

What Factors Influence User Satisfaction in Accessing Health Data?: Insights from a Nationally Representative Survey Study of UK Adults.

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Abstract

Background: Personal Health Records (PHRs) are increasingly promoted as tools to enhance patient engagement and healthcare efficiency. Despite their growing prevalence, limited evidence exists from nationally representative samples assessing PHR satisfaction—especially when comparing individuals with and without prior PHR experience.

Objective: To examine determinants of PHR user satisfaction in a nationally representative UK sample by comparing individuals with experience using PHRs to those without, including perceptions of utility, functionality, and cost-related benefits.

Methods: We surveyed a nationally representative sample of UK adults (N = [insert N here]) through an online panel. Participants were divided into two groups: (1) those with PHR experience, who answered perception-based questions about actual use, and (2) those without PHR experience, who responded to analogous questions framed hypothetically. Descriptive statistics and t-tests were used to compare satisfaction levels, perceived utility, and feature valuation across the two groups. Results were also benchmarked against data from Canadian users for broader context.

Results: Respondents with PHR experience rated their systems positively on ease of use, scheduling efficiency, and provider communication. UK users scored PHRs slightly lower than Canadian counterparts, though systems differed in design. Both groups highly valued access to health information, lab results, and appointment scheduling. Participants reported avoiding some clinic and emergency visits due to PHR use, resulting in savings on transportation, parking, and time off work. Those without experience tended to overestimate their ability to manage family members' health and had high expectations for PHR functionality—expectations that were not implausible but reflected current implementation gaps. Experienced users also expressed interest in broader data access and greater system convenience.

Conclusions: PHR usage in the UK is associated with high user satisfaction and tangible material and non-material benefits. However, there is a gap between expected and actual functionality, particularly among non-users. Policymakers and developers should consider these findings when expanding access to PHRs and improving their usability and feature set. This study adds value by using a nationally representative sample and by comparing both user and non-user perspectives.

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Original Manuscript

What Factors Influence User Satisfaction in Accessing Health Data? Insights from a Nationally Representative Survey of UK Adults

Jan 2022

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Abstract

Background: There is a lack of evidence on what patient health record (PHR) users desire from the PHR that they use on a national level in the UK.

Objectives: We aimed to investigate the determinants of user satisfaction (1) when participants have experience in PHR usage in the UK and (2) when participants have no experience in PHR usage.

Methods: A survey of views regarding PHRs was distributed in the UK to a nationally representative sample of participants. Those with experience in PHRs were asked questions regarding their preferences and experiences with PHRs. Those without experience in PHRs were asked analogous questions about their hypothetical preferences regarding PHRs. The survey questions largely replicated a survey distributed to a sample of PHR users in Canada.

Results: A national representative sample of 1001 UK participants consented to the study. Of respondents with experience in PHR usage, 79% (370/468) reported that the PHR is easy to use. Participants with no experience in PHR usage reported as 99% (528/533) would use the PHR to access their own health information, similar to the 96% (449/468) of the users with PHR experience. Moreover, among the participants with no PHR usage experience, 49% (261/533) reported that the PHR would save them time in scheduling an appointment, almost the same as the 48% (225/468) of users with experience in using PHR. Comparison t-tests between the two groups concluded that sex did not play an important role in the completion of the questionnaire. Applying multivariate analysis of variance (ANOVA) we assumed that in the UK population, experience with PHRs is uncorrelated with demographic traits and that we have obtained a sample that is approximately nationally representative for both groups.

Conclusions: Both groups of users would like to have access to their health data. The access to their health information would save them time in clinical visits, travelling costs, and rescheduling appointments. Similarities with the Canadian and UK populations were reported. However, further in-depth research is needed to investigate what users would like from their PHR.

Keywords: user satisfaction; patient health records.

Introduction

Patients across the world increasingly desire and expect electronic access to their health data [1], and many countries are putting patients at the center of their care team [1]. This can be achieved in one of two ways: electronic medical records (EMRs) or patient health records (PHRs) [2-8].

EMRs, also known as tethered solutions, allow patients access to their data with the health institution

where that data is stored. However, the patients can only view that institution's data, and they cannot then share that data with clinicians working in other health institutions [2-8].

PHRs, which are untethered solutions, are defined as "an electronic application through which individuals can access, manage and share their health information in a secure and confidential environment. It allows people to access and coordinate their lifelong health information and make appropriate parts of it available to those who need it" [9]. A crucial feature is that patients can access and control their data independently of the institution.

There is some evidence that PHRs can reduce costs and improve outcomes by empowering patients to improve their self-care, improving the patients' satisfaction, and creating better communication and engagement with clinicians [10,11]. Previous research shows that activated patients can achieve higher levels of self-care and satisfaction by sharing all clinical notes with their clinical team, reducing their clinical workload, and improving the health information exchange [12,13]. A recent study [14] investigated the effect of a patient portal on patient satisfaction and missed appointment rates in Canada. They concluded that PHR users showed positive patient satisfaction, a measured decrease of the appointment rates, and a decrease in their usage of the Canadian health system.

A systematic review on the effect of patient portals in clinical care concluded that although PHRs are popular and positively used by patients, there remains a great deal of uncertainty regarding their utilization and their effect on efficiency [15]. This underscores the need for more substantive research on PHRs that focuses on the details of how patients use them and on the impact of PHR usage on the healthcare delivery process.

In the United Kingdom 73% of the population uses the internet as the main source to obtain and manage their health data [16,17]. The Department of Health highlights the importance of patients having access to their health information, thus embracing a culture of "no decision about me without me" [17]. To date, there is limited research in the UK to evaluate user satisfaction when using a PHR and its features [18].

Most existing studies on PHR user satisfaction have been on samples of users of specific systems and thus not nationally representative. With increasing PHR usage, it is now possible to investigate experiences in a large, nationally-representative sample. The objective of this paper is to do that, replicating the aforementioned Canadian study [14], but using a large, UK-based sample. [19]. Given the large size of the UK (a population of 67 million) and the existence of a publicly-funded health system (the National Health Service; NHS), these attributes of our study render it of interest to healthcare stakeholders in general, and not just those residing in the UK.

Finally, this study complements the existing literature by gathering data on attitudes toward PHRs for people who have no experience with PHRs, rather than focusing exclusively on those who do have experience. Given that this former group constitutes around half of the UK's adult population, and given the desire to expand PHR access to the entire adult population, the views of this group constitute an important component of public opinion. Moreover, our dataset allows us to contrast the views of those who do have experience with PHRs to the views of those without such experience.

Methods

Design

We employed a nationally representative survey of adults living in the UK. Participation was anonymous, and data was self-reported by the participants. This study is classified as a system evaluation according to the NHS REC tool [20]. Due to the anonymized nature of the data collected, the study is exempt from research ethics approval.

Patient Health Record

Though the survey inquired about people's views about PHRs (see below), it did not require

experience with PHRs. However, approximately half of the participants did have experience, and in the majority of those cases, the experience would have included the NHS application [21], which has over 22 million users [22].

The NHS in England has introduced a new (smartphone or tablet) app for patients, called “the NHS App” which has been available in England from July 2019. Users are able to use the app to view their medical records, prove their Covid-19 vaccination status, book appointments, order repeat prescriptions and undertake a number of other tasks related to their health and care [21]. There is currently ongoing research on evaluating the NHS App [23].

The NHS App is a simple and secure way to access a range of NHS services on a smartphone or tablet and is available to all patients aged 13 and over who are registered with a GP practice in England. The NHS app is free to download and the users can have all of their medical information in one place, including the COVID-19 pass. It also allows users to book appointments, manage repeat prescriptions, and communicate their organ donation decisions.

Other PHRs exist in the UK and are sometimes integrated with the NHS app. Depending on the collaboration the GP practice has with such alternative PHRs, NHS app users can connect to their preferred PHR via the NHS app and access more of their medical information.

Study Population

The study population was a nationally representative sample of UK adults (stratified sampling across age, sex, and ethnicity). The participants had expressed an interest in participating in anonymized surveys where they would be compensated for their time at a rate of approximately \$12/hour, by registering with the online survey platform Prolific [24]. Researchers register with the platform to run surveys. They have the option of screening participants along a wide variety of dimensions, and researchers are also able to request a nationally representative sample, which was the option exercised in this paper.

Survey Instrument

The survey questions were taken from the aforementioned Canadian study [14], though unlike that study, we gathered data only at one point in time, and relied exclusively on self-reported data gathered during the survey, without linking that data to any additional secondary data. Moreover, some of the questions were slightly modified to account for the different context and participant pool (for example using the phrase “accident and emergency” instead of “emergency room”). See appendix 1 for the full survey.

The survey had four sections: (1) user satisfaction with the patient portal; (2) utility of the patient portal; (3) impact of the patient portal; and (4) demographics. In total, there were 5 questions about satisfaction, and 12 questions about impact.

Upon commencing the survey and confirming that they are at least 18 years old, participants were presented with a lay-friendly definition of a PHR similar to the one in the introduction, and then asked if they have experience using PHRs or not.

For those declaring experience with PHRs, they continued to the experience-based version of the survey, which closely follows the aforementioned Canadian study. In contrast, those declaring no experience with PHRs are funneled toward an almost isomorphic version of the survey where the questions are rephrased to reflect hypothetical views rather than those based on actual experience. We refer to this as the hypothetical version of the survey. Textbox 1 (experience-based) and Textbox 2 (hypothetical) illustrate the similarities and differences between the two versions of the survey via two questions.

Textbox 1. Sample of questions in the experience-based version of the survey

What do you use your PHR for? (Check all that apply).

- To access my health information
- To access my child(ren)'s health information
- To access the health information of someone whom I am caring for
- Other

Where do you access your PHR from? (Check all that apply).

- Desktop computer/laptop
- Smartphone
- Tablet Device
- No preference

Textbox 2. Sample of questions in the hypothetical version of the survey

If you had a PHR, what do you imagine you would use it for? (Check all that apply).

- To access my health information
- To access my child(ren)'s health information
- To access the health information of someone whom I am caring for
- Other

If you had a PHR, where do you imagine you would access your PHR from? (Check all that apply).

- Desktop computer/laptop
- Smartphone
- Tablet Device
- No preference

Statistical Analysis

Categorical data, such as gender and age group, were transformed into dummy variables indicating the category. There was no attrition or missing values in the data. All 1,001 observations were analyzed, though for some elements of the analysis, we separated the experience-based responses from the hypothetical ones.

Statistical tests evaluating the main research question (the determinants of user satisfaction) were conducted using one-sample t-tests. Statistical tests comparing the responses of those taking the experience-based version of the survey to those taking the hypothetical one were conducted using two-sample t-tests with unequal variances. In all cases, a p-value of less than 0.05 was used to denote statistical significance. The statistical analysis was run in Stata statistical software.

Results

PHR Experience and Demographic Characteristics

The survey was distributed on 25 March 2022. A total of 1,001 adults participated. A full breakdown of the demographic variables is shown in Table 1, along with the relevant proportions from the 2021 Census, conducted by the UK Office of National Statistics. In response to the opening question regarding prior experience with PHRs, 47% (468/1001) responded "yes", qualifying for the experience-based version of the survey; and 53% (533/1001) responded "no", qualifying for the hypothetical version of the survey.

We begin our analysis by examining the difference in the demographic profile of the respondents who have experience in using PHRs with those who do not. We used the data on gender and age, where the latter takes the form of six categories (seven variables in total). We conducted a multivariate analysis of variance (ANOVA) to see if the two sample groups are equivalent in those

seven variables, which was not statistically significant ($F = 1.48$; $p = 0.18$). Moreover, we conducted seven pairwise difference in mean t-tests with unequal variances, and only one of the seven is statistically significant (age group 18-29 years; $t = 2.13$, $p = 0.04$). Therefore, we concluded that in the UK population, experience with PHRs is uncorrelated with demographic traits, and that we have obtained a sample that is approximately nationally representative for both groups.

We next examine the responses to the questions regarding connected accounts. Among those with experience with PHRs, 15% (70/468) reported having connected their account with their partner as their carer who is able to view their health information, 7% (30/468) have connected to their parent/s and 13% (59/468) have connected their PHR to their children/s. Among those with no PHR experience, 57% (303/533) responded that they would connect their PHR to their partner as their carer to view their health information, 22% (118/533) to their parent/s and 27% (143/533) to their children/s.

Table 1: Participant demographics by sample (experienced-based vs. hypothetical)

Characteristics	Experience-based sample (N = 468)	Hypothetical sample (N = 533)	Nationally rep. sample (2021)
Gender			
Female	247 (53%)	255 (48%)	51%
Male	217 (46%)	263 (49%)	49%
Other	4 (1%)	15 (3%)	N/A
Age			
18-29	107 (23%)	93 (17%)	18%
30-39	93 (20%)	100 (19%)	17%
40-49	82 (18%)	86 (16%)	16%
50-59	86 (18%)	114 (21%)	18%
60-69	85 (18%)	116 (22%)	14%
70+	15 (3%)	24 (5%)	17%
Comfort with computers			
Completely comfortable	11 (2%)	15 (3%)	
Comfortable	3 (1%)	3 (1%)	
Neutral	9 (2%)	22 (4%)	
Uncomfortable	112 (24%)	185 (35%)	
Completely uncomfortable	333 (71%)	308 (58%)	

Satisfaction, Impact, and Utility

Among the UK participants that had PHR experience, 79% (370/468) agreed that a PHR is easy to use. Also for those with experience, 68% (319/468) agreed that the PHR saved them time in scheduling an appointment in a clinical setting, while the figure for those answering hypothetically was 72% (387/533). In terms of PHRs making communication with care providers easier, for the

experience-based sample, 60% (283/468) agreed, while the figure for those responding hypothetically was 75% (398/533).

For the Canadian survey, the three figures were 93% (easy to use), 75% (time saved in scheduling appointments), and 83% (easing communication with care providers), respectively, indicating generally higher levels. However, one should note that the PHR software used in the UK differs from that in the Canadian study and so the comparison is not apples to apples.

In terms of PHRs enabling participants to avoid the need to seek medical assistance, for those with PHR experience, 42% (200/468) indicated that their PHR had helped them avoid a clinic visit, while 4% (19/468) indicated that it had allowed them to avoid an emergency room visit. The corresponding figures for those answering hypothetically were 32% (193/533) for a clinic visit and 9% (47/533) for an emergency room visit. Both sets of figures were broadly comparable to the corresponding numbers in the Canadian study (48% for clinic visits, 14% for emergency room visits), albeit a little smaller.

Table 2 shows the participants' views regarding the PHR, where we distinguish between experience-based and hypothetical views. In terms of the preferred features of the PHR, those with PHR experience identified viewing their own health information (81%), viewing their own lab results (50%), and ease of scheduling appointments (47%) with the highest frequency. The top three for those without PHR experience were identical, albeit with slightly different frequencies: 90% viewing their own health information, 76% viewing their own lab results, and 58% ease of scheduling appointments. Both sets of results are consonant with the preferences expressed by the participants in the Canadian study, where 69% identified lab and diagnostic imaging results as the most preferred feature.

In terms of requested features and improvements, for those with PHR experience, the most highly rated option was "general convenience and less waiting in clinic" (sample mean 3.2 out of 4), followed by "access to data that would allow avoiding care visit" (sample mean 3.1 out of 4). The two options relating to data, "more data about my health" and "access to lab and diagnostic imaging results" both scored highly, too (sample mean 3.1 out of 4). Notably, even the improvement that received the lowest level of support, "less cumbersome login authentication", received a high score (sample mean 2.6 out of 4), indicating that there remains significant room for improvement in PHR software in the UK. Those taking the hypothetical survey did not answer these questions as they were not applicable for those without experience in using PHRs.

In terms of cost savings realized by avoiding clinic visits, for those with PHR experience, the most frequently cited manifestations were "time off work" (40%), followed by "petrol/gasoline" (30%), and "parking" (21%). The rank ordering was the same for those without PHR experience, though the participants expected savings to materialize more frequently: 57% for "time off work", 52% for "petrol/gasoline", and 34% for "parking".

The Canadian study used free response for the cost savings, entailing answers that were considerably less structured than those in our study. Nevertheless, 22% cited "not paying for parking and gas", which is comparable to the figure in our study. The most frequently cited saving was "general convenience and less waiting in clinic", which was cited in 38% of cases, and is loosely comparable to the savings stemming from "time off work".

Table 2: Participant views on PHRs (experienced-based vs. hypothetical)

Participant responses	Experience-based sample (N = 468)	Hypothetical sample (N = 533)
Requested improvement (scale 0 to 4)	Mean (SD)	-
Less cumbersome login authentication	2.6 (1.0)	-
More data about my health	3.1 (0.8)	-
Access to lab and diagnostic imaging results	3.1 (0.8)	-
Access to data that would allow avoiding care visit	3.1 (0.8)	-
Question answered via secure message	2.9 (0.9)	-
General convenience and less waiting in clinic	3.2 (0.8)	-
Most preferred features	Number (%)	Number (%)
Ease of communication with family's care providers	68 (15%)	165 (31%)
Ease of scheduling appointments	221 (47%)	308 (58%)
Like to view own lab results	233 (50%)	407 (76%)
Like to view own health information	377 (81%)	478 (90%)
Like to view health information of carees	57 (12%)	180 (34%)
Like to fill out pre-appointment clinical questionnaire	83 (18%)	291 (55%)
Like to record blood pressure for care providers	31 (7%)	151 (28%)
Like to record glucose level for care providers	5 (1%)	105 (20%)
Other	17 (4%)	16 (3%)
Factors reported in self-reported avoidance of clinic visit	Number (%)	-
Imaging results discussed by secure message	85 (18%)	-
Question asked by message was answered	117 (25%)	-
Other	20 (4%)	-
Cost saving by avoiding clinic visit	Number (%)	Number (%)
Petrol (gasoline)	140 (30%)	278 (52%)
Time off work	185 (40%)	306 (57%)
Getting childcare	32 (7%)	70 (13%)
Parking	100 (21%)	182 (34%)
Taxi	29 (6%)	78 (15%)
Other	28 (6%)	65 (12%)

Experience-Based vs. Hypothetical Responses

The final group of results concerns the novel element of our design, which is the comparison between those with and without experience in PHRs. Table 3 shows the sample mean for both groups across the different variables, along with the significance level from the aforementioned 2-sample t-test. There are three main findings associated with these results.

Table 3: Sample means by group (experienced-based vs. hypothetical) with significance level of 2-sample t-test

Variable	Hypothetical	Experience-based	Significance
Use PHR to access my health information	99%	96%	1%
Use PHR to access children's health information	36%	12%	1%
Use PHR to access caree's health information	32%	9%	1%
Use PHR to access someone else's health information	2%	4%	None
PHRs ease communication with family care providers	31%	15%	1%
PHRs ease scheduling appointments for self/family	58%	47%	1%
PHRs enable viewing own lab results	76%	50%	1%
PHRs enable viewing own health information	90%	81%	1%
PHRs enable viewing caree health information	34%	12%	1%
PHRs enable filling out pre-appt clinical questionnaire	55%	18%	1%
PHRs enable recording BP for care providers	28%	7%	1%
PHRs enable recording glucose for care providers	20%	1%	1%
PHRs enable something else	3%	4%	None
PHRs are easy to use	76%	41%	1%
PHRs save time when scheduling appointments	87%	76%	10%
PHRs allow for more convenient comms with care providers	89%	61%	1%
PHR helpfulness rating 0-100	74	71	5%
PHR benefit depends on volume of health data	1.00	1.01	None
PHR login frequency depends on volume of health data	0.47	0.72	1%
PHR benefit depends on promptness of data	0.96	0.93	None
PHR login frequency depends on promptness of data	0.58	0.71	5%
PHR has enabled self/family avoiding ER visit	9%	4%	1%
PHR has not enabled self/family avoiding clinic visit	64%	57%	5%
PHR allowing clinic visit avoidance saved petrol	52%	30%	1%
PHR allowing clinic visit avoidance saved work leave	57%	40%	1%
PHR allowing clinic visit avoidance saved childcare	13%	7%	1%
PHR allowing clinic visit avoidance saved parking	34%	21%	1%
PHR allowing clinic visit avoidance saved taxi	15%	6%	1%
PHR allowing clinic visit avoidance saved other	12%	6%	1%
PHR access from desktop/laptop	76%	51%	1%
PHR access from smartphone	64%	62%	None
PHR access from tablet	25%	12%	1%
PHR access no preference	6%	1%	1%

First, participants with no experience tend to overestimate the extent to which they will actually use their PHR to view health information relating to people whom they care for. For example, in the case of children, those with PHR experience responded positively 12% of the time, compared to 36% for those answering hypothetically ($p < 1\%$). The difference is statistically significant even for participants' own health information, though the difference is small in magnitude (99% for hypothetical compared to 96% for those with experience).

Second, participants with no experience tend to overestimate the functionality of PHRs compared to those who have PHR experience. This can be seen in several groups of questions, including those relating to what they like about their PHR, and about the cost savings that PHRs would afford them. For example, 55% of participants answering hypothetically imagined that they would fill out pre-clinic questionnaires that would make their care visit quicker and more effective, compared to 18% for those with experience ($p < 1\%$). Notably, the functionality that those lacking PHR experience imagine is not unfeasible, nor does it reflect fantastic expectations. Instead, it represents functionality that is potentially available if the relevant stakeholders in the health sector are able to coordinate sufficiently.

Third, despite this systematic overestimation, the overall evaluation of PHRs out of 100 was

comparable for the two groups: 74 for hypothetical users, and 71 for those with real experience ($p < 5\%$). This suggests that the somewhat underwhelming functionality that users actually experience only has a small adverse effect on the perceived benefits of having PHR access.

Discussion

Principal Findings

This study investigated the determinants of PHR user satisfaction in a nationally representative sample of UK adults composed of two groups: the first is people with experience using PHRs, and answered questions regarding their opinions of PHRs; and the second is people with no prior experience with PHRs, who answered analogous questions modified to reflect their hypothetical views regarding PHRs. Notably, from a demographic perspective, the two groups do not differ in a statistically significant manner. Our principal findings were as follows.

First, for those with experience using PHRs, they generally found their PHR to be easy to use, that it saves time in scheduling appointments, and that it facilitates communication with care providers. In these dimensions, the UK participants did not rate the PHR as highly as their Canadian counterparts, though the software used by these groups are different and therefore not necessarily comparable. Among the UK participants, both those with experience and those answering hypothetically rated PHR quite highly overall (70-75 out of 100 on average).

Second, both those with experience and those answering hypothetically regarded the ability to view their own health information and their own lab results, and to schedule appointments as the most valued features of PHRs. They also indicated that PHRs enabled them to avoid the need for clinic and/or emergency room visits to a significant degree, and that this allowed them to economize on a variety of material and non-material costs, such as parking, petrol/gasoline, and the need to take time off work.

Third, those with experience using PHRs expressed a desire for a wide range of improvements in PHR features, including offering greater all around convenience to users, and furnishing them with a greater volume of data.

Finally, though the broad strokes of preferences articulated by those with PHR experience were similar to those lacking experience, the data revealed some systematic differences, too. Those without experience tended to overestimate the extent to which they would be able to use PHRs to manage the health of people within their circle, such as their children and elderly parents. Further, those without experience had high expectations of the functionality of PHRs compared to the prevailing reality, though this was not due to beliefs that were fundamentally unrealistic. Rather, they reflected arguably transient failures of PHRs to fulfill their potential.

Overall, our study has two important contributions over the existing literature. The first is gathering data from a nationally representative sample, as most studies rely exclusively just on users of specific PHR systems. Further, we did this for a country (UK) that has a large population and a national healthcare system that serves as an important model for many other countries. Given that several countries have launched directives that stipulate PHR access for all inhabitants, the value of gathering data from a nationally representative sample is enhanced.

Second, we are able to contrast the views of those with PHR experience with those who have never used PHRs. Given that this latter group represents around 50% of the UK population, and in light of the desire to enroll an ever increasing proportion of the population in PHRs, gathering data on those who lack PHR experience constitutes an important input into decisions relating to PHRs.

Limitations

However, when generalizing beyond the UK, or into the past or future in the UK, then the fact that our data comes from one country at one point in time represents a limitation. Moreover, as with any

survey where participation is voluntary, there is the possibility of response bias.

A second limitation is that those participating despite having no prior experience with PHRs might suffer from hypothetical bias, for example because they do not take the time to think hard enough about the questions posed.

Finally, the variation in experience is observational rather than being randomized. This opens the possibility of omitted variable bias. All of these limitations can be addressed by future research.

Conclusions

A nationally representative sample of UK adults reported that their PHR is easy to use and that they use their PHR to access their health information and schedule appointments. The usage is associated with high levels of users' satisfaction, and allows patients to avoid certain clinic visits, resulting in a series of material and non-material cost savings. Those with no experience in PHRs tend to overestimate their potential usage of PHRs, and the functionality of those PHRs.

Conflicts of Interest

Competing interests: Omar Al-Ubaydli is a board member and shareholder of the patient health record company Patients Know Best, his brother (Mohammad Al-Ubaydli) is the CEO and a shareholder of Patients Know Best, and members of his direct family are shareholders in Patients Know Best.

Multimedia Appendix 1

Questionnaire

Multimedia Appendix 2

T-tests

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Supplementary Files

Multimedia Appendixes

T-tests.

URL: <http://asset.jmir.pub/assets/b5fca27f965b5b96cf548ba5cf614da8.docx>