Percepcija okruženja za učenje studenata dentalne medicine u Hrvatskoj, Indiji i Nepalu

Self Assessment of Dental students’ Perception of Learning Environment in Croatia, India and Nepal

Introduction

The direction of dental education and changes in dental schools’ curricula emerged from research by dental practitioners, professional organizations and the academic community (1). It has been recognized that dental students, as active participants in educational process, should be central to changes in dental curricula and learning environment improvements (2,3). Undergraduate dental students are required to acquire specific competences and knowledge in the 4-6 years period of their training. This can be very stressful (4), and creating positive and supportive learning environments is becoming an important goal for all the participants in the dental educa-
Percepcija studenata dentalne medicine o okolini za učenje

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vena iz različitih anketa informiraju sastavljajućih dentalnih kurikula o perspektivi studenata (6). Mnogobrojni instrumenti razvijeni su za procjenu studentske percepcije obrazovne, emocionalne i socijalne okoline njihovih fakulteta – Learning Environment Questionnaire, Dundee Ready Education Environment Measure (DREEM), Clinical Learning Environment Inventory (CLEI), Anatomy Education Environment Measurement Inventory (AEEMI) i drugi (7, 8, 9, 10). Ustanovljeno je da percepcija studenata bolje предвиđa akademski uspjeh na sveučilištima negoli uspjeh u srednjoj školi (2, 11).

Marshallovo (12) sastavljanje upitnika Medical School Learning Environment Survey – MSLES, omogućilo je edukatorima u zdravstvu uvid u studentsku percepciju njihove okoline za učenje. MSLES sadržava 55 pitanja podijeljenih u sedam kategorija kojima se mjeri studentska percepcija o:

1) fleksibilnosti – mogućnosti da nastavnici i studenti zajedno prilagode okolinu za učenje
2) interakciji među studentima – društvenoj i akademskoj;
3) emocionalnom okružju – načinu na koji iskustva studenata utječu na njihovu percepciju okoline za učenje
4) potpori – o razini nastavničke potpore studentima
5) stjecanju iskustva – razini viđenja relevantnosti strukturiiranog učenja za praktični rad
6) organizacijama – razini kohezije iskustva učenja u kuriku-
u
7) širini interesa – opsegu poticanja studenata iz izvankurikulnim aktivnostima.

Pokazalo se da je MSLES pouzdan i interno konzistentan kad je riječ o mjerjenju studentske percepcije njihove okoline za učenje u kurikulima temeljenima na predavanjima i onim tema temeljenima na rješavanju problema (12, 13). MSLES je bio modificiran sa svrhom stjecanja uvida u studentsku percepciju njihova obrazovanja, a DSLES (Dental Student Learning Environment Survey) korišten je za procjenu percepcije studenata dentalne medicine (2). DSLES je zapravo identičan MSLES-u, ali su riječi medicina i liječnik zamijenjene sintagmama dentalna medicina i doktor dentalne medicine. Pouzdanost i interna konzistencija DSLES-a slične su onima u MSLES-u (2).

Relevantne studije o studentskoj motivaciji, izvedbi i percepciji njihove okoline za učenje provodile su se na sveučilištima razvijenih zemalja Europe i Sjeverne Amerike (2, 14, 15, 16, 17, 18, 19). Studentska percepcija procijenjena DSLES-om u jednoj europskoj zemlji – u Hrvatskoj (nedavno se priključila Europskoj uniji nakon gospodarske transizije), uspoređena je na sjevernoj jezici. Te tri zemlje imaju različita zemljosna, društvena i kulturna obilježja, a različiti su i načini financiranja na sveučilištima uključenima u istraživanje (dva državnog i jedno privatno). Fakulteti su reprezentativni u sklopu nacionalnih standarda te su akreditirani u internacionalnim tijelima. Trenutačno nema razmjene nastavnika i studenata iz Hrvatske s ostalim dvjema zemljama, ali studenti iz Nepala slušaju kolegije u Indiji. Rezultati dobiveni za svaku zemlju mogu biti polazište za daljnja istraživanja i evaluaciju studentske percepcije o kurikulnim promjenama i inovacijama u postupcima učenja.

U načelu se među zemljama ne razlikuju značajno očekivane kompetencije koje studenti trebaju steći tijekom studi-
Generally, the competences expected to be acquired during studies do not differ significantly between the countries. However, there are differences in the respective educational systems, student/teacher ratios and the available educational resources (Table 1) (20, 21).

The aim of this study was to assess dental students’ perception of different learning environment in India, Nepal and Croatia.

| Tablica 1. Razlike među fakultetima na kojima je provedeno istraživanje |
|---------------------------------------------------------------|
| Table 1. The differences between Schools of Dental Medicine at which the research was conducted |
| CROATIA | INDIA | NEPAL |
| --- | --- | --- |
| Basic concept of the study | Lecture based study | Lecture based study | Lecture based study |
| Private or public institution | Public | Public | Private |
| Duration of the studies | 6 years (12th semester is internship) | 5 years (including 1 year of internship) | 5 and half (including 1 year of internship) |
| Number of undergraduate students | 645 | 974 | 256 |
| Number of basic and medicine subject teachers | 45 | 62 | 32 |
| Number of dental subject teachers | 147 | 89 | 24 |
| Teacher-to-student ratio – basic-medical subjects | 01:14.3 | 01:15.7 | 01:08 |
| Teacher-to-student ratio – dental subjects | 01:04.4 | 01:10.9 | 01:10.7 |
| Percentage of lectures (classical ex catedra lectures and seminars) | 2000/5100=39% | 1590/5200 = 30.57% | Lectures (basic and clinical) = 3195/5887 = 54.3% |
| Percentage of preclinical practicals | 1001/5100=19.63% | 1540/5200= 29.61% | 1040/5887 = 17.6% |
| Percentage of clinical practicals | 2099/5100=41.56% | 2070/5200=39.8% | 1652/5887 = 28.1% |
| Financial costs for students (do they pay for textbooks and material for preclinical and clinical practicals) | Students participate | Entirely by the students for textbooks and materials etc; tuition fees subsidized as they are government colleges | Entirely by the students |
| Tuition fees | | | |
| First contact with dental patient | 3rd year (restorative dentistry under supervision) | 3rd year (all clinical departments under supervision) | 3rd year (all clinical departments under supervision) |

Materijali i postupci

Ovo su istraživanje odobril etička povjerenstva Stomatološkog fakulteta Sveučilišta u Zagrebu, Istraživačkog instituta Stomatološkog fakulteta Surendera, Sri Ganganagar iz Indije te državnoga Stomatološkog fakulteta iz Nepala.

U Hrvatskoj su u istraživanju sudjelovali studenti triju stomatoloških fakulteta triju sveučilišta – zagrebačkoga, riječkoga i splitskoga. U svim tim visokoškolskim ustanovama studija slijedi isti kurikul. Istraživanje je također provedeno na Stomatološkom fakultetu i u Istraživačkom institutu Sri Ganganagar (School of Dental Medicine Surendera Dental College and Research Institute) u Indiji, te u državnom Stomatološkom fakultetu i u Sveučilišnoj bolnici Tribhuvan (People’s Dental College and Hospital Tribhuvan University) u Katmanduu u Nepalu.

Istraživanje je obavljeno tijekom akademskih godine 2016./17. E-pismo s poveznicom na upitnik DSLES-a poslano je svim studentima integrisanog preddiplomskog i diplomskog studija (od prve do posljednje godine). U njemu je opisano istraživanje i postupak davanja pristanka za sudjelovanje. Ukupno je odgovorilo 849 studenata i to 188 iz Hrvatske, 373 iz Indije i 288 iz Nepala. Samo su ispunjeni obrasci

Materials and methods

This study was approved by Ethical Committees at the School of Dental Medicine, Zagreb, Surendera Dental College & Research Institute, Sri Ganganagar, India, and People’s Dental College in Nepal.

In Croatia, students from three Schools of Dental Medicine at three Universities – Zagreb, Rijeka and Split, participated in the study. Dental studies at all three Schools that participated in this study follow the same curriculum. The research was also conducted at the School of Dental Medicine, Surendera Dental College & Research Institute, Sri Ganganagar, India and People’s Dental College and Hospital, Tribhuvan University, Kathmandu, Nepal.

The study was conducted during a period of academic year 2016/17. An email containing the link to Dental School Learning Environment Survey (DSLES) was sent to all dental undergraduate (first to final year) students. The research and consent procedures were described in the e-mail. A total of 849 dental students responded. Of this group, there were 188 responses from Croatia, 373 from India, and 288 from Nepal. Only completed forms were considered for the analysis and non-responders were excluded.
uzeti u obzir, a studenti koji nisu odgovorili nisu sudjelovali
ili u istraživanju.

Upitnik DSLES-a sastoji se od 55 pitanja, a za ispunja-
vanje je potrebno od 10 do 15 minuta. Pitanja su podijelje-
a na sedam skupina na temelju sedam kategorija studentske
percpcije okoline za učenje (kako je opisano u uvodu). Upit-
nik je preveden na hrvatski i vrednovan prije raspodjele. Dva-
deset studenata posljednje godine dalo je primjerje na neke
izraze u upitniku, pa su ga usklađivali tri nastavnika Stomato-
loškog fakulteta, uključujući i prodekanu za studente. Dopus-
štenu za korištenje upitnika DSLES-a u istraživanju dao je
njegov autor profesor David L. Henzi.

Odgovori na pitanja u upitniku davanu su prema Likert-
tovoj ljestvici od četiri stupnja: A = rijetko, B = katkad, C =
prije češće negoli ne i D = vrlo često. Također je ponuđen od-
govor E, ako studenti nisu imali dovoljno informacija da bi
ponudili odgovor. Neka pitanja postavljena su u afirmativ-
om obliku, a neka u negacijskom. Pri statističkoj obradi po-
dataka srednja vrijednost za svaki afirmativni odgovor izraču-
nata je tako da se odgovorima A, B, C i D redom pripisivalo
1, 2, i 3, odnosno 4 boda (2). Kod negacijski sociočenih pita-
nja bodovi su pripisani suprotno, tako da su pozitivne ocje-
ne dobile više bodova. Ako je odgovor bio E, pitanje nije bilo
uključeno u kalkulaciju srednje vrijednosti ocjene za pojedi-
nino pitanje.

Uz spomenutih 55 pitanja u upitnik DSLES-a dodana su
pitanja vezana za demografiju i samoprocjenu. Uključivala su
sljedeće izbore: (i) dodiplomski ili postdiplomski, (ii) godina
studija (1 – 6), (iii) samoprocjena uspjeha tijekom studija (iz-
vrsnio, dobro, loše), (iv) samoprocjena interesa za studij (izvr-
stan, dobar, loš), (v) procjena kvalitete obrazovanja (izvrsna,
dobra, loša), (vi) pad na ispitu tijekom studija (da/ne).

Statistička analiza obavljena je softverskim paketom SPSS
ver. 17 (IBM, Armonk, NY, SAD). Odgovori na pitanja u DSLES-u bili su ordinalne prirode, koristeći se gore navede-
nim sustavom ocjenjivanja. Za procjenu o tome je li distribu-
cijalna normalna u cijelom uzorku i za pojedine zemlje, korišten
je Kolmogorov-Smirnovljev test. Razlike među zemljama testirane su sa pomoću Kruskal-Wallisove neparametrijske
ANOVA-e jer su u istraživanje bile uključene tri zemlje, a ni-
je potvrđena normalna distribucija podataka. Post hoc ana-
liza provedena je Rankovim medijanskim testom. Odgovori
na dodatna pitanja (i-vi) analizirani su Mann-Whitneyjevi-
mim testom.

Praćenje izdvojenih skupina i kvalitativna analiza u ovoj
studiji nije odabrana zbog kulturoloških razlika među zemlja-
ma. S obzirom na to da je ovo bila pilot-studija, činio se pri-
kladnijim kvantitativni postupak.

Results

The response rate was low at 26.9%. The total number of
participants in Croatia was 188 (34 males and 154 females:
18.1% vs. 81.9%), in India 373 (161 males and 212 females:
43, 2% vs. 56.8%), and in Nepal 288 (79 males and 209 fe-
male: 27.4% vs. 72.6%). The gender response rates were in
Dental Students' View of Studying

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vora prema spolu odgovarao je omjeru spolova na fakultetima u Hrvatskoj, no u Indiji i Nepalu znatno se razlikovalo (p > 0,05) – u Indiji je bilo više studenata, a u Nepalu studentica.

Dob studenata u Hrvatskoj bila je između 18 i 24 godine (22,54 ± 1,69 god.) u Indiji od 23 do 28 (25,30 ± 0,96), a u Nepalu od 18 do 34 (22,88 ± 2,95).

Distribucija nije bila normalna (p < 0,05) za sve potkategorije DSLES-a za svaku zemlju i za sve zemlje kombinirano. Ni u složenim varijablama distribucija nije bila normalna, poput interakcije među studentima i emocionalnog ozračja u hrvatskoj skupini, svih varijabli u nepalskoj skupini te fleksibilnosti i interakcija među studentima u indijskoj skupini.

Razlike među zemljama nadene su za sve varijable DSLES-a koristeći se neparameetričkim Kruskal-Wallisovim testom s χ² vrijednostima od 52,55 do 210,73, df = 2, p < 0,01. Međijanski test također je pokazao razlike među zemljama za sve varijable s χ² vrijednostima od 46,35 do 171,54, df = 2 i p < 0,01. Ocjene (skorovi) su u tablici 2., a grafikon s obrnutim skorom je na slici 1.

Studenti u Hrvatskoj na različitim godinama studija ocjenjivali su sve kategorije DSLES-a. Ipak, irina interesa bila je značajno različita (Kruskal-Wallis test, p < 0,05). Razlike su bile značajnije između nižih (prva i druga) i viših godina studija, posebno kad je riječ o sestom.

U Indiji su razlike između godina studija bile značajne za sve kategorije, osim za fleksibilnost (χ² = 3,52, df = 2 p > 0,05). Ocjena za studentes interakcije povećavala se s višim godinama studija, a ocjena ostalih kategorija se smanjivala.

U Nepalu su ocjene svih kategorija bile znatno različite (p < 0,05), osim za studentes interakcije (χ² = 8,38, df = 2 p > 0,05). Vidljivo je bilo i smanjenje kategorija prema višim godinama za sve značajno različite varijable.

U Hrvatskoj i u Nepalu nije bilo statistički značajnih razlika u ocjenjivanju kategorija DSLES-a (p > 0,05) među grupama studenata koji su različito ocijenili svoj ukuo izuzemnog uspjeh. No nitko u Hrvatskoj nije ocijenio svoj ukupni uspjeh (2 = 17,91 – 63,07, df =1 p < 0,01). Studenti koji su ocijenili svoj uspjeh izvrsnim imali su najniže srednje vrijednosti za sve kategorije, osim za studentes interakcije koje su pokazale suprotnu distribuciju.

Razlike među zemljama nađene su za sve kategorije DSLES-a. Ipak, irina interesa bila je značajno različita (Kruskal-Wallis test, p < 0,05), osim za fleksibilnost. Razlike su bile značajnije između nižih (prva i druga) i viših godina studija, posebno kad je riječ o sestom.

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In Croatia and Nepal, there were no statistically significant differences (p>0,05) between the groups of students that differently assessed their overall success in grading DSLES subscales. However, no one in Croatia appraised their overall success as “bad” (Figure 2.) There was a significant difference in DSLES subscales for Indian students (χ² =17, 91 - 63,07, df=1 p<0,01) relating to the self-assessed study success. The

According to the student intake in the Schools in Croatia, but in India and Nepal gender response rates differed significantly (p>0,05) - in India there were more male respondents and in Nepal there were more female respondents.

The age of the students in Croatia ranged from 18 to 24 (22,54 ± 1,69 years) in India from 23 to 28 (25,30 ± 0,96), and in Nepal from 18 to 34 (22,88 ± 2,95).

The distribution was found not to be normal (p<0,05) for all DSLES subscales for all countries combined and for each country. When composite variables were tested they were similarly not normally distributed, such as: ‘Student to student interactions’ and ‘Emotional climate’ in the Croatia group; all variables in Nepal group and ‘Flexibility’ and ‘Student to student interactions’ in the India group.

The differences between the countries were found for all DSLES variables using the non-parametric Kruskal-Wallis test, with χ² values from 52.55 - 210.73, df=2 and p<0,01. The Median test also showed differences between the countries for all DSLES variables, χ² were from 46.35 - 171.54, df=2 and p<0,01. Scores are given in Table 2, and reverse score chart is represented in Figure 1.

Students in Croatia in different years graded all DSLES subscales. However, the ‘Breadth of interest’ was significantly different (Kruskal-Wallis test, p<0,05). The differences were more expressed between the lower years (1st and 2nd) and the higher years, especially 6th year.

In India, the differences between the study years were significant for all the subscales except ‘Flexibility’ (χ² =3, 52, df=2 p=0, 05). The grading for ‘Student-to-student interactions’ increased and grading for other subscales decreased as the study year progressed.

In Nepal, the grades were significantly different for all subscales (p<0,05) except for ‘Student-to-student interaction’ (χ² =8,38, df=2 p=0,05). There was a noticeable decrease in ranks towards higher years for all significantly different variables.

In Croatia and Nepal, there were no statistically significant differences (p>0,05) between the groups of students that differently assessed their overall success in grading DSLES subscales. However, no one in Croatia appraised their overall success as “bad” (Figure 2.) There was a significant difference in DSLES subscales for Indian students (χ² =17, 91 - 63,07, df=1 p<0,01) relating to the self-assessed study success. The

Tablica 2. Ocjene za sedam kategorija Ankete o okolišu za učenje na dentalnim fakultetima (engl. Dental School Learning Environment Survey – DSLES) upotrijebljene 2016., za procjenu okoline za učenje u Hrvatskoj, Indiji i Nepalu

Table 2. Scores for seven subscales of Dental School Learning Environment Survey (DSLES) used for the assessment of the learning environment in Croatia, India and Nepal, 2016.

| DSLES subscales          | Croatia (n=188) | India (n=373) | Nepal (n=88) |
|--------------------------|----------------|---------------|--------------|
|                           | Mean           | Std. Deviation| Mean         | Std. Deviation| Mean          | Std. Deviation|
| Flexibility              | 2.2902         | 0.49057       | 1.877        | 0.57785       | 2.0229        | 0.47005       |
| Student to student interactions | 2.8376     | 0.49002       | 2.5448       | 0.39974       | 2.8015        | 0.47389       |
| Emotional climate        | 3.0773         | 0.60728       | 2.222        | 0.55093       | 2.5024        | 0.53825       |
| Supportiveness           | 2.82           | 0.58792       | 2.0453       | 0.57245       | 2.1965        | 0.55636       |
| Meaningful experience    | 2.5723         | 0.59843       | 2.3199       | 0.44494       | 2.5989        | 0.4831        |
| Organization             | 2.7799         | 0.54023       | 2.1422       | 0.49174       | 2.582         | 0.45882       |
| Breadth of interest      | 2.5775         | 0.5149        | 2.2168       | 0.3685        | 2.325         | 0.45624       |
Kad je riječ o interesu za studij, distribucija je bila slična kao i za samoprocijenu uspjeha (slika 3.). U Hrvatskoj je statistički značajna razlika pronađena među dvjema kategorijama – interakcijom među studentima ($\chi^2 = 6,67 \text{ df } = 2 \ p < 0,05$) i emocionalnom ozračju ($\chi^2 = 3,95 \text{ df } = 1 \ p < 0,05$). Skupina studenata, koja je svoj interes za studij procijenila dobrim, dala je više srednje ocjene. U Indiji su razlike bile statistički

students who appraised their overall success as excellent had the lowest mean ranks, and students who considered their success as bad had the highest mean ranks for all variables except for variable II 'Student to student interaction' which showed the opposite distribution.

‘Interest in the studies’ was distributed similarly as the self-assessment data (Figure 3.) In Croatia, there was a statis-
Rasprava

Nesporno je da je akademsko ozračje pod snažnim utjecajem kulturno-okolnih okolnosti. Suvremeni globalni edukacijski trend poticanja studentiških i nastavničkih razmjena posebno je istaknut u Europi u programima koji podupiru slobodno kretanje studenata u Uniji (22). Studenti iz različitih zemalja

tical significance. In India, differences were statistically significant for all subscales except for 'Meaningful experience' (2, 00, 0, 05). While grades for subscale 'Meaningful experience' showed approximately equal distributions between the groups that appraised their experience as excellent, good or bad. The 'Student–to-student interactions' subscale showed a decrease in the mean rank value ranging from excellent to bad, and other subscales showed the opposite. In Nepal, most of the subscales showed statistically significant difference (p<0,01) except 'Flexibility' and 'Emotional climate' subscales (x^2 =2, 54 and 4, 55 df=2 p<0,05). For 'Flexibility' the distribution of mean ranks was uniform.

Students in Croatia rated their school only with grades excellent and good, while their colleagues in India and Nepal were more critical (Figure 4.). In Croatia, the ratings for all subscales showed statistically significant differences between groups of students who rated their school as either excellent or good (2, 00, 0, 01). The only exception was 'Breadth of interests' for which mean ranks did not differ much. For other subscales mean ranks were higher for group of students who marked their school as good. In India, 'Flexibility', 'Student–to-student interactions' and 'Meaningful experience' showed statistically significant differences (2, 01). Mean ranks for these subscales decreased together with students’ ranking of their school. In Nepal significant difference was found for 'Meaningful experience' and 'Organization' (2 =12, 00, 01). In both cases, same as in India, mean ranks decreased with students ranking of their school.

In Croatia, most of the students failed at least one exam (Figure 5.). In India a very small percentage failed at least one exam, and in Nepal there was slightly larger percentage than in India. In Croatia, these two groups did not grade DSLES scales significantly differently, except the subscale 'Organization' (U=1404 p<0,05 mean rank YES 91,06, mean rank NO 118). In India, all the subscales were graded significantly differently (U was between 288 and 1776, p<0,01), with mean ranks always larger for the group which did not fail any exam, except for Student to student interaction. In Nepal only two subscales were graded significantly different: 'Meaningful experience' and 'Organization' (2 =12, 00, 01). In both cases, same as in India, mean ranks decreased with students ranking of their school.

In both, mean ranks were higher in group which did not fail an exam. ‘This study was conducted using a questionnaire only, as a sort of a pilot study of the students’ perception of their learning environment. Therefore, it did not include focus groups enquiries or student interviews.

Discussion

It could not be argued that academic climate is strongly influenced by the cultural circumstances. Contemporary global educational trend of encouraging student and staff exchange is especially emphasized in Europe through programmes supporting the free movement of students across
smatraju da međunarodne razmjene mogu poboljšati njihovo znanje i samosvijest vezano uz kulturne posebnosti (23). Taj globalni trend dovodi studente iz različitih kulturnih pozadina u interakciju, te se ističe važnost vrjednovanja studen- ske potrebe i njihova percepcija okoline za učenje kako bi se ubrzala prilagodba u zemlji domaćini. Iako trenutačno nema programa razmjene između Hrvatske kao europske zemlje te azijskih država Indije i Nepala, usporedba studentskih staja- lišta o okolini za učenje može biti osnova za takav program u budućnosti.

Unatoč razlikama u obrazovnim sustavima između triju zemalja (tabllica 1.), stajališta studenata dentalne medicine o njihovu školovanju u Hrvatskoj, Indiji i Nepalu, čine se razmjerno konvergentnima, kako je uočeno i u dosadašnjim stu- dijama (24).

U rezultatima je postojala razlika u distribuciji srednjih ocjena prema stupnju (slika 1.). Najviše ocjene dodijeljene su za kategoriju interakcije među studentima, a najniže za fleksibilnost; iako je stupanj ocjene dobiven Kruskal-Walšovim testom (stupanj prema srednjoj ocjeni vrijednosti) koji pokazuje što studenti smatraju bitnim, one su različito distribuirane. U Hrvatskoj je najviši stupanj i ocjenu dobilo emocionalno označje, što ga čini najbolje ocijenjenom, ali i najvažnijom va- rijablom u ovaj analizir. Studenti u Indiji najveće su značenje dali širini interesa, ali ocijenili su je trećom najnižom ocje- nom. Studenti u Nepalu vrijedovali su organizaciju kao kate- goriju posebnog značenja, no takoder su ocijenili trećom najnižom ocjenom.

Premda je fleksibilnost ocijenjena najnižim ocjenama u svim trima zemljama, njezin utjecaj na mišljenje studenata dosta je snažan (ocjene prema srednjem rangu 4 ili više), što čini razmatranje fleksibilnosti vrijednim u analizi i razvoju budućeg kurikula.

Kurikuli se pretežito temelje na predavanjima i stogo su podijeljeni prema područjima pojedinih odjela/katedri. Ta- koder su podijeljeni u previše nastavnih planova i katalo- ga znanja. Nekoliko tema se i ponavlja. Na primjer, teme iz predmeta Dentalni materijali predaju se barem dva puta zato što su razmatrani fleksibilnosti vrijednim u analizi i razvoju budućeg kurikula. Zapravo su i izvješća ustanova American Dental Education Association Commission, show- ing that dental curricula contained redundant and irrelevant ma- terijale. In fact, the reports of Institute of Medicine of the Na- tional Academy of Sciences and American Dental Education Association Commission pokazala da dentalni kurikuli sa- državaju redundantni i irrelevantni sadržaj, ne odražavaju po- trebe suvremene dentalne prakse i nedostaje im učinkovita ugradnja bazičnih znanosti u kliničke (1, 25, 26).

Lanning i suradnici (15) su SWAT-om analizirali student- sku percepciju revidiranog kurikula na Virginia Commonwealth University School of Dentistry te su preporučili da rano kliničko iskustvo treba maksimalno povećati, da očekivanja od učenja moraju biti jasno postavljena, da opterećenje ko- legijskog utemeljeni na najvišem stupnju (slika 1.). U kurikulima triju zemalja iznašao je neki jasno vidljivi nedostaci u kontekstu navedenih preporuka. Studenti razmjerno rano steknu isku- stvo u kliničkom radu (treća godina studija), no očekivanja od učenja na klinici nisu u cijelosti usklađena s pretkliničkim EU (22). Students from different countries found that inter- national exchanges could enhance students’ knowledge and self-awareness related to cultural competence (23). This global trend brings students from different cultural backgrounds in interaction highlighting the importance of appreciating students’ needs and their perception of learning environment in order to facilitate their accommodation in a host country. Despite the current lack of exchange programme between Croatia as European country and India and Nepal as Asian countries, a comparison of the student perspective of learning environment could be a foundation for such future pro- gramme.

Despite the differences in the educational systems of the three countries (Table1.), dental students’ views regarding their education in Croatia, Nepal and India appear to be relatively convergent, as was noticed in previous studies (24).

There was a difference in average grade distribution compared to ranks (Figure 1). The highest grades were given for subscale ‘Student to student interaction’, and the lowest for ‘Flexibility’; even though the rank grades gathered from Kruskal Wallis tests (rank by mean rank grade), that reflect what students think is important, they are differently distribu- ted. In Croatia the highest rank impact and also grades are given to ‘Emotional climate’ which makes it the best graded and also the most important variable in this assessment. Stu- dents in India gave the highest importance to ‘Breadth of inter- est’, while graded it with the 3rd lowest grade. Students in Nepal value ‘Organization’ as a subscale of particular impor- tance, and also graded it with the third lowest grade.

Although ‘Flexibility’ was graded with lowest grades in all three countries, its impact on students’ opinion is quite high (Grades by mean rank being 4 or above) which makes it worth considering while analyzing and developing the fu- ture curriculum.

The curricula are largely lecture based with strictly divid- ed departmentalized areas. The curriculum is overly divid- ed into compartments of syllabuses and catalogues of knowl- edge. Also, there are several redundant topics. For example the topics from the subject ‘Dental materials’ are taught at least twice, because every dental clinical subject includes the topics about dental materials. In fact, the reports of Institu- te of Medicine of the National Academy of Sciences and American Dental Education Association Commission, show- ing that dental curricula contained redundant and irrelevant content, did not reflect contemporary dental practice, and were lacking effective integration between the basic and clinical sciences (1,25,26).

Using the SWAT instrument Lanning et al. (15) analyzed students’ perceptions of a revised curriculum at the Virgin- ia Commonwealth University School of Dentistry, and they recommended the following: the early patient care experi- ences should be maximized; learning expectations should be clearly set; course loads between semesters should be balanced; basic, social, and clinical sciences should be integrated (diverse faculty groups with various expertise come togeth- er to share information) (15). In the curricula of the three countries from our study, there are some clearly notable de- ficiencies in the context of the above mentioned recommen-
vježbama. Na primjer, pretkliničke vježbe iz restorativne
dental medicine in a notably different setting. For example,
preclinical courses of restorative dentistry are to a
considerable degree based on Black's principles, unlike the
clinical practice where adhesive cavities are performed. Also,
in Croatia, the students are not focused on clinical work and
dental courses because they are preoccupied with learning for
basic and medical exams- the courses that they have attended
the previous semester. Learning expectations are more or less
clearly set when it comes to theoretical knowledge, but when
it comes to actual clinical competences; the expectations for
a particular semester are not so clearly set i.e. stage that this
study was carried out. Diverse faculty groups rarely come to
together to share information regarding students and studying.
It is suggested that that working groups consisting of various
specialities, students and graduates come together and to
debate aspects of the curriculum, including more problem
based learning, instead of lecture based delivery. It could be
also accomplished through the structural, teacher supervised,
forums available on faculty e-learning platform (27).

Supportiveness was the subscale that showed an interesting
cross country difference. While this variable is very important
for Croatian and Indian students it has been graded with a better grade in Croatia than in India, suggesting that
although students find it to be equally important, their satisfaction with supportiveness is quite different. Perhaps this can
partly be explained by a more favorable teacher/student ratio
in Croatia, especially for dental subjects. In Nepal, that subscale was not considered as important, and was also not graded
well on the overall scale. This difference might be explained by
the fact the School in Nepal is a private institution. Also, the
different learning style preferred in Asian and European cul-
ture is one of the factors that could influence student perception
of their academic environment (28,29). Despite certain
heterogeneity of each studied population, there is traditional
approach to knowledge acquiring in Eastern and Western civ-
ilization. The lack of supportiveness and faculty concern for
the progress of undergraduate students has been recognized as
an important source of stress among students, along with ex-
amination anxiety, limited leisure time, and adaptation to the
clinical phase of their education (16,19,30,31). Furthermore,
supportiveness has been recognized and pointed out as one of
four most important characteristics of a good clinical teacher,
besides being competent and compassionate health care pro-
vider, effective supervisor and employing a varied and dynam-
istic approach to teaching (32).

Considering the stage of dental education (study year),
differing differences between the countries were noticed. Cro-
ati an students graded DSLES subscales with lower grades as
they advanced in their studies but there was no difference for
the 'Breath of interest' subscale. In the case of Indian stu-
dents, flexibility was graded uniformly low over the years.
Other subscales received lower grades with the advancement of
the studies, similarly as in Croatia, except Student-to-stu-
dent interactions. Therefore, encouraging student-to-student interaction could contribute to the improvement of their ed-
cucational process. In contrast to Indian students, their col-
dations. Students experience patient care relatively early (3rd
year of the study), but learning expectations at the clinic are
not entirely consistent with their preclinical practicals. For
example, preclinical courses of restorative dentistry are to a
considerable degree based on Black's principles, unlike the
clinical practice where adhesive cavities are performed. Also,
in Croatia, the students are not focused on clinical work and
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Bilo je nekoliko točaka povezanih sa studentskim samo-
procjenjenim uspjehom koje su se razlikovala među zemlja-
ma i mogu činiti obrazovni proces prikladnijim za pojedini
način učenja i za pojedinu studentsku populaciju. Nijedan
hrvatski student nije svoj ukupni uspjeh smatrao lošim, što je suprotno stajalištu studenata u Indiji i Nepalu koji su bili kritičniji. U Indiji su studenti koji su svoj uspjeh procijenili lošim dali više ocjene svim kategorijama osim interakcijama medu studentima. To bi moglo značiti da oni osjećaju kako drugi kolege koče njihov profesionalni razvoj u smislu da su kompetitivni i izbježavaju dijeljenje iskustava o učenju i studiju. Nadalje, hrvatski studenti koji procjenjuju svoj interes za studij izvrsnim dali su lošije ocjene interakcijama medu studentima i emocionalnom ozračju. Može se zaključiti da studenti koji su manje zainteresirani za kurikul, više vrijednuju društveni aspekt studija. Naprotiv, u Indiji su studenti koji su procijenili svoj interes za studij izvrsnim, ocijenili su i svoje interakcije s ostalim studentima vrlo vrijednim. U Nepalu je pronađena korelacija između ocjenjivanja kategorija DSLES-a visokim ocjenama i velikog interesa za studij, što je prilično različito negoli kod njihovih kolega u Indiji i Hrvatskoj. Također nema povezanosti između ocjene za fleksibilnost i emocionalno ozračje s njihovim interesom za studij. To se može pripisati i činjenici da je fakultet privatna, a ne javan.

Bilo je dosta neočekivano to što su hrvatski studenti koji su svoj fakultet ocijenili dobrom, a ne izvrsnom ocjenom, dali veće ocjene svim kategorijama DSLES-a. Naprotiv, studenti u Indiji i Nepalu koji su bolje ocijenili svoje fakultete obično su davali i više ocjene. Nadalje, očito je da u svim trima zemljama varijabla stičeno iskustvo može biti visoko povezana s percepcijom kvalitete fakulteta, uključujući čimbenike povezane s administracijom, postupke poučavanja i različite oblike potpore studentima (33). Buduće istraživanje koje bi procjenjivalo percepciju okoline za učenje sa stajališta nastavnika obilježila moglo bi se koristiti u interpretaciji ovih rezultata. Strategija praćenja obuhvaća bilježenje promjena u kurikulu i u studentskoj demografiji tijekom dugačkih pet godina i ponavljanje ankete za pet godina u svakoj zemlji.

Zaključno, nalazi iz ove studije pokazali su značajne razlike između studenata dentalne medicine prema ocjenama različitih kategorija DSLES-a u Hrvatskoj, Indiji i Nepalu. Uočeno je da, uz nedostatak fleksibilnosti, potpore i kuriku-la temeljenih na pređavanjima, postoji znatan prostor za poboljšanje okolina za učenje u svim trima akademskih okružjima.

Potpora
Ova je studija financijski potpomognuta od Sveučilišta u Zagrebu kroz projekt: „Evaluacija korijenskih mikrostruktura za vrijeme strojne i ručne instrumentacije korijenskih kanala”.

Sukob interesa
Nije bilo sukoba interesa.

leagues in Nepal value their interaction consistently in an equal manner over the course of their education.

There were some points connected to students’ self-estimated success which differed between different nations and could make the educational process more suited to different learning styles and different student populations. None of the Croatian students thought of their overall success was bad which is in great contrast to students from India and Nepal who seem to be more critical. In India, the students estimating their overall success as bad give higher grades to all subscales except ‘Student-to-student interaction’. This could mean that they feel that other colleagues may be impeding their educational development in a way that they are competitive and avoid sharing experiences regarding their learning and studies. Furthermore, Croatian students who appraise their interest in the studies as excellent gave lower grades to ‘Student-to-student interaction’ and ‘Emotional climate subscales’. It might be concluded that students who are less interested in the curriculum consider social aspects of their studies valuable. Conversely, in India, students who appraised their interest in the studies as excellent also graded their interaction with other students as very valuable. In Nepal, there was a correlation between high grading of DSLES subscales with the students’ high interest in the curriculum, which was quite different from with their counterparts in India and Croatia (Figure?). In addition, they do not relate their ‘Flexibility and Emotional climate’ to their interest in the studies. This might also be attributed to the fact that the College is private, and not public.

It was quite unexpected that students in Croatia, who rated their school as good and not excellent, gave higher grades to almost all subscales. In contrast, students in India and Nepal who ranked their schools better usually gave better grades. Moreover, it is obvious that variable ‘Meaningful experience’ in all three countries can be highly associated with the perception of the school’s quality including administration related factors, teaching methods and different kinds of student support.33 The future research measuring faculty and staff perceptions of the learning environment could be used in further interpretation of these results. The survey follow up strategy is recording the changes in the curriculum and students’ demographics during the next five years, and repeating the survey in a 5 year period in each country.

In conclusion, the findings of the current study showed a significant difference in dental students’ grading of various DSLES scales in Croatia, India and Nepal. It was observed that with lack of flexibility, supportiveness and lecture based curriculum, there is considerable amount of space for the improvement of learning environments in the three academic settings.

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Conflict of Interest
None declared
Abstract

Aim: The aim of this study was to assess dental students’ perception of different learning environments in India, Nepal and Croatia.

Methods: The study was conducted during the academic year 2016/17. A total of 869 dental students participated in the study. There were 188 respondents from Croatia, 373 from India, and 288 from Nepal. Non-responders were not followed up. The Dental Student Learning Environment Survey (DSLES) was used which consisted of 55 items subdivided into seven scales. The scales measured the following perceptions: Flexibility, ‘Student-to-Student Interactions, Emotional Climate, Supportiveness, Meaningful Experience, Organization and Breadth of Interest.’ Statistical analysis of the data utilised the Kruskal-Wallis ‘non-parametric ANOVA’ was also used to test the differences between the countries. A post hoc analysis was performed using Ranks tables and the Median test. Results: The response rate was 26.9%. Significant differences between the countries were found for all DSLES variables (Kruskal-Wallis, p<0.01). The Median test also showed significant differences between the countries for all DSLES variables (p<0.01). The scales with the highest mean values were ‘Student-to-student interactions’ in India and Nepal, and the ‘Emotional Climate’ in Croatia. Conclusions: Students in Croatia rated their school only with grades excellent and good, while their colleagues in India and Nepal were more critical. Despite the different settings in three countries, ‘Flexibility’ was identified as the area of weakness in all three educational systems.

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Key words: Curriculum; Dental Education, Graduate; Dental Students; Learning; Surveys and Questionnaires