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Utjecaj videoprezentacije na promjenu mišljenja albanskih studenata o bezbolnoj anesteziji kod djece

Role of “Video Assisted Lecture” on Changing Albanian Undergraduate Students’ Opinion Regarding Pain-free Dental Injections in Children

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Sažetak

Svrha: Željela se procijeniti koliko je predavanje uz videodemonstraciju utjecalo na promjenu mišljenja studenata dentalne medicine o injekcijama kad je riječ o djeci. **Metode:** U istraživanju su sudjelovali studenti pete godine (n: 62) Stomatološkog fakulteta Medicinskog fakulteta u Tirani, a provedeno je u dvije faze – u prvoj je održano teorijsko predavanje (faza 1) o bezbolnoj tehnici lokalne analgezije za djecu, nakon čega je slijedilo drugo predavanje koje je bilo vizualizirano snimkama stvarnih kliničkih slučajeva (faza 2). Mišljenje studenata evaluirano je na temelju kratke ankete obavljene prije predavanja, nakon teorijskog predavanja i nakon videodemonstracije. **Rezultati:** Prije istraživanja samo 47,9 % ispitanika vjerovalo da se djeci može dati (slažu se i potpuno se slažu) bezbolna lokalna anestezija, a nakon istraživanja postotak je porastao na 67,7 % ($p = 0,0001$). Polazna stajališta studenata značajno su se promijenila nakon videodemonstracije ($p = 0,0001$). No nema statistički značajne razlike između srednjih rezultata teorijskog predavanja (faza 1) i predavanja uz videodemonstraciju (faza 2). **Zaključci:** Ustanovljeno je da je teorijsko predavanje (faza 1) znatno utjecalo na promjenu mišljenja o bezbolnim dentalnim injekcijama za djecu, no pokazalo se da je i videodemonstracija (faza 2) razmjerno učinkovita u podupiranju promjene mišljenja studenata stomatologije.

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Ključne riječi

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Uvod

Kontrola boli i straha važna je u dentalnoj medicini. Jasnije je da ako liječnik ima pravilan pristup pacijentu, i djeca i odrasli osjećaju se sigurnije na stomatološkom stolcu. Injekcija lokalnog anestetika (LA) jedan je od najčešćih postupaka koji izazivaju anksioznost kod djece (1 – 8). Usavršavanje ubrizgavanja bezbolne injekcije anestetika ključ je za poboljšanje suradnje s djecom (9). Jedino tako mogu se ublažiti strah i tjeskoba (2, 10). Pitanje straha i anksioznosti može se staviti pod nadzor zahvaljujući inovativnom pristupu u edukaciji novih naraštaja doktora dentalne medicine. Nedavno su Kuscu i suradnici (4) istaknuli da se stomatološka edukacija također treba usredotočiti na mogućnost bezbolne lokalne analgezije.

Pri promicanju bezbolne lokalne analgezije važno je osigurati način ubrizgavanja anestetika koji ne uzrokuje bol i strah (11). Mnoge varijable koje bi mogle biti uključene u bolne injekcije LA-e testirane su da bi se pronašao način kako smanjiti nelagodu tijekom ubrizgavanja (12). Varijable

Introduction

Pain and anxiety control in dentistry are important. It is obvious that when the practitioner treats the tissue in a friendly manner, both children and adults will feel safer in the dental chair. A local anesthetic (LA) injection is one of the most anxiety provoking procedures in children (1-8). Mastering the skill in delivering the local anesthesia in a painless manner is the key to improving the cooperation of child patients (9). Only in this way we will be able to alleviate dental fear and anxiety (2, 10). However, this fear and anxiety issue can be taken under control with novel teaching approaches in the education of new generation of dentists. Recently, Kuscu et al (4) stated that dental education should also focus on the possibility of pain-free local analgesia. When promoting pain-free local analgesia, it is important to establish a method of local anesthetic injection that does not give rise to pain and anxiety (11). Many variables that might be involved in painful LA injections had been tested for possible ways of minimizing the discomfort perceived at the time of injection (12).

uključuju brzinu i pritisak ubrizgavanja, temperaturu otopine i nove naprave za ubrizgavanje (6). Nedavno je objavljeno da nakon dvominutne topikalne aplikacije anestetika, ključ za bezbolnu i ugodnu primjenu LA-e su sporije ubrizgavanje pod manjim pritiskom, u kombinaciji s učinkovitim tehnikama upravljanja ponašanjem (2, 4, 13).

Izobrazba je vrlo važna za poboljšanje teorijskih i kliničkih vještina studenata u primjeni LA-e. Iako stomatološki fakulteti imaju različite metode poučavanja i vježbanja LA-e, više se usredotočuju na učinkovitost anestezije negoli na bezbolnu aplikaciju. Način na koji se studenti educiraju utječe na njihovo mišljenje i stajališta.

Videotehnologija može se iskoristiti u obrazovne svrhe u izobrazbi pojedinaca kad je riječ o predmetima koji zahtijevaju teorijsko znanje u kombinaciji s praktičnim vještinama kao što su prva pomoć, endotrahealna intubacija i primjena LA-e u stomatološkoj terapiji (14). Videoprezentacijom daju se proceduralne informacije i omogućuje se modeliranje ciljane vještine. Poučavanje s pomoću videa ima mnoge prednosti jer studenti su bolje educirani o određenoj vještini (14). U dentalnoj medicini nastava s videoprezentacijom može studentima pomoći da prate ne samo tehnički aspekt postupka ubrizgavanja nego i ponašanje pacijenta. Obično se pretpostavlja da su injekcije bolne. S tim predrasudama, a bez suočavanja s bezbolnim ubrizgavanjem stomatološkog anestetika, studenti ne mogu niti zamisliti da je takvo što moguće postići i kod djece.

Svrha ovog pilot-istraživanja bila je procijeniti učinkovitost predavanja uz videoprezentaciju na promjenu mišljenja studenata dentalne medicine o bezbolnim injekcijama LA-e kod djece.

Materijali i metode

Protokol istraživanja odobrio je Stomatološki fakultet, Odjel za konzervativnu stomatologiju. Sljepoća sudionika osigurana je tako da nisu bili obavješteni o procesu evaluacije tijekom teorijskih i videopredavanja. Uključeno je bilo 95 zdravih dobrovoljaca u dobi od 22 do 23 godine – svi su bili studenti pete godine dentalne medicine na Stomatološkom fakultetu Sveučilišta u Tirani u Albaniji. Pozvani su bili svi studenti pete godine, no nisu se kompletno odazvali. Za istraživanje su izabrani studenti pete godine jer se s vježbama lokalne anestezije na pacijentima počinje na trećoj godini, a pedodoncija se sluša na petoj. Samo 62 studenta (52 Ž, 10 M) sudjelovala su u cijelom protokolu. Istraživanje je provedeno u dvije faze – teorijsko predavanje i videoprezentacija, a usredotočeni su bili na dvije glavne teme koje su nedavno definirali Kuscu i suradnici². Prva tema bila je učinkovito psihološko upravljanje, uključujući definiranje boli, tehnike upravljanja ponašanjem te kontrolu podražaja i percepcije. To obuhvaća konvencionalne metode (*tell-show-do*, kontrola glasa, neverbalna komunikacija, poticanje pozitivnog ponašanja, distrakcija, roditeljska odsutnost/prisutnost, modeliranje, sustavna desenzibilizacija, kognitivni pristupi, opuštanje) i suvremene (percipirana kontrola i samokontrola) tehnike bezbolne lokalne analgezije.

Variables included speed and pressure of injections, temperature of the solution and also novel technological injection devices (6). Recently, it has been reported that following a two minute topical anesthetic application, slow and low-pressure injections, together with effective behavior management techniques are the key toward pain-free and comfortable delivery of LA (2,4,13).

Dental education is very important for improving students' theoretical and clinical skills to perform LA. Although dental schools introduce different methods of teaching and practicing exercises for LA, most of the time they are more focused on the effectiveness of anesthesia rather than the pain-free administration. The way students are educated influences their opinion and attitudes.

Video technology can be used for educational purposes in the training of individuals on subjects which require theoretical knowledge together with practical skills such as first aid, tracheal intubations, and for LA administrations in dental treatments (14). Video modeling provides the demonstration of the procedural information and enables the modeling of the targeted skills. Video-assisted teaching has many benefits for the learners as it makes them more familiar with the nature of the skills (14). In the dental environment video-assisted teaching may help the students observe not only the technical aspect of the injection procedure but also the behavioral management of the patient. It is usually assumed that dental injections are painful. However, having this kind of prejudice and without observing a real pain-free dental injection, it is not possible for new learners to imagine pain-free dental injections in children.

The aim of this pilot study was to assess the effectiveness of video-assisted lecture in changing the opinions of dental students toward pain-free dental injections in children.

Material and Methods

The study protocol was approved by the Faculty of Dental Medicine, Conservative Dentistry Department. Participant blindness was ensured by not informing participants of the evaluation process during this LA theoretical and video lecture sessions. The participants included 95 healthy and volunteering young adults, aged 22-23 years who were fifth-year dental students at the University of Medicine of Tirana, Faculty of Dental Medicine, Albania. The invitation was extended to all the fifth-year dental students, however, not all were present for the session. The fifth-year students were chosen for the study because they are more trained as they start patient practicing local anesthesia in the third year and the course of pediatric dentistry is introduced in the fifth year of their studies. Only 62 of participating students (52 F, 10 M) had followed the full study protocol. The study was conducted in two stages: theoretical, and video stages focused on two main themes, named as recently defined by Kuscu et al². The first theme was *Efficient psychological management* including definition of pain, behavior management techniques and emphasizes on –stimuli control- perceived control. The present theme includes introduction of conventional (*Tell show-do*, Voice control, Non-verbal communication, Posi-

Druga tema bila je *učinkovita kontrola boli* koja je uključivala uspješnu primjenu bezbolnih tehnika LA-e i sljedećih obveznih mjera (2, 4):

- (i) topikalni anestetik (2 min.) – sprječavanje neugodnog okusa smotuljcima staničevine
- (ii) penetraciju 0,5 – 1 mm + usporeno ubrizgavanje
- (iii) bukalnu infiltraciju do mandibularne anestezije.

Prije predavanja studenti su u anketi izrazili svoje mišljenje o bezbolnim injekcijama LA-e kod djece, što je bila *početna točka* (slika 1.). Svima je savjetovano da odgovaraju na temelju vlastita mišljenja i koriste se pseudonimom/lozinkom kako bi se osigurala zaštita privatnosti. Nije bilo vremenskog ograničenja za dovršetak ankete, a za ispunjavanje trebale su od dvije do tri minute.

U teorijskoj fazi, nazvanoj 1. faza, predavanje o *bezbolnoj tehnici lokalne anestezije* u kojemu su objašnjeni i demonstrirani detalji tehnike, slušali su svi sudionici. Nakon toga sudionici su ponovno ispunili istu anketu koja je u analizi tretirana kao faza 1. U drugom predavanju, nazvanom druga faza,

ive reinforcement, Distraction, Parental absence/presence, Modeling, Systematic desensitization, Cognitive approaches, Relaxation) and contemporary (Perceived Control and Self Efficacy behavior management) techniques for pain-free local Analgesia.

The second was *Efficient pain management* which included the successful application of the pain-free LA techniques and the obligatory steps below (2,4).

- (i) Topical Anesthetics (2 min.) – prevention of unpleasant taste with cotton rolls
- (ii) 0.5-1mm penetration + Slow injection
- (iii) Buccal infiltration to Mandibular anesthesia

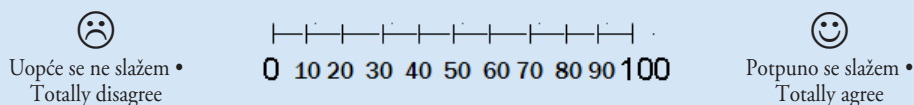
Prior to the lectures, students' opinions toward pain-free dental injections in children were collected by means of a survey which corresponds to the era "baseline" (Figure 1). Students were advised to respond based on their own opinions and to use an alias/nickname to ensure confidentiality. There was no time limit for completing the survey and it took approximately 2-3 minutes to respond.

Pseudonim/lozinka • Alias/Nickname: Spol (Ž/M) • Gender (F/M).....

Anketa za istraživanje • Survey for
PRISTUP I STAJALIŠTA STUDENATA PREMA DJETETU KAO PACIJENTU •
THE STUDENT'S APPROACH AND ATTITUDE TOWARD CHILD PATIENT

Molimo da označite svoje mišljenje o izjavama u nastavku; odgovori su povjerljivi i koristit će se samo u znanstvene svrhe. •
Please mark your sincere opinions about the statements below. Answers given will be confidential and will only be used for scientific purposes.

- 1) Bol je neizbježna tijekom lokalne anestezije djece. • Pain is inevitable during local anesthesia in children.
 - (1) Potpuno se slažem • Totally agree
 - (2) Slažem se • Agree
 - (3) Niti se slažem, niti se ne slažem • Neither agree nor disagree
 - (4) Ne slažem se • Disagree
 - (5) Uopće se ne slažem • Totally disagree
- 2) Topikalni anestetici ne bi se trebali davati zbog lošeg okusa, nego bi trebalo primijeniti smotuljke staničevine. • Topical anesthetic solutions, due to possible bad taste should not be sprayed in children, should better be applied by the help of a cotton pellet.
 - (1) Potpuno se slažem • Totally agree
 - (2) Slažem se • Agree
 - (3) Niti se slažem, niti se ne slažem • Neither agree nor disagree
 - (4) Ne slažem se • Disagree
 - (5) Uopće se ne slažem • Totally disagree
- 3) Lokalnu anesteziju treba aplicirati što je brže moguće ako dijete nije kooperativno. • Local anesthesia should be administered promptly and as quick as possible in uncooperative children.
 - (1) Potpuno se slažem • Totally agree
 - (2) Slažem se • Agree
 - (3) Niti se slažem, niti se ne slažem • Neither agree nor disagree
 - (4) Ne slažem se • Disagree
 - (5) Uopće se ne slažem • Totally disagree
- 4) Djeci se može bezbolno dati injekciju lokalne anestezije. • It is possible to administer pain-free dental injections in children.
Molimo označite na ljestvici • Please mark on the scale below.



Slika 1. Anketa
Figure 1 Survey

studentima je prikazana videoprezentacija dentalnih injekcija o kojima su slušali u prvoj fazi. Njihovo mišljenje i treći je put dobiveno na temelju iste ankete kao i nakon druge faze istraživanja, što se vodilo kao faza 2. Studenti nisu imali uvid u prije ispunjene ankete. Rečeno im je da se koriste istim pseudonimom u svim anketama.

Statistička analiza

Podatci su obrađeni statističkim softverom NCSS 2007 (Utah, SAD), te sljedećim analizama: analizom varijance, Newman-Keulsovim i Pearsonovim testom korelacije. P-vrijednost manja od 0,05 smatrana je statistički značajnom.

Rezultati

Analizirani su rezultati ispunjenih upitnika. Prije istraživanja samo je 47,9 % ispitanika vjerovalo u moguću bezbolnu lokalnu anesteziju za djecu, a nakon istraživanja postotak je porastao na 67,7 % ($p = 0,0001$) (tablica 1.).

U tablici 2. srednji su rezultati [Likertova ljestvica u rasponu od 1 (potpuno se slažem) do 5 (uopće se ne slažem)] prema kojima se vide ocjene studenata za tri tvrdnje prije istraživanja (početna točka) i nakon prve i druge faze. Četvrta izjava evaluirana je vizualnom analognom ljestvicom (0 – 100). Statistička razlika u rezultatima utvrđena je između faze 1 i faze 2 u prvoj izjavi *da je bol kod djece neizbježna tijekom ubrizgavanja lokalne anestezije* ($p = 0,0001$) (tablica 2.). Kad je riječ o odgovoru za izjavu 1, srednja vrijednost početnih rezultata bila je statistički različita od prosječnih rezultata za prvu i drugu fazu ($p = 0,0001$) (tablica 3.). No nije bilo

In the theoretical stage, named *Stage 1*, a lecture on the “Pain free Local Analgesia Technique” was given to all the participants where the details of the technique were explained and demonstrated. After the theoretical lecture, participants completed the same survey again which corresponds to the *era Stage 1*. In the second lecture, named *Stage 2*, students were shown video demonstrations of dental injections according to the theoretically lectured technique. Students’ opinions were collected for the third time by the same survey after the second stage of the study, corresponding to *era Stage 2*. The students were blind to the subsequent surveys completed after the first and the second stages. They were told to use the same nickname for all surveys.

Statistical Analysis

The data were processed with the NCSS 2007 Statistical software (Utah, USA) using the following analyses: Variance analysis, Newman Keuls, Pearson Correlation tests. A p -value less than 0.05 was considered to be statistically significant.

Results

The results of the applied questionnaires were analyzed. Before the study, only 47.9% of students believed in the possibility of pain-free local anesthesia in children, whereas after the study the percentage had risen to 67.7% ($p=0.0001$) (Table 1).

Table 2 represents the mean scores (Likert scale, ranging from 1 (totally agree) to 5 (totally disagree) where students scored their opinions regarding the three statements before the study (Baseline) and after *Stage 1* and *Stage 2*. The fourth statement has been evaluated with A visual analogue scale (0-100) A statistical difference in scores at baseline was shown between *Stage 1* and *Stage 2* in the first statement “Pain is inevitable during local anesthesia in children” ($p=0.0001$). (Table 2) Regarding answers to statement 1, mean baseline scores were found to be statistically different from the mean

Tablica 1. Distribucija odgovora za svaku fazu (podebljani odgovori su oni koji ciljaju na bezbolnu terapiju za djecu)
Table 1 Distribution of answers given in each stage (Bold answers are the expected ones targeting pain-free dentistry for children)

		Početna točka • Baseline		Faza 1 • Stage 1		Faza 2 • Stage 2	
		n	%	N	%	n	%
Izjava 1 • Statement 1	Potpuno se slažem • Totally agree	2	2,7	3	4,2	3	4,8
	Slažem se • Agree	21	28,8	15	20,8	7	11,3
	Niti se slažem, niti se ne slažem • Neither agree nor disagree	15	20,5	6	8,3	10	16,1
	Ne slažem se • Disagree	35	47,9	35	48,6	26	41,9
	Uopće se ne slažem • Totally disagree	0	0,0	13	18,1	16	25,8
Izjava 2 • Statement 2	Potpuno se slažem • Totally agree	14	19,2	32	44,4	34	54,8
	Slažem se • Agree	43	58,9	35	48,6	22	35,5
	Niti se slažem, niti se ne slažem • Neither agree nor disagree	9	12,3	1	1,4	1	1,6
	Ne slažem se • Disagree	7	9,6	4	5,6	5	8,1
	Uopće se ne slažem • Totally disagree	0	0,0	0	0,0	0	0,0
Izjava 3 • Statement 3	Totally agree	10	13,7	4	5,6	4	6,5
	Agree	24	32,9	12	16,7	9	14,5
	Neither agree nor disagree	10	13,7	7	9,7	4	6,5
	Disagree	21	28,8	34	47,2	33	53,2
	Totally disagree	8	11,0	15	20,8	12	19,4

Tablica 2. Odgovori u različitim fazama istraživanja
Table 2 Answers to the survey regarding different stages of the study

Izjave • Statements	Početa točka • Baseline	Faza 1 • Stage 1	Faza 2 • Stage 2	P
1 - Bol je kod djeteta neizbježna tijekom lokalne anestezije. • Pain is inevitable during local anesthesia in children.	3,14±0,93	3,56±1,14	3,73±1,12	0,0001
2 - Topikalni anestetici ne bi se trebali ubrizgavati zbog lošeg okusa, nego bi se trebali primijeniti smotuljci staničevine. • Topical anesthetic solutions, due to possible bad taste should not be sprayed in children, should better be applied by the help of a cotton pellet.	2,12±0,83	1,68±0,77	1,63±0,87	0,0001
3 - Lokalnu anesteziju treba aplicirati što je brže moguće ako je dijete nekooperativno. • Local anesthesia should be administered promptly and as quick as possible in uncooperative children.	2,9±1,27	3,61±1,16	3,65±1,15	0,0001
4 - Djeci se može bezbolno dati injekcija lokalne anestezije. • It is possible to administer pain-free dental injections in children.	60±2,05	70,24±2,03	80,06±1,71	0,0001

Tablica 3. Usporedba izjava na početku, u fazi 1 i fazi 2
Table 3 Comparison of Statements in Baseline, Stage 1 and Stage 2

Newman-Keulsov test • Newman Keuls test	Izjava 1 • Statement1	Izjava 2 • Statement2	Izjava 3 • Statement3	Izjava 4 • Statement4
Početa točka / faza 1 • Baseline / Stage 1	0,001	0,0001	0,0001	0,0001
Početa točka / faza 2 • Baseline / Stage 2	0,0001	0,0001	0,0001	0,0001
Faza 1 / faza 2 • Stage 1 / Stage 2	0,137	0,497	0,490	0,0001

statistički značajne razlike između srednjih vrijednosti za fazu 1 i fazu 2 ($p = 0,137$).

Kad je riječ o izjavi 2 da se *topikalni anestetici ne bi trebali ubrizgavati zbog lošeg okusa, nego primijeniti s pomoću smotuljka staničevine*, zabilježena je značajna promjena u mišljenju (u cijelosti se slažu) (tablica 1.). Statistički značajna razlika u rezultatima pokazala se između rezultata prvu i drugu fazu za izjavu 2 ($p = 0,0001$) (tablica 2.). U vezi s tim odgovorom, srednja vrijednost početnih rezultata statistički se značajno se razlikovala od srednjih vrijednosti za fazu prvu i drugu fazu ($p = 0,0001$) (tablica 3.). No nije bilo statistički značajne razlike između srednjih vrijednosti za fazu 1 i fazu 2 ($p = 0,497$) (tablica 3.).

Za izjavu 3 da *lokalnu anesteziju treba aplicirati što je brže moguće ako je dijete nekooperativno*, statistički značajne razlike ustanovljene su između rezultata za prvu i drugu fazu ($p = 0,0001$) (tablica 2.). Kad je riječ o odgovoru u vezi s izjavom 3, srednja vrijednost početnih rezultata bila je statistički značajno različita od srednjih vrijednosti za prvu i drugu fazu ($p = 0,0001$) (tablica 3.). No nije bilo statistički značajne razlike između srednjih vrijednosti za fazu 1 u fazu 2 ($p = 0,490$) (tablica 3.).

U vezi s izjavom 4, početni rezultati i rezultati za prvu i drugu fazu pokazali su statistički značajne razlike za sve usporedbe ($p = 0,0001$) (tablica 2., tablica 3.). Ta je izjava služila i kao kontrola za izjavu 1 ($r = 0,32$, $p = 0,006$).

Rasprava

Neka se istraživanja bave tehničkim aspektima primjene lokalne anestezije u aktualnim sustavima stomatološke edukacije (15 – 21). No ograničen je broj onih o edukaciji o bezbolnoj lokalnoj analgeziji (4, 22). Trenutačno je važno istaknuti razliku između pojmova *lokalna anestezija* i *lokalna*

scores of *Stage 1* and *Stage 2* ($p=0.0001$). (Table 3) However, there was no statistical difference between mean scores of *Stage 1* and *Stage 2* ($p=0.137$).

Regarding the statement 2 “Topical anesthetics should not be sprayed due to their bad taste, and should be applied by means of a cotton pellet” there was a significant change in opinions (in totally agree) (Table 1). A statistical difference in baseline scores was shown between *Stage 1* and *Stage 2* scores in statement 2 ($p=0.0001$) (Table 2). Regarding the answers to statement 2, mean baseline scores were found to be statistically different from mean scores of *Stage 1* and *Stage 2* ($p=0.0001$) (Table 3). However, there was no statistical difference between mean scores of *Stage 1* and *Stage 2* ($p=0.497$) (Table 3).

For statement 3, a statistical difference in baseline scores was shown between *Stage 1* and *Stage 2* scores “Local anesthesia should be administered promptly and as quick as possible in uncooperative children” ($p=0.0001$) (Table 2). Regarding the answers to statement 3, mean baseline scores were found to be statistically different from mean scores of *Stage 1* and *Stage 2* ($p=0.0001$) (Table 3). However, there was no statistical difference between mean scores of *Stage 1* and *Stage 2* ($p=0.490$) (Table 3).

Regarding the statement 4, baseline scores and *Stage 1* and *Stage 2* scores represent statistical differences for all comparisons ($p=0,0001$) (Table 2) (Table 3). This statement acted in concordance as a control for statement 1 ($r=0.32$, $p=0,006$).

Discussion

There are studies interfering with the administration and receipt of a local anesthetic injection in current dental educational systems (15-21). However, there is a limited number of studies regarding dental education on serving pain-free local analgesia (4, 22). At this point, it is important to highlight

analgezija, pri čemu je ono što stomatolozi prakticiraju lokalna analgezija pri kojoj nema gubitka osjeta pritiska, nego samo boli. Prema Kuscu i suradnicima (2), taj fenomen potpuno je u skladu s našom filozofijom o *bezbolnoj* terapiji.

Albanija je mala europska zemlja u kojoj se stomatološka edukacija temelji na promjenama kurikuluma na fakultetima. Tijekom edukacije studenata o toj temi i o novim tehnikama, nastava u kojoj se primjenjuje videotehnologija mogla bi biti učinkovita didaktička metoda. Učenje uz videoprezentaciju često se primjenjuje i vrijedan je didaktički alat koji treba uzeti u obzir kada je riječ o poučavanju pojedinaca (14, 23 – 35).

Provedeno je nekoliko istraživanja o učinkovitosti metoda poučavanja uz videoprezentaciju. Uzorci su uključivali školske učitelje, medicinske sestre, zaposlenike, školsku djecu, studente medicine i dentalne medicine te autističnu djecu. Teme su uglavnom obuhvaćale prvu pomoć, osnovnu životnu potporu, hitnu pomoć, nefarmakološku kontrolu boli, kineziološku i psihološku problematiku, zdravstvene probleme školske djece, neurološku procjenu, tehnike splintiranja i oralnu zdravstvenu zaštitu djece. Svi autori izvijestili su o pozitivnim rezultatima nakon poučavanja s pomoću videotehnologije u usporedbi s tradicionalnim predavanjima i istaknuli su poboljšanje znanja i vještina sudionika (14, 24 – 35).

U ovom radu mišljenje o bezbolnoj lokalnoj analgeziji među studentima poboljšalo se nakon teorijskih predavanja i videoprezentacije (faza 1 i 2). U usporedbi s teorijskim predavanjem, rezultati su imali statistička ograničenja u prikazivanju učinkovitosti videoprezentacije. Videopredstavljanje (faza 2) poboljšalo je mišljenje studenata (ali ne statistički značajno) u odnosu na fazu 1, kao što se vidi u tablici 3. Rezultati jasno pokazuju da videopredstavljanje podupire i dodatno povećava uspjeh teorijskog predavanja.

U ranije provedenom istraživanju s istim izjavama, ali drukčijom metodologijom i procjenom mišljenja studenata o tehnici bezbolne lokalne analgezije za djecu, slične su rezultate dobili autori među studentima iz Turske (4). Mišljenje studenata o bezbolnim injekcijama procijenjeno je prije teorijskih, praktičnih i kliničkih edukacijskih aktivnosti i poslije njih. Srednje početne vrijednosti za moguće bezbolne injekcije u prije obavljenom istraživanju ($n: 116$, izjava 1 = 3,15 i izjava 4 = 61,5) bile su usporedive s ovim istraživanjem ($n: 62$, izjava 1 = 3,14 i izjava 4 = 60). No konačni rezultati prijašnjeg istraživanja za izjave 1 i 4 (3,62 i 79,6) mogli su se usporediti s rezultatima postignutima nakon faze 2 (3,73 i 8,06), a ne faze 1 (3,56 i 70,24). Zato se može zaključiti da je videoprezentacija u ovom istraživanju slično utjecala na promjenu mišljenja u odnosu prema prijašnjoj aktivnosti koja je uključivala praktične i kliničke faze, uz dodatno teorijsko predavanje praćeno videomaterijalom.

Iako videoprezentacija kao pomoćno sredstvo u stomatološkoj nastavi nije nova metoda, ovo istraživanje upućuje na potencijal koji ima u poučavanju jer omogućuje uštedu vremena i novca u usporedbi s tradicionalnom nastavom. Treba također napomenuti da je ovo istraživanje prvo u kojemu se analizira učinkovitost videoprezentacije na promjenu mišljenja jer su se dosadašnja bavila njezinim učinkom na znanje i vještinu (24 – 35).

differentiation of terms 'local anesthesia' and 'local analgesia': what dentists practice is local analgesia, in which there is no loss of pressure, but loss of pain. According to Kuscu et al (2) this phenomenon is entirely in line with our philosophy of 'pain-free' therapy.

Albania is a small European country where dental education is emerging based on curriculum changes in dental schools. While implementing education of graduate students regarding the present issue with new techniques, the use of video-assisted teaching might be an effective way of didactic teaching. Video-assisted education has been found to be widely used and is a valuable didactical mean that should be considered in teaching individuals (14,23-35).

Several studies had been conducted about the effectiveness of video-assisted teaching methods. The study samples included school teachers, nurses, employees, school children, university, medical, dental, nursing students and autistic children as well. The topics mainly covered first aid, basic life support, emergency care, non-pharmacological pain relief, kinesiology and psychological issues, health problems of school children, neurologic assessment, splinting techniques, and infant oral health care. All authors reported positive results on the effectiveness of video-assisted teaching methods compared to traditional lecture methods and demonstrated improvement in knowledge scores and skill levels of the participants (14,24-35).

In the present study opinions about pain-free local analgesia were improved among students after theoretical and video assisted lectures (*Stage 1* and *2*). Compared to theoretical lecture, findings had statistical limitations in representing the effectiveness of video assisted lecture. Video-assisted lecture (*Stage 2*) improved students' opinions (but not statistically significant) further beyond *Stage 1* as shown in Table 3. However, the results clearly reveal that the video assisted lecture supports well and increases the success of theoretical lecture.

In a previous study questioning the same statements, with a different methodology, and evaluating the opinions of dental students about pain-free local analgesia technique in children, similar findings were obtained from Turkish dental students (4). The opinions of dental students were evaluated on pain-free injection before and after the theoretical, practical, and clinical education activities. The mean baseline scores for the possibility of pain-free injections in the previous study ($n:116$, Statement 1=3,15 and Statement 4=61.5) were quite comparable with the present study ($n:62$, Statement 1=3,14 and Statement 4=60). However, final scores of the previous study for Statement 1 and 4 (3,62 and 79,6) were comparable with the scores obtained after the Stage 2 (3,73 and 8,06) not stage 1 (3,56 and 70,24). Therefore, it may be concluded that the video-assisted lecture in the present study created almost similar effectiveness regarding opinion change compared to the previous educational activity study which involved practical and clinical phases in addition to the video-assisted theoretical lecture.

While video demonstrations acting as an assisting tool for dental teaching is not new, the present study points out the novelty and importance of the potential direction that vid-

Kad je riječ o ograničenjima ovog istraživanja, veličina uzorka je ključno pitanje prema kojem se rezultati mogu razlikovati u većoj populaciji. U Albaniji samo studenti pete godine pohađaju predavanje o pedodontici i daju djeci injekcije. Istaknimo da je populacija ograničena na naš uzorak. Zato, kao što je navedeno, ova veličina uzorka odgovarat će liječenju većine nacionalnog stanovništva.

Zaključci

Iako je prva faza, tj. teorijsko predavanje, imala statistički znatan utjecaj na promjenu mišljenja o bezbolnim injekcijama za djecu, druga faza – videoprezentacija – također je bila razmjerno uspješna i podupirala je promjenu mišljenja studenata dentalne medicine.

Sukob interesa

Autori navode da nisu bili u sukobu interesa.

eo assisted teaching is being less expensive and time-saving than traditional teaching. It should also be mentioned that the present study is the first study to observe the effectiveness of video-assisted lectures in changing opinions, whereas previous studies evaluated its effect on knowledge and skill (24-35).

Regarding limitations of the present study, sample size holds the key issue where results might be different in a larger population. In Albania, only fifth-year students treat pediatric patients and practice dental injections in children. Regarding this issue, the class population is limited to our sample population. Therefore, as it is noted, the present sample size will treat most of the population of the nation.

Conclusions

While first stage – theoretical lecture was found to be significantly effective in changing the opinions regarding “Pain-free injections in children”, the second stage – the video-assisted lecture was found to be relatively effective. Also, it supports the change in the dental students’ opinion.

Conflict of interest

The authors declare no conflicts of interests.

Abstract

Aim: To evaluate the effectiveness of video assisted lecture in changing the opinions of dental students toward pain-free dental injections in children. **Methods:** The fifth-year students (n:62) of University of Medicine of Tirana, Faculty of Dental Medicine participated in the study. The study was conducted in two stages: first a Theoretical lecture (Stage 1), “Pain-free Local Analgesia Techniques in Children” was provided, and was followed by a second lecture supported by video recordings of real clinical cases (Stage 2). Students’ opinions were evaluated by means of a short survey administered before the lectures, after the theoretical lecture, and after the video assisted lecture. **Results:** Before the study, only 47.9% of students believed in the possibility (agree and definitely agree) of pain-free local anesthesia in children, whereas after the study, the percentage had risen to 67.7% (p=0.0001). Baseline opinions of students changed significantly after the video-assisted lecture (p=0.0001). However, there is no statistical difference between mean scores of theoretical lecture (Stage 1) and video-assisted lecture (Stage 2). **Conclusions:** Theoretical lecture (Stage 1) was found to be significantly effective in changing the opinions regarding “Pain-free dental injections in children,” however, a video based dental education (Stage 2) was found to be relatively effective in supporting the change in dental students’ opinion.

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Key words

Graduate Dental Education; Instructional Films and Videos; Injections; Dental Anesthesia; Local Anesthesia; Child

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