

**A systematic review: study on challenges faced by dental interns in the workforce:  
Suggestions for Pacific Nations**

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## **Abstract**

**Aim:** To identify challenges faced by dental interns in the workforce, and to suggest, Pacific Island Countries (PIC) on further research in this area. **Materials and Methods:** A comprehensive search of Medline, Embase, Scopus, and ProQuest databases, was conducted using relevant keywords. All studies published from January 1<sup>st</sup> 2000 to 31<sup>st</sup> January 2021, were taken into consideration. Removal of duplicates and screening the full – text articles using eligibility criteria, was used to finalize the number of articles. The significant findings and conclusions were extracted and grouped under themes. **Results:** A total of 16 studies met the inclusion criteria, involving dental interns, medical interns, postgraduate and undergraduate. Five themes were identified as the main challenges faced by dental interns in the workplace including: workplace bullying, handling medical emergencies, community placement, lack of interdisciplinary approach, and poor record keeping. **Conclusion:** There is a need for PIC to conduct research and surveys, to identify the challenges its dental interns may be facing. This will create an ideal foundation from which strategies and initiatives can be implemented and enforced in the dental internship program. Ensuring that oral health services are delivered efficiently and oral status of the Pacific is not compromised.

**Keywords:** Dental Interns, Challenges, Pacific, Internship, Dentistry, Oral Health

## **Introduction**

The most prevalent Non – communicable Disease (NCD), affecting almost 4 billion people worldwide is oral diseases <sup>1</sup>. General and oral health have been found to be integral and linked, and dentists aim to maintain and improve both of these, through their scope of training, experience, and education <sup>2</sup>. The World Health Organization (WHO) in 2015, acknowledged that the global dental workforce accounts to 1.5 million personnel, with 80% being dentists, and the remainder encompassing dental auxiliaries <sup>3</sup>. Such a huge labor force is needed to provide dental services, as oral diseases have a profound impact on economic development and people’s daily lives, with loss of millions of work and school hours around the world <sup>4</sup>.

The Pacific region is no exception to this growing issue, and the people of this area face oral health problems of varying extent <sup>5</sup>. This is because, industrialization and urbanization of Pacific Island nations, in particular those which lie on trade routes, has brought a transformation in lifestyle, which encompasses a diet high in refined sugar, resulting in deterioration in oral health <sup>6</sup>. At the Pacific Oral Health Summit (POHS) in 2001, regional oral health leaders were asked on what they perceived to be the major challenges they faced in the provision of oral healthcare; the factors identified were: equipment, finance, lack of management, and manpower <sup>7</sup>. A survey conducted by the Commonwealth Dental Association (CDA) <sup>8</sup> in 2007, highlighted the disparity in dentist to population ratio throughout the Pacific region. It was noted that, countries like Papua New Guinea (1: 283,527), Kiribati (1: 42,247) and Vanuatu (1: 34,812) were found to have the lowest dentist to population ratio in the world <sup>7,8</sup>. Furthermore, movement of dentists from public sector (government) to private sector is also a major reason for inadequate dental workforce. This was highlighted in the Fiji Islands Health System (FIHS) review <sup>9</sup>, which states that dentists are

attracted to private practice due to a bottleneck regarding promotion within the public system. Thus it could be said, that having an adequate dental workforce remains a major challenge for Pacific Island Countries (PICs).

It has been demonstrated that most students who chose a career in dentistry, were self-motivated. The self-motivating – factors included: ability and desire to help people, self-employment, better opportunities and prestige<sup>10</sup>. Despite the motivation and drive, it is normal for healthcare providers to encounter different challenges as they enter the workforce<sup>11,12</sup>. These challenges may arise as part of the shift from a student to a practitioner<sup>13</sup>. This is because, internship is a platform where students apply the skills they learnt in classroom setting into the real world<sup>14</sup>. In fact, students begin to recognize certain levels of future career challenges at an undergraduate level<sup>11</sup>. Therefore, it is critical in the field of dentistry for students to know the challenges related with their future career, as there is a rare chance that a dentist may change his/her career after entering the profession<sup>15,16</sup>. Based on this, it could be said that the internship year of dental graduates is very crucial, in ensuring their motivation and commitment to the profession. According to McManus and Feinstein<sup>17</sup>, a successful internship programme requires sufficient resources to structure and monitor the programme. Furthermore, it is crucial for the interns to feel in control of their decisions and have a sense of autonomy.

In general, PICs face a major challenge in having adequate dental workforce, and that internship program could become a key component in ensuring that dental graduates are retained in the public sector (government), and not move to private sector or change profession. The purpose of this narrative review is to identify challenges face by dental interns in the workforce, and to suggest, PIC's on further research in this area.

## **Materials and Methods**

### *Search Strategy and Information Sources*

This systematic review was performed in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)<sup>18</sup>. The research was done to find answer to the question “what are the challenges faced by dental interns in the workforce”. The research focused question was identified with the aid of the PICO format: (P) is for the Participants, (I) for the Intervention, (C) for the Comparison and (O) for the Outcome<sup>19</sup>. (P) was the studies that focused on dental interns, (I) was situations deemed difficult for dental interns to handle, (C) was situations that dental interns managed easily and (O) was the challenges faced by dental interns in the workforce. An electronic search was conducted in Medline, Embase, Scopus, and ProQuest databases. The keywords used included: (Dentist\* OR “Oral health”) AND (“Dental intern” OR “Dental student”), AND (“Dental Services” OR “Oral Health”) AND (Challeng\* OR Difficult\* OR Barrier). The focus of the search was all type of studies published between January 1<sup>st</sup> 2020 to January 31<sup>st</sup> 2021 in English language. This was done to include all studies relating to challenges faced by dental interns. In addition, there were lack of studies that focused entirely on the topic of interest. Inclusion criteria were all types of studies that focused on the challenges faced by dental interns in the workforce, and the studies between 2000 and 2020. Exclusion criteria were conference abstracts, case reports, unpublished data, and studies conducted prior to year of 2000.

### *Study selection*

All the study titles were entered to Endnote and duplicated studies were excluded when the titles of all the studies were scanned by two independent researchers. The abstracts of the remaining studies were reviewed and those did not meet the inclusion criteria were excluded. Finally, the full text of the manuscripts that met the study inclusion criteria were printed for future review. A total of 564 papers were retrieved, reduced to 378 following removal of duplicates. The abstracts were screened using the eligibility criteria, 59 were found to match the criteria. After screening the full-text articles, 43 were excluded, resulting in a total of 16 articles. These 16 articles were selected in the review; significant findings and conclusions were extracted and grouped, to formulate the themes made in this study (Figure 1).

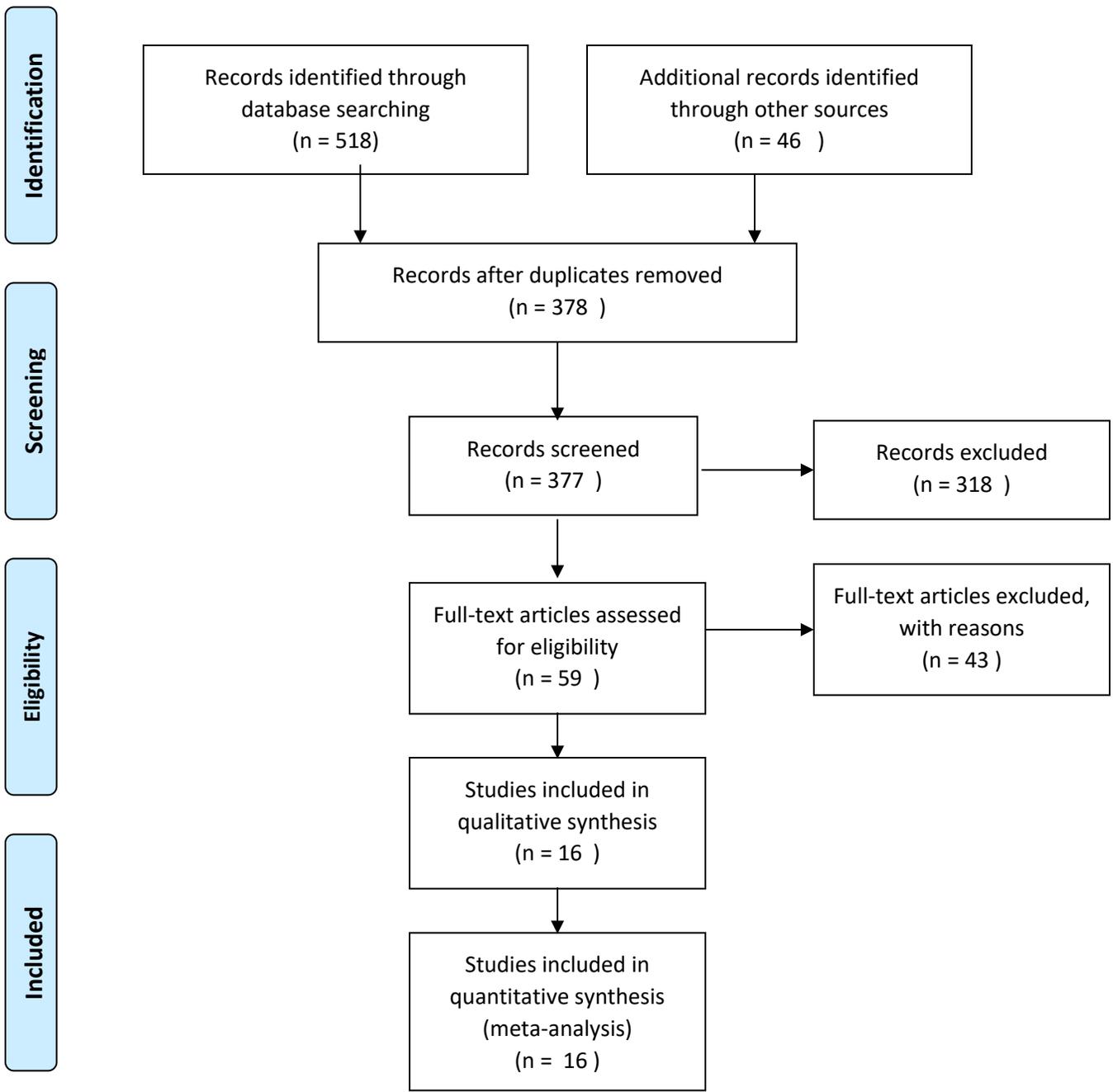


Figure 1: Flow Chart for the search process indicating numbers (*n*) of included and excluded studies

### *Data extraction*

For every study included in this research, the study characteristics as well as information regarding the participants, outcome, and results were extracted in Microsoft Excel. 1. The study information, included geographic location, time frame, research design, sample size, percentage of respondents among eligible participants, and number of institutions involved. 2. Characteristics of participants included the profession, gender, specialties, career level. 3. Outcomes include perceived barriers and challenges (Table 1). One reviewer completed data extraction for each study and a second reviewer checked the extracted data. A third reviewer then checked all extracted resource.

Table 1. Characteristics of the included articles

Author	Year	Setting	Specialty	Study Design	Sample Size	Results
Ullah et al [20]	2018	4 dental institutes of Karachi, Pakistan	Dental Interns	Cross – Sectional	125	<p>Negative deeds experienced by dental interns include:</p> <ul style="list-style-type: none"> <li>• “being exposed to an unmanageable workload” (11.2%)</li> <li>• “excessive monitoring of work” (8.8%)</li> <li>• “being ordered work below level of competence” (8.8%)</li> <li>• “practical jokes” (8.0%)</li> <li>• “spreading of gossip and rumors” (8%)</li> <li>• “being ignored or excluded” (8%),</li> <li>• “repeated reminders of your errors or mistakes” (7.2%).</li> </ul> <p>Only 14.5% dental interns reported against bullying, while the majority chose to remain silent. Reasons for not raising grievances included:</p> <ul style="list-style-type: none"> <li>• “complaining is no use” (28.8%)</li> <li>• being fearful of the consequences (22.0%)</li> <li>• dealing with the problem on their own (20.3%)</li> </ul>
Lahari et al [21]	2012	Andhra Pradesh, India	Postgraduate students	Cross – sectional	156	<p>Overall prevalence of perceived bullying was 79%. The most commonly encountered bullying act was:</p> <ul style="list-style-type: none"> <li>• “Pressure to Overwork” (69.9%)</li> <li>• “Threat to Professional status” (60.3%)</li> </ul> <p>Only 34% of the victims reported bullying to the respective authorities. Those that did not report bullying, outlined being</p>

						<ul style="list-style-type: none"> <li>• “afraid of consequences that may follow” 35.9%,</li> <li>• problem encountered was “not perceived to be sufficiently serious” 25%.</li> </ul>
Shenoy et al [22]	2016	Dental College in Bangalore, India	Dental Interns	Cross – Sectional	12	<p>Dental interns felt they had limited knowledge on how to handle cases in A&amp;E, and that they were not given first preference to attend to these cases, as medical interns were preferred over them.</p> <p>The dental interns also stated that they felt the duration of A&amp;E posting was too short because by the time they settled, their time was up. Furthermore, the students suggested that emergency postings should be introduced early in their curriculum to build their confidence in handling any mishaps or emergency situation.</p>
Sharma and Attar [23]	2012	Nitte university, Karnataka, India	Dental and Medical interns	Cross – Sectional	78 Dental interns 84 Medical interns	<p>85% of medical interns had administered BLS in real life situation, while none (0%) of the dental interns had performed BLS in real life, indicating lack of hands on experience amongst dental interns.</p> <p>85% of medical interns had received BLS training through workshops, while only 8% dental interns received such training, indicating poor exposure to BLS training amongst dental interns.</p>
Ahamed and Kumar [24]	2016	Saveetha Dental College, Saveetha University, Chennai, India	Undergraduate students and dental interns	Cross – Sectional	100	<p>Although majority of the dental students had good knowledge about management of medical emergencies in the dental clinic, only 40% of the participants were actually very confident in handling any medical emergency in the dental office.</p>

Elanchezhian et al [25]	2013	Various colleges in the southern part of India, India	Dental Interns	Questionnaire Survey  Cross – Sectional	182	96 percent % (175) reported that the Basic Life Support (BLS) course is mandatory for dentists 56% said they had trained in BLS. 34% said they had encountered some emergency situations in practice. Based on this study, the knowledge of medical emergencies among dental interns in southern India is superficial.
Mukherji et al [26]	2019	Dental College and Hospital in India	Dental Interns And postgraduate students	Cross – Sectional	100	Participants lacked knowledge about the administration of the drugs and use of necessary equipment. Participants with prior medical emergency training, also lacked clear understanding and confidence in managing life – threatening emergencies.  The study found deficiencies in the way the dentists are trained to deal with medical emergencies and identified a need for improvement.
Albelaihi et al [27]	2017	3 Dental Schools in Qassim, Saudi Arabia	Dental Interns and undergraduate students	Cross – Sectional	201	Most of the participants were lacking confidence in handling medical emergencies, despite majority of them inquiring about medical history before dental treatment.  Annual basic life support and emergency courses to be mandatory in dental curriculum and further hands on training is needed to update and enhance knowledge on medical emergencies.
Khanagar et al [28]	2020	6 Dental Colleges in Riyadh, Saudi Arabia	Dental Interns	Cross - Sectional	400	58% (232) of the participants were willing to work in rural areas while 42% (168) were not. The perceived barriers to work in rural areas were: <ul style="list-style-type: none"> <li>• unfavorable working condition 295 (73.80%)</li> <li>• lack of transportation facilities 293 (73.30%)</li> <li>• poor accommodation 282 (70.50%)</li> </ul>

						<ul style="list-style-type: none"> <li>• less scope for professional development 278 (69.50%)</li> <li>• lack of necessary infrastructure 268 (67%)</li> <li>• low standard of living 267 (66.80%)</li> <li>• less salary 255 (63.70%)</li> <li>• difficulty in communicating with illiterate 247 (61.80%),</li> <li>• human resources support 243 (60.80%)</li> <li>• less security 236 (59%)</li> </ul>
Sharma, Gupta and Rao [29]	2014	6 Dental Colleges of Haryana, India	Dental Interns	Cross – Sectional	504	<p>282 (55.95%) of the respondents expressed willingness to work in rural areas, while 222 (44.05%) respondents were not willing to work in rural areas after completion of internship.</p> <p>Reasons highlighted for not going to rural areas were:</p> <ul style="list-style-type: none"> <li>• preference for post-graduation studies 100 (45.05%)</li> <li>• difficult working conditions 51 (22.97%)</li> <li>• poor living conditions 77 (34.68%)</li> <li>• isolation and lack of recreation 66 (29.72%)</li> <li>• no scope for professional future 97 (43.69%)</li> </ul>
Shinde et al [30]	2018	4 Dental Colleges in Pune, India	Dental Interns	Cross Sectional	40	<p>Some of the respondents stated that:</p> <ul style="list-style-type: none"> <li>• Infrastructure of the mobile dental clinic and the satellite centers should be improved.</li> <li>• Timely maintenance of the chair and equipment in these centers was necessary when things are not working Transportation was also an issue, and they had to travel in their own vehicle or through public transport to reach satellite centers.</li> </ul>

						None of the interns showed any inclination to choose post-graduation in Public Health Dentistry (PBH) for serving the community.
Thanveer et al [31]	2013	K.M. Shah Dental College and Hospital, Vadodara India	Dental Interns	Cross – Sectional	54	Common dislikes at the peripheral center: <ul style="list-style-type: none"> <li>• Difficulties using the computerized system for recording Recording/ assessing clinical notes – 5</li> <li>• Patients failing to attend appointments – 8</li> <li>• Timetabling issues, including travelling – 20</li> <li>• Access to certain specialized equipment – 45</li> <li>• Being unable to access patients requiring specific/ desired items of treatment eg crowns and RPD</li> </ul>
Shigli et al [32]	2015	2 dental colleges in Sangli, India	Dental Interns	Cross – Sectional	117	93 interns (79.5%) stated that they lacked training in interdisciplinary approach 113 interns (96.6%) reported that the curriculum should be redesigned to include training for interdisciplinary dentistry Only 46 (39%) interns displayed confidence in comprehensively treating a patient.
Mugilan et al, [33]	2018	A south Indian dental college, India	Dental Interns	Cross – Sectional	100	92 interns (92%) stated that they lacked training in an interdisciplinary approach 84 interns (84%) reported that the curriculum should be created, such that it includes training for an interdisciplinary approach to dentistry. 37 interns (37%) reported that they lacked confidence of treating the patient as a whole
Faisal et al [34]	2017	Karachi Medical and Dental College Pakistan	Dental records filled by dental interns.	Cross – Sectional Study	300	The most frequently missing readings were: <ul style="list-style-type: none"> <li>• Intern signature (22.3%)</li> <li>• department name (14.3%)</li> <li>• supervisor signature (11.7%)</li> <li>• history of presenting complain (11.3%)</li> </ul>

						<p>The male to female comparison showed that 25 % of the males missed the signatures as compared to females which were 19 % out of 64 recordings.</p> <p>The second most commonly missed records was:</p> <ul style="list-style-type: none"> <li>• Name of department in which the patient was referred for procedure.</li> <li>• Out of 300 records, 43 (14.3%) were identified which lacked the department name.</li> </ul> <p>The gender cross tabulation showed that 19 % of the males omitted the department name as compared to females who were 10 % of the 43 recordings. Male interns were found to be significantly (P-value=0.02) more reluctant in missing the department name as compare to their female colleague (mean difference with 95% C. I = 0.433; -0.84, -0.05).</p>
Behura et al [35]	2020	Private dental college in Bhubaneswar, Odisha, India	Dental Interns and undergraduate students	Cross – Sectional Study	242 respondents:  Undergraduate students - 165  Interns - 83	<p>Results show:</p> <ul style="list-style-type: none"> <li>• 50.8% believed that they did not have adequate knowledge regarding the forensic odontology and its constituents.</li> <li>• 57% had attended CDE and workshops on the subject</li> <li>• 76% believed they needed to know forensic odontology in detail to run an authentic clinical practice</li> <li>• 73.1% were aware that dentists were legally bound to maintain records in India, which could help in protection against any commercial, legal or medico legal litigation.</li> </ul> <p>Perceived barriers to good dental records were:</p>

						<ul style="list-style-type: none"><li>• Lack of time</li><li>• Lack of experience</li><li>• Lack of training programme/CDE (Continuing Dental Education)</li><li>• Increased Work load</li></ul>
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## **Results**

### *Description of Study*

Sixteen cross – sectional involving: 1695 dental Interns, 84 medical interns, 156 postgraduate students, 165 undergraduate students, and 401 dental interns/students. Twelves studies (75%) from India, 2 studies (12.5%) from Pakistan, and the remainder (12.5%) from Saudi Arabia. All studies utilized self-reported information on difficulties or challenges faced by new graduating dentists in the workforce.

Five themes were established from the analysis: workplace bullying, handling medical emergencies, community placement, lack of interdisciplinary approach and poor record keeping, which will be discussed further.

### *Theme 1: Workplace bullying*

Workplace bullying has been investigated in two studies. Ullah et al <sup>20</sup> and Lahari et al <sup>21</sup>, established from their study, that workplace bullying was a common occurrence at the workplace. The most commonly encountered bullying act on dental interns and postgraduate students included: pressure to overwork, excessive monitoring at work, being ignored or excluded, being a subject of jokes and gossip, and repeated reminders of errors and mistakes. Furthermore, majority of the victims chose to remain silent, and only less than half of the victims every reported bullying to their respective authorities. Reasons for not reporting bullying mainly included: the notion that complaining is of no use, being fearful of the consequences, or dealing with the problem on their own. According to Ullah et al <sup>20</sup>, since majority of the dental interns did not report bullying, and are apprehensive towards complaining, there may be a lack of, or loose enactment of anti – bullying policies within the institutions resulting in poor accountability of perpetrators.

### *Handling Medical Emergencies*

Handling medical emergencies was highlighted in 6 studies. Shenoy et al <sup>22</sup> and Sharma and Attar <sup>23</sup>, found from their study, that dental interns lacked training and hands on experience in Basic Life Support (BLS), when compared to medical interns. Ahamed and Kumar <sup>24</sup>, Elanchezhiyan et al <sup>25</sup>, Mukherji et al <sup>26</sup>, Albelaihi et al <sup>27</sup>, found that dental interns and students, in general, were not completely aware of and are not being trained in effective management of all emergency situations.

### *Community Placement*

Community placement was investigated in 4 studies. Khanagar et al <sup>28</sup>, Sharma, Gupta and Rao <sup>29</sup>, Shinde et al <sup>30</sup>, Thanveer et al <sup>31</sup>, established in their study that dental intern's had faced challenges in their rural placements. The perceived barriers to working in rural areas as expressed by the dental interns were mainly: unfavorable working condition, poor accommodation, lack of necessary infrastructure, lack of transportation facilities, isolation and lack of recreation, no scope for professional future, and being unable to provide specialized services. Furthermore, Khanagar et al <sup>28</sup>, Sharma, Gupta and Rao <sup>29</sup> found that almost half of the dental interns did not want to work in rural areas after completion of internship. Shinde et al <sup>30</sup> further elaborates that, none of the 40 dental interns in their study, showed any inclination to choose post-graduation in Public Health Dentistry (PBH) for serving the community.

### *Lack of interdisciplinary approach*

Lack of interdisciplinary approach was highlighted in 2 studies. Shigli et al <sup>32</sup> and Mugilan et al, <sup>33</sup>, established in their study that majority of the dental interns identified that that they lacked training in interdisciplinary approach, and that the curriculum should be redesigned, such that it

includes training for an interdisciplinary approach to dentistry. It was also noted that many dental interns did not have the confidence in comprehensively treating a patient.

### *Poor Record Keeping*

Poor record keeping was investigated in 2 studies. Faisal et al <sup>34</sup>, found in their study that dental records filled by dental interns were incomplete. The most frequently missed information was: intern signature, department name, supervisor signature, and history of presenting complain. It was also highlighted that male interns were more likely to miss out information than female interns. Behura et al <sup>35</sup>, established from their study that dental interns and students believed in the importance of dental records for running an authentic clinical practice, as well as protection against any commercial, legal or medico legal litigation. However, the perceived barriers to good dental record keeping in the study were: lack of time, lack of experience, lack of training programme/CDE, increased work load.

## **Discussion**

This systematic review demonstrated the challenges faced by dental interns in the workforce. It was also found that the challenges experienced by dental interns was highlighted across the studies and could be attributed to 5 factors which are: workplace bullying, handling medical emergencies, community placement, lack of interdisciplinary approach, and poor record keeping.

Bullying can be described as a complex violent, anti-social conduct marked by repetitive harassment of a weaker victim without any provocation <sup>36</sup>. “Workplace bullying” (WPB) means offending, harassing, socially excluding someone, or negatively affecting daily duties of victims <sup>20</sup>. Some examples of WPB include direct attacks such as cursing, mocking, hitting, or indirect ones such as spreading rumors of the victim <sup>37</sup>. WPB is becoming a common occurrence, and the health care sector is no exception to this <sup>38</sup>. In the case of doctors in training, some bullying

behaviors may be done with the intention to improve trainee's performance, however, the impact on the trainee may be the opposite<sup>39</sup>. A junior who feels undermined and shamed by a senior, will hesitate to ask questions or seek support from him or her. Furthermore, unhelpful criticism, sarcastic comments and embarrassment in front of colleagues will cause even the strongest trainee to lose confidence in him or herself<sup>39</sup>. Another major reason for WPB in the hospital has been attributed to senior doctors venting out their disaffection of workload and pressure, onto junior colleagues, leading to a climate of anger and disappointment<sup>39,40</sup>. Some forms of bullying in the medical field are more insidious, such as threats over references and support letters, because progress in the medical sector still works on a system of patronage and word of mouth<sup>41</sup>. Having said that, doctors in training, similar to other employees, have the right to be treated with respect, dignity and consideration. They should not be subjected to behaviors that undermine their self – confidence and professional self – esteem<sup>21</sup>. This is because, WPB on an individual level has been linked with health care workers having: lower levels of job satisfaction, high levels of anxiety and depression, increase in sickness/absenteeism or desire to leave work<sup>42-44</sup>. Organizational consequences of WPB can manifest in a hostile or toxic work environment, which is closely linked to compromised quality of patient safety and care. It also inhibits teamwork, disrupts behavior, obstructs communication, and has the potential to increase medical errors by affecting the quality of healthcare organization<sup>45,46</sup>. Overall, WPB of any sort must be condemned, interns as well as other staff must be given respect and a positive environment to work in. This is because, victims of bullying may themselves go on to harass others when they become seniors, thus continuing the vicious cycle of abuse<sup>21</sup>. It is believed that medical students not only learn medicine, but also behavior patterns of their seniors and mentors, widely regarded as the “hidden curriculum of

medical education”<sup>47</sup>. Thus, it could be said that WPB is a major challenge that dental interns face upon joining an institution, and policies and initiatives must be created that condemns WPB.

Handling medical emergencies is another major challenge faced by dental interns that requires attention. This is because many situations in the dental office can incite medical emergencies<sup>27</sup>.

The most common medical emergencies encountered in the dental chair include: postural hypotension, bronchospasm, swallowed foreign bodies, anaphylaxis, syncope, hypoglycemia, seizures, cardiac arrest and angina pectoris<sup>24</sup>. In general, these emergencies can be life – threatening and there have been instances of patients dying due to medical emergencies in the dental setting<sup>48</sup>. Effective management of medical emergencies in the dental office is ultimately the dentists’ responsibility, via emergency management procedures aimed at reducing mortality and morbidity when the need arises<sup>24, 27</sup>. Lack of training and inability to manage medical emergencies can lead to serious consequences and legal action<sup>49</sup>. According to Shenoy et al<sup>22</sup>, dental students suggested that emergency postings should be introduced early in their curriculum to build their confidence in handling any mishaps or emergency situation. Furthermore, Shenoy et al<sup>22</sup>, Sharma and Attar<sup>23</sup>, Ahamed and Kumar<sup>24</sup>, Elanchezhian et al<sup>25</sup>, Mukherji et al<sup>26</sup>, Albelaihi et al<sup>27</sup>, express deficiencies in the current way the dentists are trained to deal with medical emergencies, and that there is a need for incorporating structured training of BLS into the school dental curriculum, together with additional periodical assessment and enhancement training for dental professionals regarding medical emergencies. Mukherji et al<sup>26</sup>, further elaborates that, theoretical knowledge with demonstrations but without practice is insufficient to ensure competence in handling medical emergencies. Frequent training with the use of simulated scenarios in the environment where the emergency response will be delivered is recommended to achieve better results. Overall, it could be said that managing medical emergencies is a huge

challenge for dental interns, and strategies must be in place to make dental interns competent in management of medical emergencies to improve patient care.

Another major challenge dental intern's face, is during their community placement. Introduction of compulsory rural attachment in the internship program of dental interns, has been done, since most dentists usually practice in the cities and treat the affluent parts of the urban population, thus it is often difficult for the rural population to get access to emergency and basic oral health care.<sup>30</sup> This geographical unequal distribution of the dentist – population ratio, significantly influences the accessibility to oral health care services, and presents a challenging problem in the planning and delivery of quality dental care in these areas<sup>29</sup>. Rural attachments are referred to as “outreach” or “outplacement” programs, where mobile dental clinics as well as portable dental equipment are used to provide dental services in the absence of traditional set – ups<sup>30</sup>. According to Yoder<sup>50</sup>, community service has the capability to provide dental students with knowledge and motivation to engage into, and promote public health by understanding and appreciating the concepts, characteristics, and objectives of community service and its impact on the public. However, other important job attributes such as: better income, good living conditions, utilization of skills, education opportunities for children, safe working and living environment, tilt the balance in favor of urban location<sup>51</sup>. Overall, it could be said that rural settings pose significant challenges, and dental interns could feel intimidated and demotivated when faced with such challenges. Thus, it is important to mitigate these challenges, so that dental interns feel at ease and possibly take up rural postings in future. For instance, K.M. Shah Dental College is implementing strategies at its peripheral centers in order to increase the efficiency of outreach programmers. One such strategy is the expansion of peripheral centers in terms of infrastructure, and providing dental students with the most recent technology for patient management<sup>31</sup>.

Utilizing interdisciplinary approach is another significant challenge encountered by dental interns. Interdisciplinary dentistry is manifested by the application of methods, concepts, and perspectives that go beyond the boundaries of individual specialty<sup>52</sup>, to deliver the highest level of dental care to every patient<sup>53</sup>. In countries such as India, Bachelor of Dental Surgery (BDS) graduates are posted in several departments for short periods of time to obtain clinical abilities relating to the particular department. As a result, they are poorly prepared to carry out comprehensive treatment planning or interdisciplinary approach<sup>54, 55</sup>. Shigli et al<sup>32</sup>, elaborated that the current scenario involves dental interns providing treatment, is based on knowledge that is compartmentalized, and there is a need to develop an internship program, based on the concept of interdisciplinary approach.

Lastly, poor record keeping is another issue displayed by dental interns, which needs attention. This is because, clinical records play a vital role in the process dental care delivery, as they are essential for the diagnosis, planning and correction sequencing of treatment<sup>34</sup>. Dental records comprise of clinical notes, plaster models, radiographs, treatment done including serial numbers of prosthesis<sup>56</sup>. These records also serve other purposes such as administrative, research, quality assurance, education, and even used as evidence in legal proceedings. Therefore, producing detailed accurate patient records, maintaining, storing and retrieving them should be an integral part of practice and this habit should be ingrained during the professional training of dental students<sup>35</sup>. Faisal et al<sup>34</sup>, further elaborates that, organizing training sessions on a regular basis that informs students about the benefits of accurate and detailed records, as well as problems that might arise when records are substandard, would greatly help in inculcating the trend of efficient and qualitative record keeping in the times to come.

### *Application for Pacific*

Based on these findings, it can be said that workplace bullying, handling medical emergencies, community placement, lack of interdisciplinary approach, and poor record keeping, are major challenges faced by dental interns. Acquisition of adequate dental workforce remains a major challenge for PIC, and movement of dental workers from government sector (public) to private or other profession, further compounds this problem. A well designed and executed internship program could be a key component in ensuring dental graduates are retained in the profession and public sector. PIC must conduct surveys to identify the challenges its dental interns are facing, and create an ideal foundation from which strategies and initiatives can be implemented and enforced in the dental internship program. The ultimate goal is to ensure dental graduates are retained in the profession and public sector. Further ensuring oral health services are delivered efficiently and oral status of the Pacific is not compromised.

### **Limitations**

Several limitations of this study need to be mentioned. Firstly, this systemic review, looked at studies conducted in countries outside the Pacific, since no data or studies were available for PIC. As a result, the conclusions drawn from these studies may not necessarily be applicable to PICs. Furthermore, the general limitations of systemic review can be applied to this study as well. Which includes: subjective biasness in study selection and analysis, and possibility of misleading conclusions being drawn. Therefore, there is a need for PICs to conduct research, and to accurately determine the challenges faced by its dental interns in the workforce.

## **Conclusion**

Challenges faced by dental interns in the workplace includes: workplace bullying, handling medical emergencies, community placement, lack of interdisciplinary approach, and poor record keeping. The aim of this literature review was to highlight this grey area, of new graduates leaving the profession or moving over to private sector, which is very prevalent in PIC. There is a need for PIC to conduct research and surveys, to identify the challenges its dental interns are facing. This will create an ideal foundation from which strategies and initiatives can be implemented and enforced in the dental internship program. The ultimate goal is to ensure dental graduates are retained in the profession and public sector. Further ensuring that oral health services are delivered efficiently and oral status of the Pacific is not compromised.

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