ACTA ODONTOLOGICA SCANDINAVICA
2023, VOL. 81, NO. 6, 485–490
https://doi.org/10.1080/00016357.2023.2192790

RESEARCH ARTICLE

OPEN ACCESS

Dental service voucher for adults: patient experiences in Finland

Susanna Ilonen[a,b], Sabiina Ylönen[b], Minna Kaila[c], Satu Lahti[d] and Nora Hiivala[a,b]

[a]Department of Oral and Maxillofacial Diseases, Faculty of Medicine, University of Helsinki, Helsinki, Finland; [b]Oral Health Care, City of Helsinki, Helsinki, Finland; [c]Faculty of Medicine, University of Helsinki, Helsinki, Finland; [d]Department of Community Dentistry, University of Turku, Turku, Finland

ABSTRACT

Objective: To investigate how patients experienced a new dental service voucher, what influenced the patient experience, and the use of such vouchers.

Materials and methods: An SMS-linked patient survey was sent to all patients ($n = 1{,}000$) that had received the voucher. The survey consisted of 23 questions (20 multiple choice, 3 open-ended), included themes like access to treatment, use of the voucher, and patient experience. Statistical analyses included Chi-square, Fisher's exact, Mann-Whitney U tests, and Spearman's rank correlation.

Results: The response rate was 25.7%. Patient experience was on average very good. Of the respondents, 148 (57.6%) reported that the voucher was very simple to use, 160 (62.3%) considered that they were helped very well, and 149 (58%) would have very willingly used a voucher again. Those who used the voucher reported an overall better patient experience, as did those with good oral health. Of those reporting unused service vouchers, 14 (67%) preferred to use the public oral health care services instead.

Conclusions: Notwithstanding a relatively low response rate, the results can be utilized to identify patients who need more support in using the voucher, and therefore to target information and guidance more effectively.

ARTICLE HISTORY
Received 12 January 2023
Revised 13 March 2023
Accepted 14 March 2023

KEYWORDS
Dental health services; delivery of dental care; health services accessibility; patient satisfaction

Introduction

The organization and delivery of oral healthcare services vary by country and are tools to meet the health needs of the population, aiming to achieve an improvement in population health and health equality. In Finland, the adult population is entitled to largely subsidized Public Dental Services (PDS), or to private services reimbursed to a small extent by the tax-funded National Health Insurance, maintained by the Social Insurance Institution of Finland (SII). In recent years, the use of PDS has increased [1], especially among the oldest age groups [2]. At the same time, due to substantial cuts in SII reimbursements for private-sector dental care, the use of private services has decreased [3], particularly in younger age groups [2]. COVID-19 has caused major disruption and backlogs in PDS in many countries, including Finland. Due to these increasing pressures on PDS, a need for change has arisen. We need new, patient-oriented ways to organize oral healthcare services to ensure access to care and to fulfil the legal obligations of PDS accessibility. Delays may lead to worsening health. From the perspective of patients' freedom of choice, it is particularly important for PDS to use diverse service provision.

One of the ways to deliver PDS in Finland is the service voucher [4], which may improve service availability, increase residents' freedom of choice, diversify service provision, and increase co-operation between public and private sectors [5,6]. A service voucher is a payment commitment by municipal social and healthcare services to a patient to cover part of the costs of care provided by the private sector. The private sector dentists' prices are higher than the value that the municipality compensates, and the patient pays the difference. Therefore, the patient's out-of-pocket payment varies from the fee paid in PDS and by the chosen private dentist. In the City of Helsinki in 2021, for example, the typical price charged by a private dentist for the placement of a small filling was €55, which complied with the price ceiling set by the city for service voucher operations. The voucher covered €21 (38%) of the costs, and the patient paid €34 (62%). When using a service voucher, patients choose the private healthcare provider themselves from a list of available providers, approved by the municipality according to their acceptance criteria.

The City of Helsinki introduced dental service vouchers for the adult population in 2011 and now utilizes five different kinds. The number of vouchers granted increased from 16,000 (in 2016) to 43,000 (in 2021). The system includes 30 private dental care companies, comprising about 200 private dentists. The vouchers turned out to pose several problems, however: either they were too difficult to use or covered only part of the treatment and thus remained unused or partly used [7], with some patients reverting to the PDS. High costs and the difficulty in using the electronic service

CONTACT Susanna Ilonen susanna.ilonen@hel.fi P.O. Box 6452, 00099 City of Helsinki, Finland

© 2023 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group on behalf of Acta Odontologica Scandinavica Society.
This is an Open Access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. The terms on which this article has been published allow the posting of the Accepted Manuscript in a repository by the author(s) or with their consent.

voucher system also reduced the use of vouchers [7]. Hence, the non-use of vouchers may increase the burden of treatment needed, or their partial use may increase the demand, duly reducing the availability of services. Furthermore, personal (physical health, cognitive condition and financial ability), social (support from family), and institutional factors (information and guidance from professionals) have been identified as being associated with the effective utilization of the service voucher system among elderly people [8], and thus their willingness to make copayments using voucher schemes [9]. Elderly patients have also used vouchers for acute curative healthcare services rather than for preventive services, and were more likely to use the voucher if they had used private sector services before [10,11].

The PDS in the City of Helsinki has continuously improved both the process and the content of service vouchers and has thus managed to raise the utilization rate from 35% (2018) to 50% (2020). In 2021, Helsinki introduced a new dental service voucher model called KOHO (a non-urgent comprehensive treatment voucher). It differs from the previous non-urgent comprehensive treatment vouchers in many ways. Previous vouchers have led to fragmented care (the examination and the treatment plan conducted by the PDS dentist and treatment by the accredited private dentist), or the vouchers have covered only part of the required care (examination, treatment plan and treatment for only two teeth and two periodontal treatments), and the patient's out-of-pocket payments have been higher than the fees paid in PDS. In KOHO the accredited private dentist is in charge of the whole treatment path: examination, treatment plan and treatment, and the patient's out-of-pocket payment is fixed: it is identical to the fees paid in PDS, and does not vary by the chosen private dentist. The aims of these improvements were to enhance access and care continuity, increase the use of dental service vouchers, improve patient experience, and increase equality. Equality means that everyone, regardless of their financial status, has the possibility to choose service either through public oral healthcare or by using the service voucher [12].

Service vouchers are rarely used for healthcare in developed economies, especially for non-urgent treatment periods and preventive services. They are mainly used to pay for services by elderly people. In general, there is a lack of research on service vouchers. There is some literature on experiences with service vouchers, but most of this focuses on social care vouchers [8,9,13] or on healthcare vouchers for the aging population [10,11]. This study explored the KOHO dental service vouchers in the adult population from the perspective of patient experience. Our aim was to investigate how patients experience the KOHO dental service vouchers, as well as the factors involved in this experience and in the use of the vouchers, and thus to obtain information to further improve the voucher system.

Methods

An SMS-linked patient survey, conducted by the City of Helsinki, served as the research-data source for the study. In 2021, a total of 5,700 KOHO vouchers were granted. This survey was sent to 1,000 adult patients, namely all those that had received the new dental service voucher (KOHO) during its first phase, from 1 March to 30 April, 2021. At that time, to ensure treatment paths appropriate to patients' needs, the City of Helsinki offered a KOHO service voucher to a patient if the following criteria were met: the patient was at least 18 years old; he or she had the ability to use the voucher, and had no need for a translator; the recall interval and the Community Periodontal Index (CPI) and Decayed index (D) from the previous treatment period existed in the electronic patient record; the information was no more than five years old; and the recall interval had expired. Furthermore, the recall interval had to be 36 months at most, and the D index 3 at most, or the recall interval over 36 months and the D index 1 at most and at least one sextant of the CPI index had to be 3–4.

The patient survey was conducted from 1 to 19 November, 2021. Patients received a link to the survey by SMS and a reminder after a week. The survey comprised 23 questions (Figure 1), including multiple choice questions on self-reported respondent characteristics, access to treatment, treatment period, satisfaction, earlier use of a service voucher, and three open-ended questions on reasons for non-use of vouchers and general improvement suggestions concerning vouchers. The survey was adapted from an earlier dental-service-voucher survey [7], the patient satisfaction surveys used by the City of Helsinki, and the national health survey (Health 2011) [14]. In addition, a global question on perceived oral health (POH) was used in the same formulation as in the national health survey (Health 2011) because it has been found to predict the use of dental services [15].

We explored the following variables describing the patient experience: the simplicity of the voucher; the experience of being attended to; receiving the help needed; receiving sufficient information and guidance; the number used to rate the service voucher; the probability of recommending the voucher; the acceptance of a new voucher; the use of the electronic service voucher system; the desire to use the PDS instead of choosing the voucher; and previous use of the voucher. All variables were tested against the following variables: age, gender, residential area, education, use of the voucher, and POH. Age was used as a continuous variable in all analyses, but presented in categories in the tables, in order for the size of the groups to be as appropriate as possible and to avoid presenting a small number of responses in any category. Furthermore, only two genders were used (due to the small number of responses for the gender 'other'), and only three education levels were used (due to the small number of responses in the 'something else' category). POH was divided into two categories: good (good or fairly good) and poor (average, fairly poor or poor), as was the use of service vouchers: yes (totally and partly used) and no (unused). The socioeconomic structure of the population in the city of Helsinki varies by region [16,17], and therefore residential area was used here as an indicator of that. To identify possible factors involved in the use of KOHO dental service vouchers, we compared the groups of service vouchers used

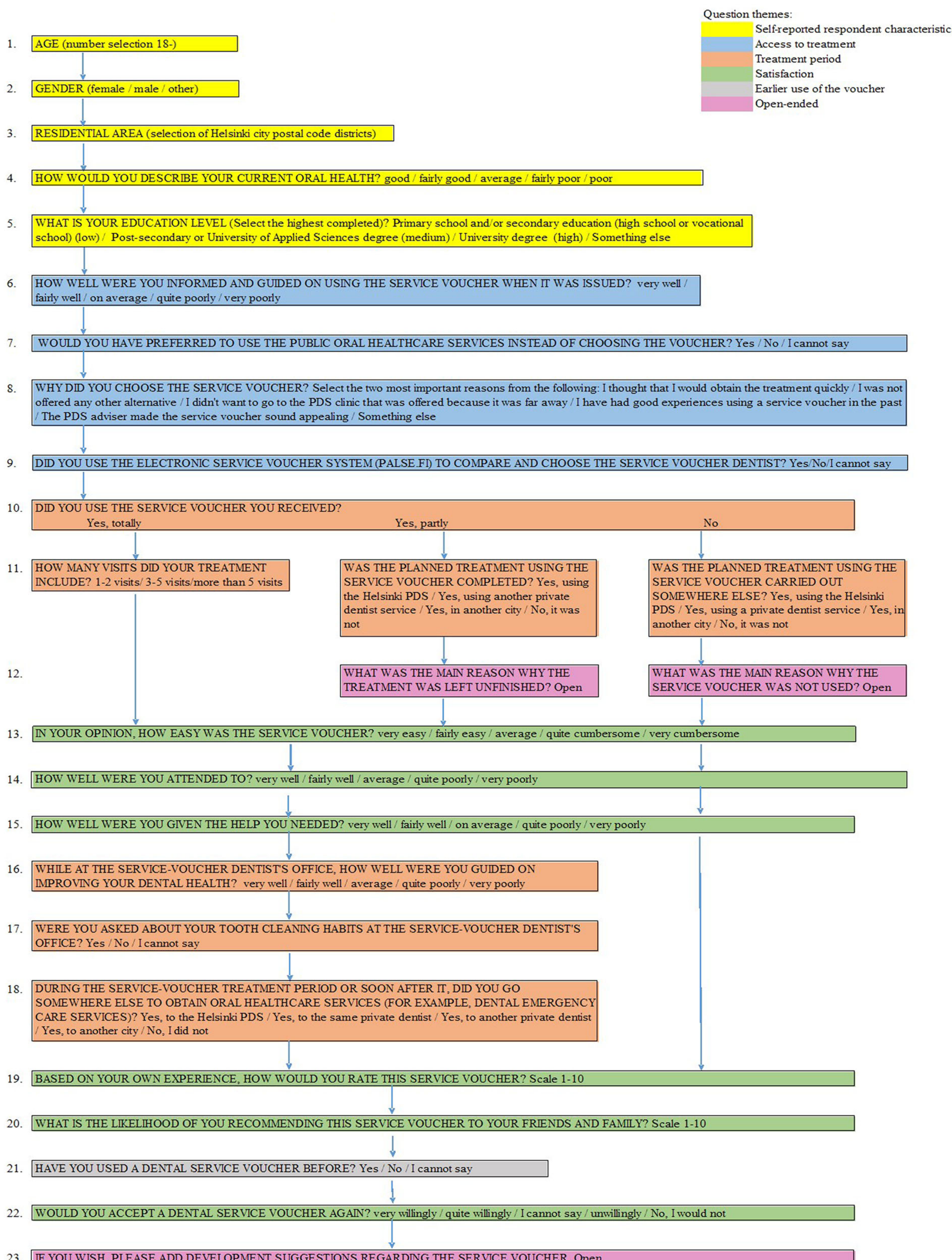

Figure 1. Questions and response categories for the survey.

and unused, and also tested the use-of-voucher variable against the following variables: age, gender, residential area, education, and POH. We also analyzed, as distributions, the respondents' main reasons for choosing a service voucher, the experience of having private dentists provide guidance in improving dental health, and the responses regarding the completion of the planned treatment. Open-ended questions were grouped by topic (one or more per question).

We performed the statistical analyses with SPSS 26.0. All completed answers were included in the analyses. For the

analysis of statistically significant differences between groups, we used Chi-square tests, Fisher's exact tests, Mann-Whitney U tests, and Spearman's rank correlation coefficient. The research ethics committee of the Faculty of Medicine at the University of Helsinki reviewed the study plan for this research.

Results

A total of 257 (25.7%) patients responded to the survey (Table 1). The average age of the respondents was 51 years (SD: 16.2). The majority of respondents had used their service voucher completely and experienced good oral health on average. Otherwise, the responses were evenly distributed.

Patient experience of the service voucher was very good on average (Table 2). The majority of patients found the service voucher very simple to use, felt that they were attended to well, had received the help they needed, along with enough information and guidance, had used the electronic service voucher system to choose the respective private dentist, and would willingly accept a new voucher. The respondents rated the service voucher 8.1 (Mean, SD: 2.3) and 9.0 (Median, IQR: 2) on a scale of 1 to 10, and 7.7 (Mean, SD: 2.8) and 9.0 (Median, IQR 3), on scale of 0 to 10, when it came to recommending its use. A total of 79 (31%) respondents would have preferred to use the public oral healthcare services instead of the voucher, and 100 (38.9%) had used a voucher before.

Table 1. Characteristics of the respondents.

Variable	Categories	Respondents /Percentage	Respondents /Frequency
age	18–34	19.1	49
	35–64	56.4	145
	>65	24.5	63
gender	Female	73.5	189
residential area/ Helsinki major district	Southern	13.2	34
	Western	19.8	51
	Central	17.5	45
	Northern	11.3	29
	Northeastern	13.2	34
	Southeastern	9.4	24
	Eastern	15.2	39
education	High	36.6	94
	Medium	32.7	84
	Low	28.8	74
perceived oral health (POH)	Good	70.8	182
	Average	21.4	55
	Poor	7.8	20
the use of the service voucher	Yes, totally	91.8	236

Factors associated with patient experience were use of the service voucher and POH (Table 3), whereas no statistically significant associations were found with age, gender, residential area or education. Patients with good POH reported better experiences when it came to receiving the help they needed, being attended to, and receiving enough information and guidance compared to those with poor POH. There were also more patients with good POH who had not used a service voucher before, and had used the electronic service voucher system to choose the private dentist, than those with poor POH. Patients who had used their service voucher totally or partly experienced greater simplicity, felt better attended to, and regarded receiving both the help they needed and sufficient information and guidance to be better than those who had not used their service voucher. Furthermore, patients who had used vouchers reported more frequent use of the electronic service voucher system, were more willing to accept a new voucher, gave a better overall rating for the service voucher, and indicated that they would be more likely to recommend the service voucher than those who had not used it.

The desire to obtain treatment through the public oral healthcare services instead of choosing the voucher was found to be associated with use of the voucher. Patients who had not used their service vouchers had more of a preference for using the public oral healthcare services than those who had used their vouchers (Table 3). Age, gender, residential area or education were not found to be associated with use of the vouchers, but good POH was found to be associated with their use ($p = 0.052$). Patients with good POH reported 7% more use of the vouchers than those with poor POH.

The main reasons for choosing a service voucher included the following: one could get the treatment quickly (140 answers, of which 49% gave this as the only reason), and the fact that one was not offered any other alternative (117 answers, with 65% giving this as the only reason). A total of

Table 2. Distribution of the variables describing the patient experience of the service voucher.

Variable	Categories	Respondents/Percentage	Respondents/Frequency
Simplicity of the voucher	Easy	84.8	218
	Average	5.1	13
	Cumbersome	10.1	26
The experience of being attended to	Well	77.1	198
	Average	12.8	33
	Poorly	10.1	26
Receiving the help needed	Well	84.1	216
	Average	7.0	18
	Poorly	8.9	23
Receiving sufficient information and guidance	Well	80.2	206
	Average	9.3	24
	Poorly	10.5	27
Acceptance of a new voucher	Willingly	81.0	208
	I cannot Say	7.4	19
	Unwillingly or I would not accept	11.6	30
Use of the electronic service voucher system	Yes	59.9	154

In the Likert scale variables (Variables 1 to 5), categories 1 and 2 are combined as well as categories 3 and 4.

Table 3. The results between perceived oral health (POH) and use of the voucher and the variables describing the patient experience of the service voucher.

Variable	Categories	n	Use of the service voucher				Perceived oral health (POH)		
			yes 236		no 21		good 182		poor 75
Simplicity of the voucher	1 = very easy	**Mean rank**	121.7		210.6	r_s		0.169	
	5 = very cumbersome	**p**		<0.001				0.007	
Experience of being attended to	1 = very well	**Mean rank**	123.2		193.9	r_s		0.228	
	5 = very poorly	**p**		<0.001				<0.001	
Receiving the help needed	1 = very well	**Mean rank**	120.4		226.1	r_s		0.282	
	5 = very poorly	**p**		<0.001				<0.001	
Receiving sufficient information and guidance	1 = very well	**Mean rank**	122,3		204,7	r_s		0.209	
	5 = very poorly	**p**		<0.001				0.001	
Acceptance of a new voucher	1 = very willingly	**Mean rank**	123.3		192.7	r_s		0.134	
	5 = I would not accept	**p**		<0.001				0.032	
Overall rating	scale 1–10	**Mean(SD)**	8.5 (1.8)		4.1 (3.0)		8.3 (2.2)		7.8 (2.6)
		Median (IQR)	9.0 (2.0)		5.0 (4.0)		9.0 (2.0)		9.0 (4.0)
		Mean rank	136.6		43.1	r_s		−0.164	
		p		<0.001				0.008	
Probability of recommending the voucher	scale 1–10	**Mean (SD)**	8.1 (2.4)		3.5 (3.1)		7.8 (2.6)		7.4 (3.1)
		Median (IQR)	9.0 (2.0)		4.0 (5.0)		9.0 (3.0)		9.0 (5.0)
		Mean rank	136.7		42.6	r_s		−0.167	
		p		<0.001				0.007	
Use of the electronic service voucher system	Yes	**Respondents** (%)	62		33		65		48
		p		0.024				0.005	
Desire to use the PDS instead of choosing the voucher	Yes	**Respondents** (%)	28		67		30		32
		p		0.001				0.9	
Previous use of the voucher	No	**Respondents** (%)	56		52		61		43
		p		0.7				0.004	

SD: Standard deviation
IQR: interquartile range
r_s = Spearman's rho

The association for the last three variables in the table describing the patient experience was tested using a Chi-square test or Fisher's exact test, whereas the others were tested using the Mann-Whitney U test, or with Spearman's rank correlation coefficient.
For dichotomized POH categories, good = good or fairly good and poor = average, fairly poor or poor.

178 (75%) patients (who used the service voucher totally or partly) experienced being asked about their dental hygiene habits, and 196 (83%) received very or fairly good guidance from the private dentists about improving their dental health. For 20 (65%) patients, who did not use the service voucher or who used it only partly, the planned treatment was not carried out somewhere else but was left undone.

The main topics that arose from open-ended questions were the patients' need for more private dentists to choose from (everywhere in the city), to be treated better at private dentist facilities when a service voucher customership comes up, and to receive more information and guidance.

Discussion

This study shows that patients' experience of the new dental service voucher was on average very good. The use of service vouchers and good perceived oral health (POH) seem to affect the patient experience positively. A preference for public oral healthcare over using the voucher seems to decrease use of the voucher.

The strength of this study is that it provides new insights into how patients experience dental service vouchers, such as the association between POH and the patient experience of vouchers. There are also similarities in our findings to earlier findings on research into service vouchers. Receiving sufficient information and guidance, use of the electronic service voucher system, and the desire to access public oral healthcare services instead of choosing the voucher seem to have a strong impact on the success of the patients' service voucher process [7]. Patients need support in using the voucher effectively [8]. These similarities to earlier findings support the perception of their importance for the service voucher system. In this study, the effect of the importance of actual freedom of choice in using the service voucher also came up. It appeared in the association between user choice and use of the vouchers, and was supported in the answers the respondents gave in connection to their main reason for choose a service voucher.

The study has some limitations, however. The survey response rate was relatively low, and hence these findings may not be generalizable to the entire adult population, even in the Helsinki area. In order to achieve a deeper understanding of patient experience [18], qualitative methods could have been used to supplement the survey, such as interviews with patients. Furthermore, the number of participants reporting non-use of service vouchers was relatively small. This inhibited the use of this variable in logistic regressions to predict the use of vouchers, as was performed in an earlier study to identify factors involved in the use of the voucher [7].

Patient experience is identified as an important indicator in measuring the quality of health care, and the data should be used to improve health care delivery [19]. The questions used in this patient survey included similarities to questions in earlier surveys [20,21] that had been identified to contain valid and reliable Patient Reported Experience Measures (PREMs) for dental services [19]. PREMs indicate the impact

of the care process on the patient's experience, but do not measure the quality of care directly [22]. PREMs differ from patient satisfaction measures, however [23], in that they often use a frequency-based response scale and report patients' experience during the treatment path (objective), whereas patient satisfaction measures use agreement-based response scales and are more reflective of patients' expectations, attitudes of appreciation and social acceptability (subjective). Hence, the patient-experience perspective in this study focused both on patient satisfaction and PREMs.

These findings can be utilized in developing dental service vouchers. For example, using the identified factors (POH, the desire to receive treatment through public oral healthcare services instead of choosing the voucher) to identify patients who need more support, and duly targeting information and guidance at them more effectively. To enable freedom of choice, patients should be given a genuine possibility to choose between the voucher and public dental healthcare services.

Nevertheless, further research is needed to identify the views of service providers and service organizers as well. The service voucher is a relatively new instrument for care delivery, and is also somewhat complex due to the multi-step process it involves. Hence, introducing a voucher does not necessarily function in and of itself unless all the related factors are identified, and at least considered. Furthermore, the resources and support for designing and operating the voucher process need to be ensured.

Acknowledgements

The authors thank the City of Helsinki for allowing use of the data gathered in the patient survey, and the Biostatistics Unit of the University of Helsinki for consultation and advice in statistical analysis and preparing reports.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work was not supported by any funding.

ORCID

Susanna Ilonen http://orcid.org/0000-0001-5247-6981
Minna Kaila http://orcid.org/0000-0002-9645-4925
Satu Lahti http://orcid.org/0000-0003-3457-4611
Nora Hiivala http://orcid.org/0000-0003-2051-4095

References

[1] Raittio E, Kiiskinen U, Helminen S, et al. Dental attendance among adult finns after a major oral health care reform. Community Dent Oral Epidemiol. 2014;42(6):591–602.

[2] Suominen AL, Helminen S, Lahti S, et al. Use of oral health care services in finnish adults – results from the cross-sectional health 2000 and 2011 surveys. BMC Oral Health. 2017;17(1):78.

[3] Linden M, Nolvi K. Kela-korvauksen leikkaukset ja yksityisen hammashoidon kysyntä suomen kunnissa 2006 – 2017 [cuts to SII reimbursements, and the demand for private dental care in finnish municipalities in 2006-2017]. Kansantal Aikak k. 2019;3:494–519. Finnish

[4] Melin T, Koila T, Tuominen-Thuesen M, et al. Palveluseteliopas: käsikirja palvelusetelin käyttöönotolle ja hinnoittelulle [service voucher guide: a manual for service voucher implementation and pricing]. Helsinki: KL-kustannus; 2012.

[5] Localfinland.fi [Internet]. Helsinki: Association of local and regional authorities; 2022. https://www.localfinland.fi/

[6] Stm.fi [Internet]. Helsinki: the ministry of social affairs and health; 2022. https://stm.fi/en/frontpage

[7] Ilonen S, Kaila M, Hiivala N. Palveluseteli suun terveydenhuollossa: käyttö ja kokemuksia [dental care service vouchers: usage and experience]. Hammaslääkäril. 2020;11:44–53. Finnish. Abstract in English.

[8] Kan WS, Chui E. Vouchers and Consumer-Directed care: implications for community care services in Hong Kong. Br J Soc W. 2021;51(1):96–113.

[9] Fu YY, Chui EW, Law CK, et al. An exploration of older Hong Kong residents' willingness to make copayments toward vouchers for community care. J Aging Soc Policy. 2019;31(4):358–377.

[10] Yam CH, Liu S, Huang OH, et al. Can vouchers make a difference to the use of private primary care services by older people? Experience from the healthcare reform programme in Hong Kong. BMC Health Serv Res. 2011;11(1):255.

[11] Yam CHK, Wong ELY, Fung VLH, et al. What is the long term impact of voucher scheme on primary care? Findings from a repeated cross sectional study using propensity score matching. BMC Health Serv Res. 2019;19(1):875.

[12] Borg P. Palvelusetelit ja eriarvoisuus [service vouchers and inequality]. Helsinki: city of Helsinki Urban Facts; 2016. Finnish Preface in English.

[13] Kuusinen-James K. Setelipeliä - Tutkimus palveluseteliä säännöllisessä kotihoidossa käyttävien iäkkäiden henkilöiden valinnanvapaudesta [The voucher game – A case study of elderly service voucher users freedom of choice in a home care context] [dissertation]. Helsinki: University of Helsinki; 2016. Finnish Abstract in English.

[14] Lundqvist A, Mäki-Opas T, eds. The Health 2011 Survey – methods. http://urn.fi/URN:ISBN:978-952-302-669-8

[15] Torppa-Saarinen E, Suominen AL, Lahti S, et al. Longitudinal pathways between perceived oral health and regular service use of adult finns. Community Dent Oral Epidemiol. 2019;47(5):374–380.

[16] Tikkanen T. Helsinki alueittain 2019 [helsinki by district 2019]. Publications of the City of Helsinki. 2020; www.hel.fi/kaupunkitieto. Finnish. Preface in English.

[17] Salmikivi H. Socioeconomic differentation in helsinki – a case study of station areas [master's thesis]. University of Helsinki, Helsinki. 2011.

[18] Mills I, Frost J, Kay E, et al. Person-centred care in dentistry – the patients' perspective. Br Dent J. 2015;218(7):407–413.

[19] Bull C, Byrnes J, Hettiarachchi R, et al. A systematic review of the validity and reliability of patient-reported experience measures. Health Serv Res. 2019;54(5):1023–1035.

[20] Keller S, Martin C, Evensen CT, et al. The development and testing of a survey instrument for benchmarking dental plan performance. JADA. 2009;140(2):229–237.

[21] Narayanan A, Greco M. The dental practice questionnaire: a patient feedback tool for improving the quality of dental practices. Aust Dent J. 2014;59(3):334–348.

[22] Kingsley C, Patel S. Patient-reported outcome measures and patient-reported experience measures. BJA Educ. 2017;17(4):137–144.

[23] Bull C, Teede H, Watson D, et al. Selecting and implementing Patient-Reported outcome and experience measures to assess health system performance. JAMA Health Forum. 2022;3(4):e220326.