

The Dental Hygienists in Sweden and Portugal: A Comparative Study

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Received : 02-01-19.

Accepted : 06-03-19.

Published : 07-06-19.

INTRODUCTION

The dental hygienists (DHs) are the key provider of preventive oral care for individuals, families, and groups in society.^[1,2] They are responsible for promoting oral health, preventing, diagnosing and taking part of the treatment of dental caries and periodontal diseases.^[3,4] The DHs contribution to oral health care has increased over the years. To meet these new demands, the DH role has changed, and the different tasks for DH in Europe vary depending on the health-care system and needs from the population and the society.^[4]

DH educational programs are most often 3 years and are conducted at institutions of higher education. However, the standard of education as well as differences in legislation regulating the scope of practice differ. Even though the dental hygiene profession has had a tremendous impact on oral health outcomes through the

ABSTRACT

Aims and Objectives: The aim of the present study was to identify the dental hygienists (DHs) working areas and compare these findings between Sweden and Portugal. **Materials and Methods:** A web-based questionnaire was sent by E-mail to all 2943 members of the Swedish DH Association and 381 members of the Portuguese DH Association. The questionnaire contained questions about; number of years of work, which patient groups they worked with, if they had got sufficient knowledge from the education and what different tasks they worked with. Independent sample *t*-test, relative risk, and logistic regression analysis were used as statistical methods. **Results:** The response rate for Sweden was 31% (*n* = 923) and the corresponding figure for Portugal was 53.5% (*n* = 204). The most common tasks for the DHs, in both countries, were to diagnose and treat patients with periodontitis and to diagnose and perform caries prevention. In Portugal, 86.5% worked with orthodontic patients compared to 32.3% in Sweden (*P* = 0.001). The logistic regression analysis showed that there was a 25% (*P* = 0.02) higher probability that Swedish DHs took more X-rays and 38% (*P* = 0.042) probability that they had more communications skills compared to the Portuguese DHs. **Conclusion:** The DH profession in Sweden and Portugal was overall quite similar. Despite a few local differences, both the academic education and scope of practice corresponded well between the countries. The few discrepancies could be explained by differences in legislations in each country.

KEYWORDS: Dental hygienist, education, oral hygiene, questionnaire

delivery of preventive and therapeutic services, there are still countries in Europe, where the profession has not yet been recognized.^[5]

In Sweden, the DH education started in 1968 and in 1988 a 2-year program was implemented and today a 3-year program is mandatory. Today, there are 4837 registered DHs in Sweden.^[6] DHs were licensed in 1991 to become independent practitioners and can work in public dentistry, private dental offices as employees, or run their own business.^[7]

In Portugal, the DH program started in 1984 by a joint effort from Lisbon Dental School and the University of

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How to cite this article: Johannsen A, Malmqvist S, Graça S, Assunção V, Albuquerque T, Luis H. The dental hygienists in Sweden and Portugal: A comparative study. *J Int Soc Prevent Communit Dent* 2019;9:296-302.

Access this article online

Quick Response Code:



Website: www.jispcd.org

DOI: 10.4103/jispcd.JISPCD_1_19

Washington in Seattle, USA. It started as a 2.5 years' program, nonuniversity degree. The program focused on prevention instead of treatment to reduce, the costs for oral diseases in the country. In 1987, a 3 years' program was introduced, which has evolved, and in 2001, the program was fully integrated at the University of Lisbon as a university degree.^[8] As of today, there are around 720 DHs in Portugal, practicing in community, clinical, and marketing areas.

The integration in the higher education system allowed DHs to process with graduate studies in many different areas and in several countries it is possible to obtain a master degree and a doctoral education (PhD).^[9] Today, 40 DHs have a PhD degree in Sweden and in Portugal, there are five DHs with a PhD degree.^[10] The research conducted by DHs has over the last decades increased. It has contributed to the improvement of oral health, patient satisfaction and treatment outcomes of oral diseases. However, despite this increase, there is still, overall in dentistry, a lack of research regarding oral health promotion.^[11]

A modern health-care system, that is increasingly team-based, requires that health professionals work effectively together. To ensure an effective functioning dental team, education of dental professionals needs to be shaped in a way that professionals can engage and interact.^[12] When DH's work together and collaborate with the dentists, it can be seen as both complementary and supportive for the patient, which leads to benefits for both patients and society.

Leisnert *et al.*^[13] emphasized the importance of initiating and encouraging teamwork between dental and DH students during the education to get a holistic view of the patients and also to prepare the students for their professional life. Collaboration with other health professionals has also been shown very fruitful, not only for the patient and the community but also for the understanding of the association between oral health and general health.^[14]

Considering this, it is important to investigate if the DHs in different parts of Europe perceive that they have sufficient knowledge to perform the different tasks that are expected of them.

The aim of the present study was to identify the DHs' working areas and compare these findings between Sweden and Portugal.

MATERIALS AND METHODS

ETHICAL APPROVAL

This study was approved by the Regional Ethics Committee in Stockholm, Sweden, Dnr. 2016/270-31/1

and in Portugal by the Committee of Ethics for Health at the School of Dental Medicine at the University of Lisbon (CES-FMDUL) on March 8, 2016.

STUDY PARTICIPANTS

A web-based questionnaire was sent by E-mail to all 2943 DH members of the Swedish DHs Association and to 381 DHs members of the Portuguese DHs Association, where they were invited to participate in the study. A reminder was sent out after 3 weeks to those who had not responded.

QUESTIONNAIRE

Several of the questions in the questionnaire was adopted from other studies.^[4] The questionnaire was used in both countries. The questionnaire contained 14 questions and was translated into Swedish and Portuguese. It included items about the length of education, how many years they have been working as DHs and in which organization they worked. The DHs were also asked to estimate the time they worked, in percentages, with patients in different age groups and how much time they spent on patients with gingivitis, periodontitis, dental implants, caries, orthodontics, and on tobacco cessation. The DHs were also asked about the different tasks they performed and if their education had given them sufficient knowledge to perform the different tasks that were expected from them. Regarding the questions about sufficient knowledge, the response alternatives were, agree completely, agree, slightly agree, and not agree. The two alternatives agree completely and agree were combined into one for analysis purposes. Other questions concerned whether the DH collaborated with a dentist and/or other health-care professionals and if they had completed any courses after their DH education.

STATISTICAL ANALYSIS

The analysis of the data was performed using the software package PASW Statistics 18 (PASW Inc., Chicago, IL, USA). Descriptive statistical methods were used, and the data are presented in percentages and numbers. Independent sample *t*-test was used to compare the mean work time differences.

In this study, we were interested in the relationship between country and the probability of working with different work tasks. Relative risk was calculated and compared the probability/risk of two events, for instance, the relative risk was measured as the probability of working with X-rays divided by the probability of not working with X-rays. The ratio indicated how many times more likely Swedish DH are to work with X-rays compared to Portuguese DH.

Logistic regression analysis was used to include multiple variables to estimate the probability of working with a certain task. We also analyzed the probability of different

tasks being performed by the DHs in both countries, while adjusting while adjusting for educational attainment, age, and work experience. Statistical significance was set at $P < 0.05$ for each test.

RESULTS

The response rate for Sweden was 31% ($n = 923$), (902 women and 21 men), and the corresponding figure for Portugal was 53.5% ($n = 204$), (173 women and 31 men). In Sweden, 33.5% of the DHs had completed a 3 years' education, and the corresponding figure for Portugal was

99.5% [Table 1]. Table 1 also shows that 60% of the DHs in Sweden had worked for more than 10 years; the corresponding figure for Portugal was 43.2%. Regarding working in different organizations, in Sweden, 59.3% of the DHs worked in public dental care while in Portugal 61.1% worked in private dental care.

The DHs from Sweden and Portugal worked mainly with patients with gingivitis and periodontitis. In Portugal, 86.5% worked with orthodontic patients compared to 32.3% in Sweden [Table 2]. The Swedish DHs spent significantly more time with patients having chronic or

Table 1: Demographic data of the dental hygienist, the length of education, number of years of work as dental hygienists and organization that dental hygienists work in Sweden and Portugal

	Sweden, % (n)	Portugal, % (n)	Relative risk	95% CI	P
Years of education	(n=923)	(n=204)			
1	20.5 (189)	0	-	-	-
2	44.5 (411)	0.5 (1)	90.83	12.84-642.64	<0.001
3	33.5 (309)	69.6 (142)	0.47	0.41-0.54	<0.001
4	1.5 (14) ^a	29.9 (61)	0.05	0.03-0.08	<0.001
Working as dental hygienist	(n=891)	(n=204)			
<5	17.6 (162)	32.4 (66)	0.56	0.44-0.72	<0.001
6-10	19.0 (175)	24.5 (50)	0.80	0.61-1.05	0.1145
11-15	18.7 (173)	15.7 (32)	1.23	0.88-1.75	0.2257
16-20	14.1 (130)	15.7 (32)	0.89	0.63-1.28	0.5530
>20	27.2 (251)	11.8 (24)	2.31	1.56-3.42	<0.001
Organization (work≥80%)	(n=789)	(n=185)			
Public dental clinic	59.3 (468)	25.4 (47)	13.71	6.95-27.08	<0.001
Private dental clinic	28.8 (227)	61.1 (113)	0.54	0.46-0.63	<0.001
Hospital/institution	2.7 (21)	5.4 (10)	0.49	0.23-1.023	0.0591
Own practice	3 (24)	2.7 (5)	-	-	-
Government/state	0	0.5 (1)	-	-	-
Specialist care	4.2 (33)	2.2 (4)	1.93	0.69-5.39	0.2072

^aIn Sweden, dental hygienist who have performed their master degree. CI=Confidence interval

Table 2: Demographic data of type of patients and conditions/diseases the dental hygienist work with in Sweden and Portugal

	Sweden, % (n)	Portugal, % (n)	Sweden Mean percentage of time (SD)	Portugal Mean percentage of time (SD)	P
As dental hygienist I work with patients	(n=923)	(n=185)			
Gingivitis	91.5 (845)	97.8 (181)	31.7 (±24.1)	38.7 (±24.2)	<0.001 ^b
Chronic periodontitis	91.1 (841)	83.2 (154)	30.9 (±21.4)	19.5 (±13.3)	<0.001 ^c
Aggressive periodontitis	78.8 (727)	57.8 (107)	9.2 (±14.0)	7.1 (±8.1)	0.016 ^c
Caries	90.1 (832)	a	23.6 (±19.8)	a	
Dental implants	86.5 (798)	74.1 (137)	9.3 (±12.3)	18.7 (±17.1)	<0.001 ^c
Orthodontics	32.3 (298)	86.5 (160)	2.4 (±8.5)	16.1 (±17.6)	<0.001 ^c
Tobacco cessation	21.0 (194)	23.8 (44)	2.1 (±9.4)	3.8 (±5.43)	0.102 ^b
Work with kind of patients (years)	(n=923)	(n=200)			
Children (3-11)	68.4 (631)	82.5 (165)	8.8 (±11.0)	21.9 (±25.2)	<0.001 ^c
Adolescents (12-19)	77.1 (712)	87.5 (175)	11.0 (±12.3)	18.0 (±14.6)	<0.001 ^c
Young adults (20-30)	90.8 (838)	82.5 (165)	17.2 (±11.4)	17.8 (±15.3)	0.616 ^c
Adults (31-65)	93.4 (862)	88.0 (176)	30.9 (±16.7)	29.1 (±22.2)	0.301 ^c
Seniors (>65)	92.4 (853)	71.0 (142)	26.4 (±17.5)	11.0 (±12.9)	<0.001 ^c

Significantly higher mean percentage highlighted in bold ($P < 0.05$). ^aThat question was not include in the questionnaire in Portugal,

^bIndependent *t*-test with equal variances assumed, ^cIndependent *t*-test with equal variances not assumed. SD=Standard deviation

aggressive periodontitis than the Portuguese DHs. On the other hand, Portuguese DHs spent significantly more time with patients having gingivitis and disease around dental implants. Moreover, they also spent more time working with children and adolescents.

PERCEIVED SUFFICIENT KNOWLEDGE FROM THE DENTAL HYGIENIST EDUCATION

The majority (80%–90%) of the DHs from Sweden and Portugal perceived that they had got sufficient knowledge from the Dental Hygiene education to diagnose and treat patients with caries and periodontitis [Table 3]. In both countries, the DHs agreed that they had got sufficient knowledge in taking X-rays. Most of the DHs in Sweden felt that they had got sufficient knowledge about giving local anesthesia. In Portugal, this subject is not included in the curriculum. Significantly, more DHs, 33%, in Portugal compared to 11.4% DHs in Sweden perceived that they had got sufficient knowledge from their education about teeth whitening. Regarding the communication skills, the Portuguese’s DHs felt more satisfied (72.3%) with this knowledge from the education than the Swedish DHs (59.7%).

TASK PERFORMED BY DENTAL HYGIENISTS

The most common tasks, in both countries, were to diagnose and treat patients with periodontitis and to perform caries prevention [Table 4]. Significantly more DHs in Portugal worked with fluoride treatment in

comparison to the Swedish DHs. In Sweden, significantly more DHs performed fillings, and they also took more X-rays compared to the DHs in Portugal. Moreover, questions related to motivational interviewing (MI) spirit was significantly more used among the Swedish DHs compared to the DHs in Portugal (80.8% vs. 46.6%, $P = 0.001$). All DHs in Portugal had a collaboration with a dentist; the corresponding figure for Sweden was 86%. Significantly more DHs in Portugal were involved in development projects compared to the Swedish DH.

Using the logistic regression, it was found that there was a 25% ($P = 0.02$) higher probability that Swedish DHs took X-rays than the Portuguese. It was also shown that years of work experience did not influence this issue. When using communications skills as outcome variable, there was 38% ($P = 0.042$) higher probability that Swedish DHs worked with communication compared to the Portuguese. There was 17% ($P = 0.027$) higher probability that Swedish DHs worked with periodontitis compared to Portugal. A 37% ($P = 0.044$) higher probability for Swedish DHs to work with fillings was also shown.

DISCUSSION

The primary outcome of the present study was that the DH education in Sweden and Portugal was rather similar. The secondary outcomes were that the differences mainly

Table 3: The dental hygienist perceived sufficient knowledge from dental hygienists education

	Agree Sweden,% (n)	Agree Portugal,% (n)	Relative risk	95% CI	P	Partly agree Sweden,% (n)	Partly agree Portugal,% (n)	Relative risk	95% CI	P
Diagnose/examination										
Diagnose periodontitis	89.9 (830)	96.8 (179)	1.02	0.97-1.08	0.3876	9.8 (91)	2.2 (4)	5.03	1.87-13.53	0.0014
Diagnose caries	81.1 (749)	98.9 (183)	0.90	0.85-0.96	0.0004	16.9 (156)	0	-	-	
Treatment										
Treat periodontitis	89.7 (828)	91.8 (169)	1.08	1.01-1.16	0.0184	9.9 (91)	5.4 (10)	2.01	1.06-3.79	0.0311
Caries prevention (fluoride)	94.8 (875)	92.2 (166)	1.16	1.09-1.25	0.0001	4.7 (43)	4.4 (8)	1.19	0.57-2.49	0.6479
Temporary fillings ^a	25.8 (238)	8.1 (15)	3.48	2.12-5.75	0.0001	34.9 (322)	7.6 (14)	5.08	3.04-8.49	0.0001
Take X-rays	87.2 (805)	97.3 (180)	0.98	0.93-1.04	0.6834	11.3 (104)	1.1 (2)	11.49	2.86-46.19	0.0006
Infiltration anesthesia ^b	93.2 (860)	2.7 (5)	38.01	15.99-90.37	0.0001	3.9 (36)	3.3 (6)	1.32	0.57-3.105	0.5156
Mandibular anesthesia ^c	75.0 (692)	2.7 (5)	30.58	12.86-72.76	0.0001	11.4 (105)	3.8 (7)	3.31	1.57-7.02	0.0017
Teeth whitening	11.4 (105)	33.0 (61)	0.38	0.29-0.50	0.0001	24.3 (224)	25.9 (48)	1.03	0.78-1.35	0.8238
Information										
Diet	75.7 (699)	64.3 (119)	1.30	1.15-1.47	0.0001	20.6 (190)	23.8 (44)	1.13	0.82-1.56	0.4351
Tobacco cessation	28.2 (260)	34.8 (64)	0.89	0.71-1.12	0.3537	38.8 (358)	28.8 (53)	1.49	1.17-1.91	0.0014
Skills in communication	59.7 (551)	72.3 (133)	0.88	0.79-0.99	0.0389	32.7 (302)	20.1 (37)	1.80	1.33-2.45	0.0002
Communicate oral health to general health	58.4 (539)	75.0 (138)	0.86	0.77-0.96	0.0084	-	-	-	-	

^aIn Portugal - 84.3% (156) reported that they don't have this competence. Temporary fillings, ^bIn Portugal - local anesthesia is not included in the curricula in the dental hygiene education. In Portugal - 94.0% (173) reported that they don't have this competence, ^cIn Portugal - local anesthesia is not included in the curricula in the dental hygiene education. In Portugal - 93.5% (172) reported that they don't have this competence. CI=Confidence interval

Table 4: Tasks performed by dental hygienist in Sweden and Portugal

	Tasks performed by DH Sweden, % (n)	Tasks performed by DH Portugal, % (n)	Relative risk	95% CI	P
Diagnose/examination					
Periodontitis	95.7 (883)	85.1 (172)	1.13	1.07-1.21	<0.001
Caries	93 (858)	98.5 (201)	0.94	0.92-0.97	<0.001
Treatments					
Periodontitis	94.9 (876)	76.5 (156)	1.24	1.15-1.34	<0.001
Caries prevention (fluoride treatment)	93.3 (861)	98.5 (201)	0.94	0.92-0.97	<0.001
Caries (filling)	40.4 (373)	1.5 (3)	27.88	9.04-85.98	<0.001
Take X-rays	95.2 (879)	64.7 (132)	1.47	1.33-1.63	<0.001
Infiltration anesthesia	93.9 (867)	10.8 (22)	8.71	5.87-12.93	<0.001
Mandibular anesthesia	82.6 (762)	0	-	-	-
Teeth whitening	59.6 (550)	57.4 (117)	1.03	0.91-1.18	0.5634
Information/collaboration					
Periodontitis	97.1 (896)	85.8 (175)	1.13	1.07-1.20	<0.001
Caries	96.6 (892)	89.7 (183)	1.07	1.03-1.13	0.0024
Oral hygiene	97.6 (901)	89.7 (183)	1.08	1.04-1.14	<0.005
Instruction oral hygiene (TB and interdental)	97.2 (897)	90.2 (184)	1.07	1.02-1.13	0.0017
Diets	86.8 (801)	73.5 (150)	1.18	1.08-1.29	<0.002
Tobacco cessation	33.4 (308)	33.3 (68)	1.00	0.81-1.24	0.9921
Communication (MI spirit)	80.8 (746)	46.6 (95)	1.73	1.49-2.02	<0.001
Link oral health to general health	92.4 (853)	89.7 (183)	1.03	0.98-1.08	0.2435
Collaboration with dentist	86.0 (794)	100 (204)	0.92	0.83-1.03	0.1626
Research/development projects	6.1 (56)	15.7 (32)	0.38	0.26-0.58	<0.001

TB: Tooth brushing, CI=Confidence interval, DH=Dental hygienists, MI=Motivational interviewing

could be explained by the different patients groups that the DHs worked with, and also by different legislation in the respective country. The DHs worked with tasks such as preventive treatment of caries and also with information regarding oral hygiene and diet, which also has been reported in other studies.^[15]

The reason for comparing Swedish and Portuguese DHs was that the profession has since many years been recognized and established in those countries and there is a need to define the DH profession in Europe and also to make it possible for DHs to work in other countries. A recent study from Germany highlighted that there is a need to get a clear overview of the types and the quality of DH education.^[16]

The present study also showed that it was more common for Swedish DHs to work in Public Dental care compared to Portugal where the DHs worked more in the private sector. This may be explained by the fact that the dental health care is organized differently in the countries. In Sweden, the DHs in the public health sector worked more with regular check-ups of children and adults whereas DHs in the private sector worked more with adults and periodontal treatments. A study from Finland showed a similar organizational structure.^[4] In Portugal, the private sector of dental care has always been larger, even though there is a national program for oral health for children

and adolescents until the age of 18, where DHs have the major responsibility.

All Portuguese DHs had a 3 years' education whereas in Sweden the DHs had either 2 or 3 years of education. From 2019, there will be a mandatory bachelor 3 years' DH education in Sweden. Stolberg and Tilliss^[17] emphasized that a bachelor degree will prepare the DHs to meet the challenges of different patients oral health care needs, and also to work more inter professionally.

In Portugal, more DHs were involved with orthodontic patients than in Sweden. This has also been highlighted by educators from Finland who believe that working with orthodontic patients is one of the DHs tasks that should be emphasized.^[4] In Sweden, the DHs will have more responsibility for the children's dental check-ups which also will include orthodontic patients.

One major discrepancy between the two educations was that the Swedish DHs gave more local anesthesia than the Portuguese DHs. The explanation is due to that the DHs in Portugal worked more with children and that they are not allowed to give mandibular anesthesia in Portugal. Today, many patients go for regular check-ups solely to the DH, meaning that the demands and responsibilities have increased a lot. Jokiahio *et al.*^[18] mentioned that the DHs' skills are neither fully nor effectively utilized and it is important to clarify the DHs and dentists tasks, in

accordance with their responsibilities and the legislation. Another difference was that the Swedish DHs took more radiographs compared to the Portuguese DHs. This might be explained by the fact that the DHs in Portugal worked more with younger patients in health centers and thus the need for X-rays are not that obvious. The present study also showed that approximately 20% of the DHs worked with tobacco cessation in both countries. Earlier studies have reported that the reasons why DHs do not work with tobacco cessation are lack of time, competence and experience or a need for a higher priority of this issue in the organization of dental care.^[19,20] Furthermore, it has been reported that most patients were not aware that tobacco cessation activities can be performed in dentistry.^[21]

The differences in the use of MI in the DHs daily work might be explained by the way the DHs interpret MI spirit, or by different reimbursement systems from the community. Using behavioral methods, for example, MI have been studied mostly in patients with periodontitis,^[22] and in orthodontic patients,^[23] and it has been shown that MI-sessions have an impact on the ability to achieve a behavioral change in a patient. In an interview study, the DH strongly recommended the use of MI communication, but they felt it was difficult, because of lack of time or managing patient's resistance.^[24] MI counseling technique has also been investigated among DH students, and it was shown that more feedback from a tutor facilitated learning and also the use of MI spirit.^[25,26]

In Sweden, 48.5% of DHs worked with patients with peri-implant mucositis and 41.5% with peri-implantitis. This topic was also included in the curriculum in the education in Portugal, but unfortunately, the question was not included in their questionnaire, which is a limitation of the study. A recent meta-analysis by Lee *et al.*,^[27] emphasized the difficulty to diagnose peri-implant diseases due to the varying disease definitions.

During the treatment and maintaining of the oral diseases, it is important to collaborate with a dentist, and the present study reported that all DHs in Portugal worked in teams and the corresponding figure for Sweden was 86%. Speculation regarding the difference points to the fact that the DH profession in Sweden has its own license and the DHs are also allowed to run their own businesses. Moreover, working in teams with shared treatment views between dentists and DHs has a beneficial effect on patient's satisfaction and treatment outcome^[28] A somewhat surprising but positive result was that about 90% of the DHs from both countries explained to their patients about the link between oral and general health. This indicated a holistic view of the patients and an increased need to collaborate with other professionals.

A study from Saudi Arabia showed that DHs had a low level of knowledge about the oral-systemic diseases relationship.^[29] Several studies highlighted many benefits of inter-professional collaboration both within oral health teams as well as with general health care^[2,14,30] The present study showed that one third of the DH in Sweden and Portugal sometimes worked with other oral health professionals.

STRENGTHS AND LIMITATIONS OF THE STUDY

The present study has some limitations that need to be discussed. The results cannot be generalized because of the rather small number of responders and because no nonresponse analyses were performed due to the lack of data on them. A strength of the study is that the distribution of the study population, the distribution of DHs affiliation is consistent in general with how it looks in Sweden and Portugal. There is also a challenge in using exactly the same questions, for example, a question may not be relevant because of the countries legislation. Another example is that the classification of oral diseases can differ. However, several questions have been used in other studies which strengthen the validity and reliability of the present study.

Future work for DHs comprises of health promotion in different target groups, treatment of oral diseases, having leading positions and, working with research to strengthen the profession. The present study showed that the DHs in both countries were working with development projects including, master and PhD-thesis. Further increase of dental hygiene research will help to position the profession alongside other academically recognized health-care disciplines.^[31] There is still a need to increase the public awareness about the DH profession, regarding various preventive treatments, to gain sustained oral health improvements, a better quality of life for the population and more cost-effective strategies.^[32] A study by Fried *et al.* speculates that in 2040 the DH will work together in multidisciplinary health-care teams.^[33] A unanimous goal for the European DH Federation is to create a Common Educational Framework for DHs in Europe based on the professional profile and description of competence.^[34] The present study has added knowledge to reach this goal, but there is a need for future similar studies to compare the DH education between the EU-countries. Therefore, the formal recognition of the profession by European legislation and agreement on a curriculum for DH training leading to a defined professional competence and learning outcomes is required.

CONCLUSION

The DH profession in Sweden and Portugal were overall quite similar. Despite a few local differences, both the academic education and scope of practice corresponded well between the countries. The few discrepancies could be explained by differences in legislations in each country.

ACKNOWLEDGEMENT

This study was supported in part by the European Commission, Erasmus + project, European professional training platform for Continuing professional development of DH - Strategic partnership. Project no. 2015-1-SE01-KA202-012278.

FINANCIAL SUPPORT AND SPONSORSHIP

Nil.

CONFLICTS OF INTEREST

There are no conflicts of interest.

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