Challenges of Trustable AI and Added-Value on Health
B. Séroussi et al. (Eds.)

doi:10.3233/SHTI220537

Over 89% Adoption Rate of the Nationwide Online Patient Portal in Finland

Vesa JORMANAINEN[a,b1]
[a] *Finnish Institute for Health and Welfare, Helsinki, Finland*
[b] *University of Helsinki, Department of Public Health, Helsinki, Finland*

Abstract. Among 1,650 persons in an internet panel survey in October 2020 in Finland, over 89% reported use of the nationwide My Kanta online patient portal. Only 1.5% of the respondents did not know the service. Compared with non-users, among My Kanta users there were more females, less living in countryside, household net income was higher, and more reported independent use of online services. My Kanta use increased by poorly self-rated health status, increasing number of reported prescribed medicines, long-term diseases and physician visits during the six previous months.

Keywords. Patient portals, health information systems, My Kanta, Finland

1. Introduction

A patient portal is a service that enables patient to access their health information online [1,2]. Patients are satisfied with their access to their own health data [3–7]. Shared nationwide patient portals have been introduced in many countries [8–17], but only few studies have reported the use of nationwide patient portals [10,13–14,18].

Assessment of adoption rates is essential in understanding effects of patient portals on decision-making, care processes and health outcomes [19]. An overall 52% adoption rate has been observed, but it was 71% [95% CI: 65–79%] in controlled and 23% [95% CI: 13–33%] in real-world experiments.

The highest use of electronic prescription and consultation was in Finland among 28 European Union Member States in 2016 [20]. Finland has introduced since May 2010 national, centralized, shared, integrated and interoperable electronic data system services (Kanta Services) in phases for citizens, healthcare, social welfare and pharmacy service providers [18,21]. My Kanta is a nationwide online service allowing citizen service users to view their information about electronic prescriptions and health data via an internet web page. My Kanta use has increased during the 10 years from 16% in 2014 to 64% in 2020–2021 [15,22–23] and to as high as 83% among community pharmacy customers in 2019 [18,24].

In this study, we aimed to assess adoption rates (use proportions) of the nationwide My Kanta online patient portal in Finland by user and non-user characteristics.

[1] Corresponding Author: MD Vesa Jormanainen, Finnish Institute for Health and Welfare (THL), P.O. Box 30, 00271 Helsinki, Finland; E-mail: vesa.jormanainen@thl.fi.

2. Methods

A cross-sectional web-based questionnaire survey took place in the Taloustutkimus Oy's internet panel (approximately 40,000 members) in October 15–31, 2020 among Finnish persons aged 18–79-years of age, who were resident in Finland [25]. A random stratified sample of 9,466 panel members was constructed and invited to the questionnaire survey. The quantitative response goal (1,500) took place in October 31, 2020.

Use of My Kanta was assessed by asking the question "Have you used My Kanta patient portal to access your electronic prescriptions and/or other health data?". The response categories were: i) Yes, electronic prescription data, ii) Yes, other health data, iii) Yes, both electronic prescription and other health data, iv) No, and v) I do not know My Kanta. In data processing, the response categories i–iii were classified into "Yes" (users) and iv–v into "No" (non-users).

3. Results

Totally 1,650 persons responded to the internet panel survey. Of the respondents, 89.5% used My Kanta, and 10% of the users accessed their prescription data only, 10% their other health data only and 81% both. Eleven percent did not use My Kanta and 1.5% did not know the service at all.

There were more females among patient portal users (56%) than among the non-users (31%), and more non-users (23%) than users (12%) reported living in countryside. Household monthly median net income was higher among users than the non-users. In addition, 97% of the users (86% of non-users) used online services independently without any help.

3.1. Use of the nationwide My Kanta patient portal

Females (93%) reported higher use than males (82%). The use proportion was highest in the oldest (65–79-year-olds) (90%) and in the youngest (18–34-year-olds) (89%) age groups. My Kanta use was lowest in education level elementary school (80%) and highest in university (91%) education level. Pensioners (90%) reported the highest use as well as those who were on maternity leave or students (89%).

3.2. Use of My Kanta patient portal by respondents' health-related characteristics

My Kanta use increased by poor self-rated health status: rather good or good (87%), neither good nor poor (89%), and rather poor or poor (95%). Responsible caregivers of family members or relatives reported higher use (98%) than the other groups (88%). My Kanta use also increased by increasing number of prescribed medicines: no prescription medicines (72%), 1–2 (89%), 3–4 (94%), 5–9 (96%), and 10 or more (100.0%). In addition, number of reported physician-diagnosed long-term diseases showed an increasing trend: no long-term disease (79%), one (87%), two (93%), three (95%), 4–5 (95%), and 6+ (100%).

The reported use of My Kanta was highest (100%) among the respondents who had a physician-diagnosed epilepsy (prevalence 1.2%), lowest (90%) among those who reported a skin disease (prevalence 8.7%) and 79% among those who did not report any

long-term diseases (prevalence 31%) (Figure 1). In addition, use of My Kanta increased by reported physician visits during the previous six months: none (81%), 1–2 (89%), 3–5 (94%), 6–10 (95%) and more than 10 (95%).

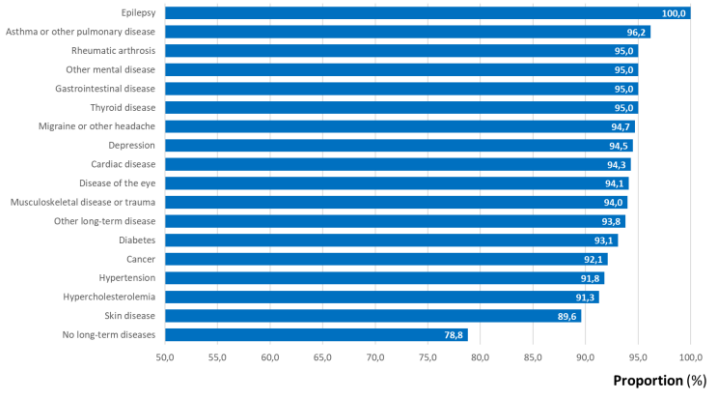

Figure 1. The proportion (%) of the nationwide My Kanta patient portal by self-reported physician-diagnosed long-term diseases among 1,650 respondents in Taloustutkimus Oy's internet panel survey among Finnish persons aged 18–79-years of age and who were resident in Finland inOctober 15–31, 2020 in Finland.

4. Discussion and Conclusion

Among 1,650 persons in an internet panel survey in October 2020 in Finland, over 89% reported use of the nationwide My Kanta online patient portal, some 10% of the users accessed their prescription data only, and 10% accessed their other health data only and over 80% both. Only 1.5% of the respondents did not know the patient portal service.

My Kanta use has increased significantly in less than 10 years [18,22–24]. In this survey My Kanta use was high, and nationwide patient portal adoption rates in Finland are in general higher than in real-world or controlled experiments [19].

Among My Kanta users compared with non-users, there were more females, less were living in countryside, household net income was higher, and more reported independent use of online services. These results may indicate better health literacy, access to internet and online service skills among the internet panel members in general. My Kanta use increased by poorly self-rated health status, increasing number of reported prescribed medicines, long-term diseases and physician visits during the six previous months. These results are likely associated to the use of patient portal as an essential module in cure and care processes. It also shows that there exist new and continuously relevant and important content for the users in the nationwide patient portal.

This study results suggest that it is possible to introduce a nationwide patient portal that is available for all potential users, and system availability leads to ongoing and increasing portal use [26]. Next studies should investigate if increasing patient portal use would be associated with observable changes in clinical and health behavior that further likely would result in improvements in patient outcomes.

References

[1] Osborn VY, Mayberry LS, Wallston KA, et al. Understanding patient portal use: implications for medication management. J Med Internet Res 2013;15(7):e133.
[2] Essén A, Scandurra I, Gerrits R, et al. Patient access to electronic health records: differences across ten countries. Health Policy Technol 2018;7(1):44–56.
[3] Delbanco T, Walker J, Bell S, et al. Inviting patients to read their doctors' notes: a quasi-experimental study and a look ahead. Ann Intern Med 2012;157(7):461–470.
[4] Turvey C, Klein D, Fix G, et al. Blue Button use by patients to access and share health record information using the Department of Veterans Affairs' online patient portal. J Am Med Inform Assoc 2014;21(4):657–663.
[5] Esch T, Mejilla R, Anselmo M, et al. Engaging patients through open notes: an evaluation using mixed methods. BMJ Open 2016;6(1).
[6] Walker J, Leveille S, Bell S, et al. Open notes after 7 years: patient experiences with ongoing access to their clinicians' outpatient visit notes. J Med Internet Res 2019;21(5):e13876.
[7] Wass S, Vimarlund V, Ros A. Exploring patients' perceptions of accessing electronic health records: innovation in healthcare. Health Inform J 2019;25(1):205–215.
[8] de Lusignan S, Ross P, Shiffrin M, et al. A comparison of approaches to providing patients access to summary care records across old and new Europe: an exploration of facilitators and barriers to implementation. Stud Health Technol Inform 2013;192:397–401.
[9] Hardardottir GA, Thoroddsen Å. National eHealth implementation: country experience. Stud Health Technol Inform 2016;225:168–172.
[10] Lämsä E, Timonen J, Mäntyselkä P, et al. Pharmacy customers' experiences with the national online services for viewing electronic prescriptions in Finland. Int J Med Inform 2017;97:221–228.
[11] Nohr C, Parv L, Kink P, et al. Nationwide citizen access to their health data: analysing and comparing experiences in Denmark, Estonia and Australia. BMC Health Serv Res 2017;17(1):534.
[12] Oderkirk J. Readiness of electronic health record systems to contribute to national health information and research. OECD Health Working Paper 99. Paris: OECD, 2017.
[13] Moll J, Rexhepi H, Cajander Å, et al. Patients' experiences of accessing their electronic health records: national patient survey in Sweden. J Med Internet Res 2018;20(11):e278.
[14] Holt KA, Karnoe A, Overgaard D, et al. Differences in the level of electronic health literacy between users and nonusers of digital health services: an exploratory survey of a group of medical outpatients. Interact J Med Res 2019;8(2):e8423.
[15] Jormanainen V, Parhiala K, Niemi A, et al. Half of the Finnish population accessed their own data: comprehensive access to personal health information online is a cornerstone of digital revolution in Finnish health and social care. Finnish J eHealth eWelfare 2019;11(4):298–310.
[16] Zanaboni P, Kummervold PE, Sorensen T, et al. Patient use and experience with online access to electronic health records in Norway: results from an online survey. J Med Internet Res 2020;22(2):e16144.
[17] Carini E, Villani L, Pezzullo A, et al. The impact of digital patient portals on health outcomes, system efficiency, and patient attitudes: updated systematic literature review. J Med Internet Res 2021;23(9):e26189.
[18] Sääskilahti M, Ahonen R, Timonen J. Pharmacy customers' experiences of use, usability, and satisfaction of a nationwide patient portal: survey study. J Med Internet Res 2021;23(7):e25368.
[19] Fraccaro P, Vigo M, Balatsoukas P, et al. Patient portal adoption rate: a systematic review and meta-analysis. Stud Health Technol Inform 2017;245:79–83.
[20] Dubois H. Healthcare. In: Eurofound. Quality of health and care services in the EU. Publications Office of the European Union, 2017.
[21] Jormanainen V. Large-scale implementation and adoption of the Finnish national Kanta services in 2010–2017: a prospective, longitudinal, indicator-based study. Finnish J eHealth eWelfare 2018;10(4):381–395.
[22] Hyppönen H, Hyry J, Valta K, et al. Electronic services in the social welfare and health care sector: citizens' experiences and development needs. Report 33/2014. Helsinki (Finland): National Institute for Health and Welfare, 2014.
[23] Kyytsönen M, Aalto A-M, Vehko T. Social and health care online service use in 2020–2021: experiences of the population. Report 7/2021. Helsinki (Finland): Finnish Institute for Health and Welfare (THL), 2021.
[24] Sääskilahti M, Aarnio E, Lämsä E, et al. Use and non-use of a nationwide patient portal: a survey among pharmacy customers. J Pharmaceutical Health Serv Res 2020;11(4):335–342.

[25] Saastamoinen L (Ed.), Airaksinen M, Dimitrow, et al. Creating price competition in the pharmaceutical market and the public's expectations of pharmacies. Publications of the Governments' analysis, assessment and research activities 2021:32. Helsinki (Finland): Prime Minister's Office, 2021.
[26] Price M, Lau F. The clinical adoption meta-model: a temporal meta-model describing the clinical adoption of health information system. BMC Med Inform Decision Mak 2014;14:43.