reported ever having used the NHS inform telephone service and 2.3% (*n* = 21 out of 927) the NHS inform website; awareness of these services was 33.6% (*n* = 381 out of 1134) and 17.6% (*n* = 178 out of 1010), respectively.

Telephone interviews

Interviews were conducted until data saturation was reached. A total of 30 people were interviewed. Table 5 shows the characteristics of interviewees. Some interviewees were unclear about the role of the service:

Table 2. Logistic regression analysis of using NHS 24 compared with not using NHS 24

Category	Characteristic	UOR (95% CI)	AOR (95% CI)
Sex	Male	1.00	1.00
	Female	1.86 (1.47 to 2.32)	1.70 (1.29 to 2.25)
Age group, years	18–24	1.00	1.00
	25–34	2.90 (1.60 to 5.27)	2.19 (1.11 to 4.29)
	35–44	2.59 (1.50 to 4.47)	1.94 (0.98 to 3.81)
	45–54	1.63 (0.97 to 2.74)	1.29 (0.66 to 2.52)
	55–64	1.62 (0.97 to 2.68)	1.01 (0.51 to 1.97)
	65–74	0.86 (0.52 to 1.45)	0.57 (0.25 to 1.28)
	≥75	1.07 (0.65 to 1.76)	0.73 (0.32 to 1.68)
Marital status	Single	1.00	
	Married/living together	1.50 (1.10 to 2.05)	–
	No longer married	1.02 (0.70 to 1.50)	–
Number of children	None	1.00	1.00
	One or more	1.54 (1.20 to 1.99)	1.75 (1.19 to 2.58)
Educational status	No educational qualifications	1.00	
	Secondary school or equivalent	1.56 (1.13 to 2.16)	–
	Higher education	1.60 (1.17 to 2.19)	–
Housing tenure	Owned/mortgaged	1.00	
	Rented from council/housing association	1.03 (0.72 to 1.48)	–
	Rented from private landlord	1.10 (0.72 to 1.68)	–
	Other	1.49 (0.71 to 3.12)	–
Employment status	Work full-time	1.00	
	Work part-time	1.41 (0.93 to 2.15)	–
	Self-employed	0.98 (0.61 to 1.58)	–
	Others not in paid employment	1.16 (0.74 to 1.81)	–
	Retired	0.69 (0.53 to 0.91)	–
Annual household income, £	<15 000	1.00	
	15 000–29 999	1.30 (0.94 to 1.80)	–
	30 000–49 999	1.27 (0.89 to 1.81)	–
	≥50 000	1.26 (0.88 to 1.82)	–
Smoking status	Current smoker	1.00	
	Ex-smoker	1.11 (0.78 to 1.61)	–
	Never smoked	1.27 (0.90 to 1.79)	–
Access to telephone at home	Yes	1.00	
	No	1.27 (0.55 to 2.92)	–
Access to internet at home	Yes	1.00	
	No	0.61 (0.46 to 0.81)	–
Social support	Low social support	1.00	
	Medium social support	1.62 (0.87 to 3.00)	–
	High social support	1.96 (1.07 to 3.60)	–
General health	Excellent	1.00	
	Very good	0.98 (0.68 to 1.41)	–
	Good	0.86 (0.60 to 1.24)	–
	Fair	1.08 (0.72 to 1.62)	–
	Poor	1.16 (0.69 to 1.94)	–
Chronic condition	Yes	1.00	
	No	1.04 (0.82 to 1.32)	–
Consulted health professional in last year	Yes	1.00	1.00
	No	0.56 (0.39 to 0.80)	0.54 (0.36 to 0.82)
Overall access to services	Good access	1.00	
	OK access	1.15 (0.78 to 1.70)	–
	Poor access	0.85 (0.57 to 1.25)	–

Only those significant at univariate level (P<0.05) were included in the multivariate analysis. AOR = adjusted odds ratio; adjusted for sex, age, marital status, number of children, education, employment, access to internet, level of social support, and consulted health professional in last year, except when the variable itself was being examined. UOR = unadjusted odds ratio.

'Em, that it exists is probably about all that I do know.' (K4645)

However, most saw NHS 24 as an out-of-hours alternative to the GP; that is, to be used when their health problem was serious enough to need medical advice, but not serious enough to telephone 999:

'Em, just I suppose it's kind of em, emergency contact that's somewhere between your GP and calling 999 ... if you've got a sort of, sort of serious medical em, complaint that doesn't merit phoning an ambulance, you would, you genuinely feel you need either advice or direct treatment or information, that you think you shouldn't wait until, you know, the doctors open the next day.' (A39)

Many interviewees said they would not use NHS 24 if the symptom was minor:

'I wouldn't waste somebody's time if I was, if I didn't think it was worthwhile, you would have, it would have to be, you know, you wouldn't phone up for like a cold, or a headache or something like that, but if it was something like really, really, if you had a nasty rash of some sort, you know, all of a sudden it appeared, it kind of, all of a sudden kind of thing, or, or, you passed out, or fainted you know, that kind of thing.' (D1697)

Reasons for using the service related predominantly to a lack of alternatives for out-of-hours care, particularly in rural areas. Many interviewees said they would only use the service out of hours:

'I don't use it if I've got another alternative, like if I can reach my own doctor, so I think it should only be used when you don't have another alternative, you know, i.e. out of clinic hours.' (G3101)

'Well, I mean, in an emergency, I mean, if it's a weekend, then there's no surgeries are open, and we live quite a long way from em, well we're 20 odd miles from [place], *and em, you know, if you take ill, you can't go anywhere, can you, I mean I don't drive you see, so I mean, I could, I mean if I fall down now, and nobody knows about it, I would probably have to call NHS 24.'* (J4195)

'Yeah, I think what I've learned from using NHS 24 is that if you can see somebody within hours, that knows you, in your local practice, that's optimal, but if you really feel you can't wait, then NHS 24 is, it's good, it's there, somebody with medical em,

Table 3. Responders' use of NHS 24

Question	Answer	*n*	%
How many times used NHS 24 telephone in total	Once	245	41.1
	2–5 times	279	46.8
	6–10 times	54	9.1
	>10 times	18	3.0
How many times used NHS 24 telephone in past year	None	312	52.6
	Once	181	30.5
	2–5 times	91	15.3
	>5 times	9	1.5
When was your call?	During normal hours	45	7.6
	Out of hours	549	92.4
Where were you?	At own home	526	88.7
	Other	67	11.3
Who was the call for?	You	272	45.4
	Your child	114	19.0
	Your spouse/partner	119	19.9
	Your parent	34	5.7
	Another relative	33	5.5
	Neighbour	5	0.8
	Other	22	3.7
Reasons for using NHS 24 instead of another service[a]	Out of hours	484	87.5
	Too ill to leave home	91	16.5
	Don't know who else to contact	49	8.9
	It was quick — no waiting time	45	8.1
	It was convenient	31	5.6
	Don't want to bother GP	23	4.2
	Could not get a GP appointment	21	3.8
	Unhappy with previous health professional	7	1.3
Reason for calling NHS 24	Advice about a new symptom/problem	414	69.0
	Advice about an ongoing symptom/problem	171	28.5
	General health advice or local information	15	2.5

[a]*More than one reason could be given.*

expertise is available, which is great, but like I say, optimally seeing your doctor, who knows you.' (K4574)

Others had used it during the day when they could not be seen quickly at their local practice. NHS 24 was seen to be a convenient and accessible choice for advice without having to leave home, especially if there was uncertainty about whether medical attention was required and meant avoiding 'wasting' other NHS resources:

'Unless you get an appointment with her [doctor] *somewhere like 8.30 in the morning, they generally tell you to call NHS 24, you know, because you can't get, it's difficult, you don't know when you're going to be ill these days, but you can only really get an appointment in a fortnight.'* (G3219)

'I don't like to waste time, anyone's, you know, time if the situation is not severe enough that it really needs to be addressed in that situation, so I'd rather be able to speak to someone over the phone and decide this can wait until she can go into her regular doctor, you know, I like being able to have that service where we discuss it and I can make a decision with someone over the phone, em rather than taking her in if she doesn't need to be, you know, seen in that sort of a situation.' (G3101)

The most common reason given for not using NHS 24 was that it had not been needed, often because there was a good GP service. Other reasons given included not feeling comfortable talking on the phone, ease of going to A&E, a previous poor experience, a preference to see someone (usually their GP) in person, and concern about NHS 24 staff not being doctors:

'My GP has a phone-back service, so if you have a problem, you phone the GP, they then call you back and assess whether or not you need an appointment, so I would not anticipate requiring NHS 24 during doctors' hours.' (G3104)

Table 4. Satisfaction with calls to NHS 24

Question	Satisfaction level	Most recent call to NHS 24		All calls to NHS 24	
		n	%	*n*	%
Satisfied with the way the call was handled (*n* = 573 for most recent call, *n* = 562 for all calls)	Very dissatisfied	19	3.3	17	3.0
	Dissatisfied	26	4.5	30	5.3
	Neutral	47	8.2	49	8.7
	Satisfied	243	42.4	246	43.8
	Very satisfied	238	41.5	220	39.1
Satisfied with manner of person handling the call (*n* = 568 for most recent call, *n* = 558 for all calls)	Very dissatisfied	15	2.6	14	2.5
	Dissatisfied	16	2.8	16	2.9
	Neutral	43	7.6	58	10.4
	Satisfied	233	41.0	235	42.1
	Very satisfied	261	46.0	235	42.1
Satisfied with how seriously the call was taken (*n* = 562 for most recent call, *n* = 559 for all calls)	Very dissatisfied	16	2.8	18	3.2
	Dissatisfied	25	4.4	25	4.5
	Neutral	35	6.2	45	8.1
	Satisfied	201	35.8	224	40.1
	Very satisfied	285	50.7	247	44.2
Satisfied with the way the problem was resolved (*n* = 565 for most recent call, *n* = 555 for all calls)	Very dissatisfied	21	3.7	19	3.4
	Dissatisfied	29	5.1	32	5.8
	Neutral	48	8.5	60	10.8
	Satisfied	200	35.4	212	38.2
	Very satisfied	267	47.3	232	41.8
Overall satisfaction with service received (*n* = 564 for most recent call, *n* = 556 for all calls)	Very dissatisfied	26	4.6	24	4.3
	Dissatisfied	27	4.8	27	4.9
	Neutral	43	7.6	56	10.1
	Satisfied	196	34.8	213	38.3
	Very satisfied	272	48.2	236	42.4

'I prefer speaking to somebody face to face and getting, reading them, rather than listening to them, I'm not a big phone person anyway, to be truthful.' (J4101)

'I still would go on my own instincts rather than listening to somebody at the other end of a phone or on the computer, I would say, well, if I thought it was bad enough I'd just go to A&E ... what I think about NHS is, you're just speaking to somebody like myself, rather than a doctor, you know, it's not doctors you're speaking to really, is it?' (J4101)

For a few, mostly older interviewees, there was a lack of knowledge about when or how to use the service, and some simply had a preference for more familiar services, such as 999:

'Em, I, I think, it's maybe because I've never used it, but em, actually I wouldn't know where to start to use, if you see what I mean, I know it exists, and I know somehow I must be able to get in touch with it, but I couldn't honestly tell you how I would get in touch with it, you know.' (D1712)

'Well, I automatically went for 999, because ... em, I felt, you know, it was just, in my head was 999, forever, it's been there.' (G3018)

Interviewees were broadly satisfied with most aspects of the staff and service:

'Well, I don't think it could have been done any better, I mean obviously the first person that I spoke to was purely a telephone operator, you know what I mean, a person that manages the calls, and they listened, and fortunately, you know, she'd spoken, the operator spoke to my wife, she immediately em, put her onto a doctor, and the doctor asked the questions and my wife answered, and then you know, there was no delay in the action NHS 24 took, so as I say, that's the repeat, it was first class, and I wouldn't fault it in any way.' (A217)

People generally understood the reasons for delays, accepting that the service can be busy and needs to prioritise calls:

'Em, sometimes they can take a wee while phoning back, but that's because they are prioritising after assessing, and you know, obviously mine, the things I've been anxious about have never been so bad that I would, you know, that I should, I should take priority, but you can't have an infinite number staff waiting to answer the phone.' (A39)

The most common area of dissatisfaction related to the initial triage questions. Although most interviewees understood the need for these questions, they felt they were lengthy, repetitive, and prescriptive:

'I was really ill, and eh, I was getting angry because eh, because I just felt that, she should get me onto a nurse and stop asking me questions, you know, I felt it went on too long.' (A111)

'I gave him a brief, em, history of my husband's cardiovascular problems and said what had happened that evening, but he wasn't listening or getting the picture, he was still ticking boxes, "is he blue in the face?", em, "has it sagged on one side?", these sort of questions. He was obviously thinking of a stroke, or he'd got his list of questions, which he felt he had to tick the boxes, em, and after a while I got a bit em, concerned, because this was going on and I wanted my husband looked at quickly.' (G3018)

Interviewees also expressed dissatisfaction with the length of time it took to receive visits and not being kept informed:

Table 5. Characteristics of interviewees

Category of use	Participant ID	Sex	Age group	Marital status	Employment status	Level of education
Used NHS 24 and satisfied with the service	A111	Female	75–84	Widowed	Retired	Unknown
	A195	Male	55–64	Married	Full-time	Unknown
	A217	Male	65–74	Married	Retired	Higher education
	K4643	Female	55–64	Living together	Retired	Higher education
	K4574	Female	35–44	Married	Part-time	Higher education
	K4607	Female	45–54	Widowed	Full-time	Higher education
	K4688	Male	65–74	Married	Retired	Higher education
	K4694	Female	75–84	Widowed	Retired	Higher education
	G3155	Male	45–54	Married	Full-time	Unknown
	G3101	Female	45–54	Married	Full-time	Higher education
	G3115	Female	65–74	Married	Retired	Higher education
	A39	Female	35–44	Married	Part-time	Higher education
Used NHS 24 and not satisfied with the service	K4625	Male	45–54	Married	Full-time	Secondary school
	K4675	Female	65–74	Widowed	Retired	Higher education
	K4684	Male	65–74	Married	Retired	Higher education
	G3169	Male	18–24	Single	Student	Secondary school
	G3219	Male	35–44	Married	Full-time	Higher education
	G3104	Female	45–54	Widowed	Self-employed	Higher education
	J4195	Female	75–84	Married	Retired	Secondary school
	G3018	Female	≥85	Married	Retired	Higher education
	J4200	Female	75–84	Married	Retired	Secondary school
Had not used NHS 24	K4601	Female	45–54	Married	Part-time	Higher education
	G3160	Male	65–74	Married	Retired	Secondary school
	K4718	Male	75–84	Single	Retired	Higher education
	D1712	Male	65–74	Married	Retired	Higher education
	G3231	Male	55–64	Divorced	Student	Higher education
	J4098	Male	45–54	Married	Full-time	Higher education
	K4645	Male	55–64	Married	Full-time	Higher education
	J4101	Female	45–54	Married	Self-employed	Secondary school
	D1697	Male	55–64	Married	Full-time	Higher education

'They don't give you ... you could be sitting there for under an hour to up to 6 hours, it would be better if they would say to you, "listen, we'll try and get someone there within 2 hours". At least then, you are not just sitting looking at the clock and checking every time you hear a car outside the house. And if I'd known it was going to be as long as 6 hours, I would have taken my mother to the hospital myself.' (G3219)

The most common barriers reported related to the triage questioning, not knowing how to access NHS 24, concerns about the fact that NHS 24 staff do not have access to existing medical records, finding it difficult to talk about illness on the telephone, and believing it is more difficult to tell over the phone whether someone is really ill:

'I know there's quite a lengthy process of em, em, what do you call it, just like eh, "what's your name, where do you live, what" ... it takes quite a while to get through, so I think if I was really stressed about something, I'd probably phone 999, just for, just eh, it's just a lengthy process before you actually get to somebody to give you medical advice.' (K4574)

'It's just so difficult over the telephone, whereas a GP would just take one look at your child and say "well, he's okay", or "he needs to go and get an X-ray", em. So yeah, it's reassuring, but it's also, it also can lead you into a bit of a, a panic as well, em, I mean in the instance, our son, they told us what to look for, and he was fine in the end, but because we were looking so hard for these signs, we almost over-reacted, so, yeah.' (K4574)

The most common facilitators related to the convenience of not needing to go out (especially for those with young children and those with mobility difficulties), availability out of hours, not needing to make an appointment, being easily accessible, feeling that other NHS resources were not being wasted unnecessarily, 'anonymity' of speaking to someone over the telephone, and the benefit of getting early medical attention for a problem:

'Em, just the fact that you know somebody will answer the phone, and will speak to you, which if you, I mean we live quite far out, we are an hour out from [place], *and em, obviously it was out of hours, if something happens in the night or whatever, and you do feel a bit, what's my options here, so knowing that you can pick up the phone and that somebody will answer and give you some advice, is good.'* (K4574)

'I'm confident in the fact that the earlier I make a complaint, or ask a question, eh the better the outcomes, you know, the better the results, although they're never guaranteed of course, but the probability of, what I would view a success goes up the earlier I present it, so I think NHS 24 in that scenario is absolutely fantastic.' (G3155)

Interviewees living in rural areas reported benefits of living in a community where you can get appointments and home visits relatively quickly, factors mitigating against the need for NHS 24:

'We live in a rural area, which has an exceptionally good GP service, for this day and age, eh compared to most people I know, you know, we actually have GPs who you can phone out of hours, who will even just pop round and see you unexpectedly, just to see if you're all right, so em, things

like that, so yeah, good GP, small rural community, em, it's the best place to be, I think, sometimes, but that's why personally I haven't had the need to, for those two reasons.' (K4645)

However, concerns about distance to the nearest out-of-hours centre or A&E, and the small number of doctors and ambulances covering large geographical areas, meant NHS 24 was seen as useful:

'Well, in these four occasions, very useful, eh as I said, a moment ago, we are 40 miles from the nearest A&E, other, there's minor eh, accident A&E at [place]*, but that's just really small stitches and things like that, but eh, you don't want to go an 80 mile return trip just to find out something, so it is very useful to have a contact to, eh to consider whether something is serious enough to see a doctor.'* (K4688)

Some interviewees highlighted that poor local knowledge of NHS 24 staff was sometimes problematic:

'Em, the only slight problem was the fact that the lady that I spoke to initially, em, clearly, I mean it's not her fault, but she was not familiar with the area of where I am, and she didn't know whether to send me to [place] *or em,* [place] *that there's a small hospital there, and that was only because, you know, she's probably looking at a computer screen, and em, you know, she could have been in Manchester or somewhere, I don't know where these people are based.'* (K4607)

Suggestions for improving NHS 24 included quicker response times, having more medically trained people answering the phone, less repetition, and making people more aware of how and when to use the service:

'Em, I think eh, more medically trained people answering the phone and able to know what people are saying to them.' (G3018)

'I would say that if you're the patient could you please give your details once, maybe have them a little bit checked if the em, gentleman at the other end has a little bit of concern, em, I can't see that you need to go through things so many times.' (J4200)

'Slightly better publicity, em, perhaps to what the numbers and reasons are for using NHS 24, and to be honest for someone like me, I'd most like to see that in a GP's practice, because I'm, I'm regularly in the practice, so I'm more likely to see it there.' (J4098)

DISCUSSION

Summary

Just over half of the questionnaire responders had used the NHS 24 telephone service, with use varying between sociodemographic groups. Most calls were in response to a new symptom and were made out of hours. Satisfaction with the service was high. NHS 24 was generally viewed as an out-of-hours alternative to the GP, and was not considered an appropriate service for minor symptoms. The service was deemed to be valuable for avoiding wasting other NHS resources. Some aspects of the service encouraged use, such as availability out of hours and convenience, whereas others discouraged use, for example, the triage process and preference for face-to-face contact. There was some uncertainty about how or when NHS 24 should be used. Use of the service appeared to be influenced by several external factors, such as location and ease of access to other services.

Strengths and limitations

This is the first Scotland-wide population-based study to examine how people use NHS 24 and to explore their perceptions about the service. Consistency of findings between the questionnaire and interviews adds validity to the findings, with the interviews reinforcing many of the survey findings, while providing greater depth to our understanding of responses. Participants were drawn from a range of geographical areas across Scotland, and allowed exploration of how the service is used or thought of in rural and urban areas, as well as in affluent and deprived areas. By including both users and non-users of the service, it was possible to get a clearer understanding of why some people use the service whereas others do not, and to provide possible indicators of where the service could be improved. A comparison of the age and sex characteristics of 'ever users' from the study sample (conducted in 2013) with all users of NHS 24 in 2011[11] showed the study sample to be broadly representative of all users. Users were significantly more likely to be female and aged <35 years, with an overall trend of declining use with age, in both the study sample and the national dataset.

Consistent with other general population surveys, the response rate to the study

questionnaire was low, and this may have introduced bias. The deliberate inclusion of areas of high deprivation,[12] to explore possible variation of use by different socioeconomic groups, and targeting of non-users as well as users,[13] probably contributed to the low response rate. Because people are more likely to respond to questionnaires they find relevant, it is possible that those who responded were more likely to have used the service, thus overestimating prevalence of use. Similarly, responders may have had more extreme (good or bad) views about the service than non-responders. There were relatively few responders from some of the sociodemographic groups; for example, young people, people from non-white populations, and individuals with low social support. It is not known whether these groups have different concerns regarding NHS 24 or whether additional recommendations specific to these groups would be required. Purposive sampling for the interviews ensured participation from three main groups — satisfied users, dissatisfied users, and never users — allowing a range of views to be obtained.

Comparison with existing literature

The finding that females and people with children are higher users of the service is consistent with studies examining the use of NHS Direct.[4,14] The finding that younger adults and older individuals are less likely to call is also consistent with previous studies of NHS Direct.[5,15] The relationship between age and the use of NHS 24 is important because it suggests that older individuals may be less familiar with, or have less desire to use, the service despite the fact that they are likely to have poorer health than younger adults. Previous studies have shown that awareness of NHS Direct declines with age.[16,17] The uncertainty about how and when to use the service described by some of the older interviewees suggests a need for targeted promotion of the service to this group. The recent introduction of the simpler freephone contact number 111 in Scotland may at least help to overcome some of the uncertainty about how to use the service. This study found no direct relationship between household income and use of NHS 24, although there were indications that other socioeconomic factors, such as level of education, may be important. Studies examining the relationship between deprivation and use of NHS Direct have reported inconsistent findings.[4,5,15,18,19]

Interviews in this study highlighted a breadth of issues that come into play when people decide whether or not to use NHS 24. Some factors, such as waiting a long time for a call back or dissatisfaction with the triage process, have been identified previously in relation to NHS Direct.[20] Similarly, availability of, and accessibility to, other services has also been shown to influence use of out-of-hours services,[21] as well as how the call is managed.[22] This study has highlighted that people also consider a range of other factors when deciding whether to call, including the nature of the symptom or problem; for example, how serious it is, perceptions of the skills or expertise of NHS 24 staff, and the impact on the use of other NHS resources.

Implications for practice

This study provides important new insights into how NHS 24 is used, how it is perceived, and the barriers and facilitators to its use. Overall, this study indicates that most callers are satisfied with the service provided by NHS 24 and find it a useful resource when they have a health-related concern out of hours. However, for some, particularly for older people, there appear to be misunderstandings about the service and how and when to use it. Public education about NHS 24 and the range of services it provides should be considered, especially among older age groups.

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Ethical approval

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Provenance

Freely submitted; externally peer reviewed.

Competing interests

Lewis D Ritchie served as a non-executive director of NHS 24 from November 2001 to October 2007.

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