



Practice characteristics and views of dental hygienists in Lithuania

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Abstract

Objectives: To evaluate the employment possibilities of Lithuanian dental hygienists.

Methods: The questionnaire asked about the demographics of dental hygienists, characteristics of practice, patient load, career intentions, opinion about dental hygienists workforce and the need of governmental workforce regulation. The study consisted of all licensed dental hygienists in Lithuania in 2018 (N = 1109).

Results: The final response rate was 52.1% (n = 578), 64% (n = 370) of respondents lived in the country's five main cities, and 73.5% (n = 425) worked in these population centres, with 94.3% (n = 545) worked in private sector. Over two-thirds of respondents said there was an excess of dental hygienists in Lithuania. Nearly 80% "always" or "sometimes" reported that they had insufficient patients, which may account for the prevalence of supplementary work (48.4%, n = 280), that is work as a dental assistant (67.9%, n = 190). Data obtained show that dental hygienists with less than ten years' experience were likely to work as a dental assistant ($P < .05$). Notwithstanding, 73.9% (n = 428) of the dental hygienists reported that they only want to practice their profession. Most (83.4%, n = 483) struggled to find dental hygienist work, and 70.5% (n = 408) wanted regulation of number of dental hygienists at a national level.

Conclusions: The respondents suggested there is (a) a lack of dental hygiene patients, (b) available workload for additional preventive dental hygiene services, (c) pressure to search for additional work, usually as a dental assistant. Governmental support to optimally regulate oral health human resources is, according to most dental hygienists, an emphatic wish as a possible solution at national level.

KEYWORDS

dental assistant, dental hygienist, Lithuania, regulation, workforce, workload

1 | INTRODUCTION

Lithuania's dental hygiene profession was established in 1996. At that time, one university programme (4-years) and one college programme (3-years) were offered. Over the past decade, the

number of programmes offered at colleges has risen to five, with the university programme remaining at one university. Also after the finishing of university Bachelor programme, it is possible to continue studies in the university Master's programme or even get a doctoral degree usually in general public health but there are

no degree completion opportunities for graduates of the college programmes.

All dental hygiene practitioners must be registered by the Lithuanian Dental Chamber and also undertake ongoing study through continuing education courses, obtaining a minimum of 60 credits over a 5-year period. Dental hygienists services' access is direct across Lithuania and mainly based on private practice where 94.3% (n = 545) of hygienists are currently employed. It was only on 1 January 2019 that the profession was added to the list of primary healthcare providers. That means that dental hygienists are more likely to be employed in the primary healthcare centres because they could be paid in part under the National Health Insurance Fund.

The structure of professional dental care in Lithuania has undergone substantial changes since the country regained its independence in 1991. Since that time, dental care has gradually and increasingly transitioned from being a public and free-of-charge system to a two-tier delivery model, which now includes both private and public dentistry. Typically, the work of a dental hygienist includes obtaining medical and oral health histories, providing oral health education, promotion, examining oral soft and hard tissue, scaling, root planing, polishing of clinical crowns, local topical and infiltration anaesthesia, and the application of fissure sealants and fluoride agents. Dental hygienists are allowed to take dental impressions, radiographs; however, teeth bleaching procedures can only be provided if a dentist refers the patient.

In 2019, Lithuania recorded 4.26 licensed dental hygienists and 14.4 dentists per 10 000 inhabitants.¹ According to the Lithuanian Institute of Hygiene (2019),² the number of graduates has increased dramatically over the past 15 years, with the Institute reporting that number of graduates ranged from 17 in 2005 to 142 in 2019.

Oral health among the Lithuanian population is generally poor, although it varies considerably. For example, 1% of people between the age of 35-44 and 11% of people between 65-74 are totally edentulous, with only 5% of 35- to 44-year-olds and 0.4% of 65- to 74-year-olds regarded as healthy (CPITN-score 0).³ Younger people in particular appear to suffer oral health problems with only 39.7% of schoolchildren brushing their teeth twice or more daily; gum bleeding has been found to be present in more than half of all respondents.⁴ A recent study of schoolchildren found that 24.9% of 15-year-olds and 21.7% of 18-year-olds have healthy teeth⁵ which are relatively low figures, given that the work contributions of dental hygienists have positive and significant impacts on the oral health of the population.^{6,7} Despite a lack of recent and reliable studies of gingivitis and periodontitis epidemiology at a national level, the prevention of oral diseases such as periodontitis and caries among young people faces considerable challenges. Here, there is an opportunity to clarify the position of dental hygienists and their valuable contribution in the preventive oral health care in Lithuania. To date, no data are available about the working situation of Lithuanian dental hygienists. Thus, the aim of this study was to evaluate information about the employment situation of oral healthcare professionals in Lithuania.

2 | MATERIALS AND METHODS

2.1 | Research question

What are the perceptions, if any, of dental hygienists about professional practice characteristics, the supply of dental hygienists in Lithuania and future career intentions?

2.2 | Ethics statement

After written official inquiry to the Vilnius Regional Biomedical Research Ethical Committee, it was stated that an ethics approval was not required due to low-risk nature of this anonymous study. The study was organized in collaboration with Lithuanian Dental Chamber, who agreed to participate and to send informed consents and surveys through their official e-mail to their licensed dental hygiene members. Moreover, study design was conducted in accordance with the Declaration of Helsinki and is consistent with the guidelines of the ethical board of the Central Committee on Research Involving Human Subjects. The study requires the completion of a single questionnaire to be provided on one occasion only and does not fall under the scope of Medical Research involving the Human Subjects Act.⁸

2.3 | Survey instrument

The questionnaire comprised 25 multiple-choice questions, including one open-ended question. Questions were composed according to similar foreign studies and those previously performed in Lithuania.⁹⁻¹¹ The questionnaire sought information about dental hygienists' demographics, characteristics of professional practice, patient load, future career intentions, personal opinion about dental hygienists workforce in Lithuania and the need of governmental workforce regulation.

2.4 | Procedures

The reliability of the questionnaire was tested with a pilot study. Ten dental hygienists in November 2017 were asked to complete the questionnaire twice with a one-month gap in between these recordings in order to avoid memory bias. The reliability of questions structured on nominal and ordinal scales was tested employing Cohen's kappa. Overall reliability was high for questionnaire items falling within a range of 0.7-1.0.

The overall study sample consisted of those licensed dental hygienists in Lithuania whose contact information was available in the License Registry of the Lithuanian Dental Chamber (N = 1109). Data were collected by e-mail from November 2017 to May 2018. Enquiries were sent on three occasions by e-mail to 1109 registered

dental hygienists, and in the final sample, 578 participated by submitting the fully completed questionnaire and informed consent.

2.5 | Statistical analysis

After pseudonymization of each registrant's information, data were exported and compiled in an independent file for statistical analysis. Analysis of the data was then performed using standard statistical programmes IBM SPSS (version 17) and EXCEL 2017 for Windows. Descriptive statistics for questionnaire data were computed. The comparative analysis in groups was performed using Pearson's chi-squared test for ordinal and nominal scale variables.

3 | Results

3.1 | Descriptive statistics

Table 1 shows the socio-demographic characteristics of study respondents. Out of a total of 1109 dental hygienists, registered by the Lithuanian Dental Chamber in 2018, the final response rate was 52.1% ($n = 578$). The vast majority of them (97.6% $n = 564$) were women, with a reported mean age of 29.9 years ($SD = 7.06$). Ages ranged from 20 to 56 years. Most of the dental hygienists had a Professional Bachelor Degree (3-years) and almost 20% had been awarded a University Bachelor Degree (4-years). Sixty-four per cent ($n = 370$) of respondents lived and 73.5% ($n = 425$) worked in the

TABLE 1 Socio-demographic characteristics

Variable	N	%
Sex		
Male	14	2.4
Female	564	97.6
Age		
20-29	337	58.3
30-39	182	31.5
40-49	53	9.2
50-49	6	1
Education level		
Professional Bachelor Degree	454	78.5
University Bachelor Degree	103	17.8
Master Degree	18	3.1
Ph.D.	3	0.5
Living place		
5 biggest Lithuanian cities	370	64
Other	208	36
Working place		
5 biggest Lithuanian cities	425	73.5
Other	153	26.5

five biggest Lithuanian cities, whereas 36% ($n = 208$) lived and 26.5% ($n = 153$) worked in other cities or small towns.

3.2 | Dental hygienists and their work

In response to the question on the number of years' work experience, 63.7% ($n = 368$) reported that they had spent less than five years working in dental hygiene, whereas 19.6% ($n = 113$) worked from 5 to 10 years, 10.2% ($n = 59$) worked from 10 to 15 years, with 6.6% ($n = 38$) working more than 15 years. Involved in private practice were 94.3% ($n = 545$) of the respondents. Table 2 shows that every third dental hygienist worked less than the full-time equivalent and almost 80% of the respondents reported that they "sometimes" to "always" lacked sufficient patients. One-third of respondents expressed a desire to have 50% more patients and another third wished to have 25% more patients during their working day. Due to the lack of

TABLE 2 Workload of the Lithuanian dental hygienists

Variable	N	%
Workload		
0.5 full-time equivalent (FTE)	124	21.4
0.75 FTE	72	12.4
1 FTE	273	47.2
1.25 FTE	70	12.1
1.5 FTE	33	5.7
More than 1.5 FTE	7	1.2
Lack of patients		
Never	127	21.9
Sometimes	295	50.9
Always	156	26.9
Percentage of additional patients willing to have		
10%	138	23.8
25%	194	33.5
50%	190	32.8
100%	41	7.1
200%	16	2.8
Additional job		
Yes	280	48.4
No	299	51.6
Type of additional job		
Dental assistant	190	67.9
Another	90	32.1
Dental assistant's education		
Yes	122	21.1
No	456	78.8
Wish to work only as dental hygienist		
Yes	428	73.9
No	53	9.2
Do not know	39	6.7

TABLE 3 Self-perceptions of dental hygienists about their supply and the need of their workforce regulation

Variable	N	%
Number of dental hygienists		
Lack	12	2.1
Appropriate	66	11.4
Excess	447	77.2
No opinion	54	9.3
Find a dental hygienist job is		
Easy	3	0.5
Moderate	67	11.6
Difficult	483	83.4
No opinion	26	4.5
Need for governmental regulation		
Yes	408	70.5
Partly	145	25.0
No	26	4.5

patients, almost one-half of dental hygienists took additional work. Besides working as a dental hygienist, the most common additional job was that of a dental assistant (67.9%, $n = 190$). Yet, only 21.1% ($n = 122$) of all dental hygienists in Lithuania have been educated as a dental assistant. Moreover, most of the respondents (73.9%, $n = 428$) reported that they only want to practice their profession.

3.3 | Young professional dental hygienists

Dental hygienists with <5 years working experience (so-called young professional dental hygienists) ($n = 368$) were more likely to indicate "the lack of patients" in comparison with more experienced dental hygienists ($n = 210$) ($\chi^2 = 29.915$, $df = 6$, $P = .001$). When compared to experienced dental hygienists, young professionals reported more often that finding suitable work in their chosen field is difficult ($\chi^2 = 27.450$, $df = 9$, $P = .001$). Dental hygienists with a larger workload as a dental assistant ($n = 306$) stated that it is difficult to practice fully their profession, rather than those who worked solely as a dental hygienist. Those working in Vilnius and Kaunas, Lithuania's two biggest cities ($n = 425$) acknowledged that it is easier to find work as a dental hygienist when compared to those working in smaller towns and rural areas ($\chi^2 = 63.217$, $df = 33$, $P = .001$). There were no statistically significant differences in the attitude of employment possibilities between hygienists working in the private sector ($n = 535$), public sector ($n = 43$) or having their own practice, that is self-employed ($n = 10$). No differences were found between those who worked in one or more work places ($P > .05$).

Young professionals more often indicated their intention to emigrate compared to those who were older and had worked for more than five years as dental hygienists ($\chi^2 = 34.112$, $df = 6$, $P = .001$). The intention to emigrate was statistically more significant between those working only a half-day ($n = 124$) compared to those who had

a larger workload ($\chi^2 = 20.333$, $df = 10$, $P = .026$). Those lacking patients also intended to emigrate more often than those dental hygienists satisfied with the number of regular patients ($\chi^2 = 48.225$, $df = 4$, $P = .001$). No significant statistical differences ($P > .05$) were found between hygienists expressing the intention to emigrate who had an additional workload as a dental assistant, and those who practised dental hygiene alone. The majority of respondents stated that there was an excess of dental hygienists in Lithuania (Table 3). The majority opinion of the dental hygienists is that finding employment to practice their profession fully in Lithuania is difficult.

Most respondents stated that the Lithuania's Ministry of Health should be responsible for the regulation of the dental hygienists workforce in the country (Table 3). There were no differences in attitudes about the need for governmental regulation of the number of dental hygienists in Lithuania between those with a different education level, place of work or years of practice ($P > .05$).

4 | DISCUSSION

The aim of the study was to enquire about practice characteristics, and the perceptions and expectations of dental hygienists towards their employment opportunities. A response rate of 52.1 per cent is relatively high in comparison to a previous Dutch study among members of their Dental Hygienists Association, with a usable response rate of 41 per cent.¹² Moreover, the characteristics of study respondents reflected a very heterogeneous population, as shown in Table 1. However, unlike the Netherlands no data are available in Lithuania, and no special steps were taken to maximize response rates.¹³

The study respondents mentioned that there were too many dental hygienists in the country compared to the positions available. According to the Lithuanian Dental Chamber, the ratio between registered dental hygienists and residents in Lithuania in 2018 was 1:2588 and between dentists and residents, respectively, 1:694. The mean dental hygienist to population ratio provides us with some insight into the situation and could be an indicator for the service accessibility for the population.⁶ Tseveenjav (2009) mentioned that the number of practicing dental hygienists varies greatly worldwide.¹⁴ For example, the following ratios of dental hygienists to the population were as follows: 1:1432 in Japan; 1:1796 in Canada; 1:1822 in the USA; 1:821 000 in Germany; 1:96 375 in Italy; 1:84 409 in Portugal; and 1:39 670 in Spain. In the Scandic-Nordic countries, the ratio of hygienists to population is about 1:2000-4500, which is among the highest in Europe. In Lithuania, the number is similar to that in Scandic-Nordic countries. Moreover, each year in Lithuania about 150 dental hygienists graduate, so that numbers are constantly on the rise. In the present study, 73.5 % of practicing dental hygienists work in the country's five biggest cities.

In Lithuania, the ratio of dental hygienists to dentists is similar to other European countries such as Finland, Sweden, Norway and Switzerland. Yet, dental hygienists in Lithuania reported their willingness to work longer hours as dental hygienists which possibly

indicates underemployment. As can be seen from other studies in Lithuania, a surplus of dentists in Lithuania (especially in urban areas) is reported.⁹ About 30% of the country's dentists and dental specialist worked overtime, that is more than 40 hours per week, were short of patients and required 10% more work.⁹ Therefore, dentists are taught to administer preventive oral care in their clinical practices. This may influence the employment level of dental hygienists and the reality of dental hygienists not fully using their scope of practice. Moreover, half of the respondents in this study stated that they provided dental hygiene services only, with the remaining also working as dental assistants. It may indicate a shortage of dental assistants in Lithuania.

Since 1996, when the profession of dental hygienist was established in Lithuania, no governmental human resource regulation has been enacted; hygienists worked mainly in the private sector and until 2019 and had no government support to participate in the public health sector. This is borne out by our research which found that in Lithuania the great majority of respondents worked in the private sector, with only a handful (7.4%, $n = 43$) employed in the public sector. The same consistent pattern was found among dental hygienists from Australia, Austria, Canada, Denmark, Germany, Ireland, Israel, Italy, Japan, Korea, Latvia, the Netherlands, New Zealand, Slovakia, South Africa, Switzerland, the United Kingdom and the United States.¹⁵ For example, 92% of dental hygienists in Washington State work only in a private office or clinic setting, while the remaining 8% work at least part-time in either a public/community health clinic or in a teaching/research or other non-clinical position.¹⁶ There were only three exceptions: for the Scandinavian countries, the reverse order applies with more working in community health.¹⁵ In these Nordic countries, the public sector takes care of most children, the elderly in institutions, special needs group and adults. Dental services are widely available and to a great extent are funded by the state. The private sector mainly takes care of working-age adults.¹⁷ This seems to be effective, and we suggest that it should be used as a model for planning future educational and employment changes in Lithuania.

Another way to resolve the centralization of the oral health-care system is the example of California where dental hygienist can be officially registered in what is known as alternative practice (RDHAP).¹⁸ Such a practitioner is a licensed registered dental hygienist with specialized training. They hold a specific license allowing them to practice outside of the traditional dental office. These practice settings may include but are not limited to schools, skilled nursing facilities, hospitals, private homes and in some instances their own RDHAP offices. Also, the RDHAP provides patients with the same type of professional preventive care they would receive in a dental office and allows patients to receive care conveniently. It was found that 68.9 per cent of the patients in an RDHAP practice are medically compromised, 52.2 per cent are physically disabled and almost a third (29.9 per cent) on average have a developmental disability.¹⁸ A similar consistent autonomy pattern is also found in 20 IFDH member countries—Australia, Austria, several Canadian provinces, Czech Republic, Denmark, Finland, Germany,

Ireland, Italy, Netherlands, New Zealand, Norway, Russia, Slovakia, South Africa, Spain, Sweden, Switzerland, United Kingdom, several states of the US. It was found that countries with >40 years of educating dental hygienists exhibited more independent dental hygienist practices than those with <40 years of educating dental hygienists.¹⁹ Lithuania has 24 years of experience in educating dental hygienist but needs to solve issues in a timely manner. It must be borne in mind that dental care utilization increases when hygienists have more autonomy; notable, these increase in utilization is primarily for preventive care services.⁶ In addition, dental hygienists autonomy could improve access to oral health care in areas with health professional shortages.²⁰

5 | LIMITATIONS

This study has some limitations that can be addressed through further research. Limitation of the questionnaire was perhaps the way questions were framed, because asking mostly multiple-choice questions does not necessarily lead to a deeper exploration of the reasons why Lithuanian dental hygienists are underemployed. Also, four questions in the questionnaire were designed with 3-point scales and that decreased the sensitivity of the respondents' answers. It would be far better to additionally conduct face-to-face, semi-structured interviews to gather more information.

However, the present study provides baseline data about the working patterns of dental hygienists and their views about current employment opportunities.

The findings suggest that further studies are required to establish the underlying cause of underemployment among Lithuanian dental hygienists. According to the Lithuanian Institute of Hygiene (2019), the number of dental hygienists will likely continue to expand in the future. Hence, further research is needed to undertake thorough evidence-based workforce planning projections and the possible benefits and limitations of governmental human resource regulation. Finally, we should examine the needs and efficiency of the dental hygiene and assisting education in Lithuania. The recent COVID-19 crisis, with lockdown or semi-lockdown situations, has an effect on oral health practices, and therefore, for future research it is important to examine the impact of this crisis on the national oral and general healthcare system, including the development of new insights into the utilization of oral health providers.

6 | CONCLUSION

The majority of dental hygienists practising in Lithuania stated that they had insufficient patients, in the absence of which they were obliged to look for additional work, primarily as dental assistants. Also, most respondents expressed the opinion that there is a surplus of dental hygienists. Governmental support to optimally regulate oral health human resources is, according to most dental hygienists, an emphatic wish related to a possible solution at the national level.

7 | CLINICAL RELEVANCE

7.1 | Scientific rationale for the study

The number of dental hygienists increased dramatically over the past 15 years, but there is no published data about dental hygienists' practice characteristics, views or employment possibilities in Lithuania.

7.2 | Principal findings

The majority of dental hygienists expressed the opinion that there is a surplus of dental hygienists in Lithuania and they had insufficient patients, in the absence of which they were obliged to look for additional work. They tend to work as dental assistants rather than supporting professional dental hygiene services by promoting an increased patient pool or establishing independent practices.

7.3 | Practical implications

Further research is needed to gain more detailed information about dental hygienists' views about governmental workforce regulation and their willingness to establish more independent dental hygienist practices.

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CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

AUTHOR CONTRIBUTION

Alina Puriene conceived on the presented idea, designed and directed the project. Gitana Rederiene and Greta Aidukaite collected the data, carried out the implementation, took the lead in writing the manuscript. Vilija Berlin helped to create questionnaire, collected the data. Yvonne A.B. Buunk-Werkhoven provided critical feedback and helped shape the research, analysis and manuscript. All authors designed the model and analysed the data, contributed to the interpretation of the results, contributed to the final version of the manuscript. All authors provided critical feedback.

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