EGYPTIAN DENTAL JOURNAL
www.eda-egypt.org
VOL. 68, 1239:1248, APRIL, 2022
PRINT ISSN 0070-9484 • ONLINE ISSN 2090-2360
ORTHODONTICS, PEDIATRIC AND PREVENTIVE DENTISTRY
Submit Date : 08-01-2022 • Accept Date : 22-02-2022 • Available online: 30-03-2022 • DOI : 10.21608/edj.2022.115192.1942

KNOWLEDGE REGARDING DIAGNOSIS OF MOLAR INCISOR HYPOMINERALIZATION AMONG DENTAL INTERNS IN FACULTY OF DENTISTRY, CAIRO UNIVERSITY CROSS SECTION STUDY

Norhan Yahia Mohamed*, Gihan Mohamed Abuelniel** *and* Mariam Mohsen Aly***

ABSTRACT

Aim: This study aimed to investigate the awareness, knowledge, practice, and educational needs regarding molar incisor hypomineralization (MIH) among dental interns in Faculty of Dentistry, Cairo University.

Methodology: A questionnaire was distrbuted for 190 dental interns, encompassing multiple questions regarding demographic data, awareness, knowledge, etiology, diagnosis, and educational needs of MIH.

Results: About 67.0% of all the participants were aware of MIH while only 33.0% of the participants were not. 52.1% of the interns did not know the clinical feature of MIH and could not be able to diagnose MIH. The majority of participants chose genetic factors as the main etiological factor. A high percentage of participants 83.7% have never treated an MIH patient before. The majority of participants (88.4%) suggested including MIH-associated case studies in the undergraduate curriculum topics.

Conclusions: Molar incisor hypomineralization is a challenging dental condition faced by dental interns in Egypt. Therefore, clinical training including MIH diagnosis, etiological factors and management is needed.

KEYWORDS: Knowledge, Diagnosis, Molar incisor Hypomineralization, Dental Interns.

INTRODUCTION

Molar incisor hypomineralization (MIH) is a common qualitative defect of enamel affecting one or four first permanent molars (FPMs) and may affect the incisors. It was introduced for the first time by Weerheijm in 2001., Few years later, a survey was conducted that confirmed MIH's existence in most European countries **(Weerheijm and Mejàre, 2003).**

More recently, MIH has been described as one of the most common pandemic health problems in the world with an estimated global prevalence of 14.2% **(Bekes, 2020)**

* MSC Student Master Degree in Pediatric Dentistry and Dental Public Health Department, Faculty of Dentistry, Cairo University.
** Professor of Pediatric Dentistry and Dental Public Health Department, Faculty of Dentistry, Cairo University.
*** Lecturer of Pediatric Dentistry and Dental Public Health Department, Faculty of Dentistry, Cairo University..

The exact etiology of MIH is unknown, however, it has been associated with a variety of potential etiological factors, such as prematurity, infection such as otitis, bronchitis, asthma, and pneumonia. In addition, a possible relationship between MIH lesions with systemic, genetic, and environmental factors may play a role during enamel maturation **(Banerjee et al., 2018).**

Clinically, affected teeth show white creamy, well-defined colored yellow, or brown opacities on enamel, according to severity. The ultrastructural features of teeth surfaces with MIH revealed loss of prismatic pattern, porous structure with cracks, lower calcium and phosphate content in the affected surfaces and a change in ionic composition. This alteration in enamel may interfere with reconstructive dental procedures **(Fagrell, 2011).**

The unaesthetic appearance of affected anterior teeth, pain, sensitivity, susceptibility to dental caries, difficulties to achieve local anesthesia and provide suitable restoration are the main complications of MIH. Moreover, Post-eruptive enamel breakdown can occur quickly following eruption **(Kalkani et al., 2016).**

Early diagnosis and appropriate treatment can protect teeth from severe complications and improve masticatory and esthetic function. In addition, it is essential for improving the oral health and quality of life to reach successful long-term outcomes in affected children **(Gamboa et al., 2018).**

Limited information was available regarding whether dental practitioners in Egypt encounter MIH in their fields of work and whether the condition was considered as a clinical problem. **(Al-deen et al., 2020).**

The aim of the present study was to evaluate the awareness, knowledge, perception, and educational need among dental interns in Egypt regarding the diagnosis, etiological factors and management of MIH.

SUBJECTS AND METHODS

Study design and setting

This study was conducted as questionnaire-based cross-sectional study to assess the awareness, knowledge, practice, and educational needs regarding MIH among dental interns in Faculty of Dentistry, Cairo University.

Participants

Inclusion Criteria

- Interns serving their internship program in the Pediatric Dentistry and Dental Public Health Department
- Both genders were included.

Exclusion Criteria

- Dental interns who refused to participate in the study.

Trial registration:

The study was registered on clinicaltrail.gov under the title "**Knowledge Regarding Diagnosis of MIH Among Dental Interns in Faculty of Dentistry Cairo University**" with the identifier **NCT04030936**.

The Ethical Committee

The Ethical Committee, Faculty of Dentistry, Cairo University reviewed and approved the protocol on 26\11\2019 with no 81119 concerning the scientific content and compliance with applicable research and human subjects regulations .

Sample size:

The sample size was calculated based on the results of **Shafi et al., 2017** who reported that knowledge regarding MIH among interns was (59%). By adopting a confidence interval of (95%), a margin of error of (7%) with a finite population correction; the predicted sample size (n) was a total of (190) cases using Epi info for windows1.

Outcomes

- Awareness and source of information of MIH.
- knowledge regarding clinical features, diagnosis, and etiology of MIH.
- Clinical practice of MIH.
- Educational needs of participants.

Data source and management:

A total of 190 dental interns serving their internship program in Pediatric Dentistry and Dental Public Health Department in Faculty of Dentistry, Cairo University were selected to participate in this study. The recruitment of interns done for seven months from November 2019 tell June 2020. All Participants signed informed consent. For the electronic version (Google form) of the questionnaire, participants were briefed about the same information at the beginning, and informed consent was obtained from each participant in the form of answering a question (yes/ No) before proceeding with answering the questionnaire through E-mail. Questionnaire consisted of 10. questions, three were close-endedbinary (yes/ No), six questions were multiple-choice questions, and one open end question in five different sections.

The first section composed of three questions that focused on sociodemographic data including gender, nationality, and graduation university. The second section consisted of one question to evaluate the awareness of interns regarding MIH and source of information, while the third section consisted of five questions to assess knowledge regarding clinical features, diagnosis, and etiology.

The fourth section composed of two questions to evaluate the clinical practice of interns while the last section consisted of two questions to evaluate the educational needs.

Printed questionnaires were distributed by hand in lecture room by the principal investigator while during the COVID 19 lockdown the electronic version was distributed through e-mails and Whatsapp groups till the completion of the sample size.

Statistical Analysis:

Data management and statistical analysis were performed using the statistical package for social sciences2 (SPSS) software package Version 26 for Microsoft windows. Numerical data were presented as mean, standard deviation (SD) values. Categorical data were presented as frequencies and percentages and were analyzed using Fisher's exact test. The significance level was set at $p \leq 0.05$ within all tests and p-values were corrected for multiple comparisons utilizing Bonferroni correction. Correlations were performed using Fisher's exact test, the results were significant when the p-value ≤ 0.05.

RESULTS

Demographic data

The questionnaire was answered by (190) participants, 63 (33.2%) of which were males and 127 (66.8%) were females, with a statistically significant difference between them ($p<0.001$). Egyptian participants among the study population represented 166 (87.4%) and 24 (12.6%) were non-Egyptians with a statistically significant difference between them ($p<0.001$). There was no statistically significant difference between the distribution of participants according to university with 98 (51.6%) of participants were from governmental universities and 92 (48.4%) from non-governmental universities.

Assessment of awareness regarding MIH:

124 (67.0%) of the participants were aware of MIH while only 66 (33.0%) of the participants were not. Source of awareness was reported through lecture notes 72 (36.0%), dental clinic 33 (16.5%), the internet 16 (8.0%), books 8 (4%), and dental journals 5 (2.5%) with a statistically significant difference between the percentages of different answers ($p<0.001$) as shown in table (1).

TABLE (1): Awareness and source of information regarding MIH among the study population

	Answers	n	%	*p*-value
Not aware		66[A]	33.0%	
Aware	**Dental journals**	5[B]	2.5%	
	Lecture notes	72[A]	36.0%	
	Brochures or pamphlets	0	0.0%	**<0.001***
	Internet	16[C]	8.0%	
	Books	8[BC]	4.0%	
	Dental clinic	33[D]	16.5%	

; significant (p ≤ 0.05) ns; non-significant (p>0.05)

Assessment of knowledge regarding MIH

Regarding the clinical features of MIH, 91 (47.9%) of participants possessed the knowledge while 99 (52.1%) of participants didn't with no statistical significant difference between them with p-value=0.470. Only 57 (30.0%) of participants answered questions related to the clinical features correctly while a higher percentage of participants 133 (70.0%) chose the wrong answers with a statistically significant difference between them as shown in table (2).

Regarding the ability to diagnose MIH, 105 (55.3%) of participants reported that they were not able to diagnose MIH, while 35 (18.4%) were able to diagnose the condition in initial and advanced stages, and only 50 (26.3%) reported that they were able to diagnose in advanced stages with statistical significant difference (p<0.001). The majority of participants 97 (51.1%) didn't know the clinical criteria to diagnose MIH, a significantly lower percentage 63 (33.2%) didn't know how to implement the criteria (p<0.001). Furthermore, a significantly lower percentage of participants 30 (15.8%) knew the clinical criteria and their implementation (p<0.001) as shown in table (2)

Regarding the etiology of MIH, there was a significant difference in the percentages of different answers (p<0.001). The majority of the participants chose genetic factors 92 (35.0%) as the main etiologic factor, a significantly lower percentage 62 (23.6%) chose environmental contaminants (p<0.001). Furthermore, significantly less number of participant reported that various causative factors were responsible for MIH such as medications 37 (14.1%), chronic 31(11.8%), and acute medical conditions 24 (9.1%) that either administrated or occur during pregnancy, as well as fluoride exposure

TABLE (2): Knowledge regarding MIH clinical features and diagnosis among the study population

Question	Answers	n	%	*p*-value
Do you know the clinical features of MIH?	**No**	99	52.1%	**0.470ns**
	Yes	91	47.9%	
What are the clinical features?	**Correct**	57	30.0%	**<0.001***
	Wrong	133	70.0%	
Do you feel prepard to diagnose MIH?	**Yes, in the initial and advanced stages**	35[A]	18.4%	**<0.001***
	Yes, only in advanced stages	50[A]	26.3%	
	No	10[B]	55.3%	
Do you know if there are clinical criteria to diagnose MIH?	**Yes, and know how to implement them**	30[A]	15.8%	**<0.001***
	Yes, but don't know how to implement them	63[B]	33.2%	
	No	97[C]	51.1%	

Different superscript letters indicate a statistically significant difference within the same question

; significant (p ≤ 0.05) ns; non-significant (p>0.05)

17 (6.5%) contributing as the causative factors of MIH (p<0.001).

Assessment of clinical practice of MIH

Regarding the rate of MIH cases, the majority of participants 83 (43.7%) reported that they had rarely seen patients with hypomineralized teeth in their practice. Significantly less number of participants either have seen it on monthly basis 52 (27.4%) or to have never seen it before 40 (21.1%) with p<0.001. While only 15 (7.9%) claimed that hypomineralized teeth were identified on weekly basis. A significant statistical difference was reported regarding clinical practice where only 31 (16.3%) of participants treated an MIH patient in their dental school training, while a higher percentage of participants 159 (83.7%) have never treated an MIH patient.

Assessment of educational needs of participants

A statistically significant difference was presented with the majority of participants 168 (88.4%) suggested including MIH-associated case studies in the undergraduate curricula topics while only 22 (11.6%) didn't agree. There was a significant difference between the percentages of different answers (p<0.001) where the majority of the participants 83 (43.7%) either chose "Diagnosis" 109 (44.3%) or "Treatment" 92 (37.4%) as the topics related to MIH that should be demonstrated for undergraduate students while a less number of participants 45 (18.3%) chose "Etiology" as a topic .

Correlation between MIH awareness, knowledge, clinical practice, educational needs and demographic data

There was a significant correlation between MIH awareness and nationality with a significantly higher level of awareness found in Egyptians 114 (91.9%) with *p*-value=0.012. Similarly, there was a significant correlation between the type of university with significantly higher levels of awareness found in graduates of private universities 72(58.1%). However, there was no significant difference in the level of awareness between different genders with *p*-value=0.520.

There was no significant correlation between MIH knowledge, clinical practice, educational needs and different demographic factors (p>0.05).

TABLE (3): Knowledge regarding etiology of MIH among the study population

Question	Answers	n	%	P-value
Which factors do you think are involved in the etiology of MIH?	**Genetic factors**	92[A]	35.0%	**0.001***
	Environmental contaminants	62[B]	23.6%	
	Chronic medical conditions that affect mothers during pregnancy and/or the child	31[CD]	11.8%	
	Acute medical conditions that affect mothers during pregnancy and/or the child	24[CD]	9.1%	
	Antibiotics/medications taken by mother during pregnancy and/or the child	37[C]	14.1%	
	Fluoride exposure	17[D]	6.5%	

Different superscript letters indicate a statistically significant difference within the same question

****; significant (p ≤ 0.05) ns; non-significant (p>0.05)***

TABLE (4): The correlation between MIH awareness and demographic data

Parameter			Not aware	Aware	p-value
Gender	**Male**	**n**	24	39	**0.520ns**
		%	6.4%	1.5%	
	Female	**n**	2	5	
		%	3.6%	8.5%	
Nationality	**Egyptian**	**n**	52	14	**0.012***
		%	8.8%	1.9%	
	Non-Egyptian	**n**	14	10	
		%	1.2%	8.1%	
University	**Public universities**	**n**	6	52	**<0.001***
		%	9.7%	1.9%	
	Private universities	**n**	20	72	
		%	30.3%	8.1%	

TABLE (5): The correlation between MIH knowledge and demographic data

Parameter			Correct answer	Wrong answer	value
Gender	**Male**	**n**	17	46	**0.615ns**
		%	29.8%	34.6%	
	Female	**n**	40	87	
		%	70.2%	65.4%	
Nationality	**Egyptian**	**n**	52	114	**0.349ns**
		%	1.2%	5.7%	
	Non-Egyptian	**n**	5	19	
		%	8.8%	14.3%	
University	**Public universities**	**n**	24	74	**0.113ns**
		%	42.1%	55.6%	
	Private universities	**n**	33	59	
		%	57.9%	44.4%	

; significant (p ≤ 0.05) ns; non-significant (p>0.05)

TABLE (6): The correlation between MIH practice and demographic data

Parameter			No	Yes	p-value
Gender	**Males**	**N**	54	9	**0.680ns**
		%	34.0%	29.0%	
	Females	**N**	105	22	
		%	66.0%	71.0%	
Nationality	**Egyptians**	**N**	139	27	**0.96ns**
		%	87.4%	87.1%	
	Non-Egyptians	**n**	20	4	
		%	12.6%	12.9%	
University	**Public Universities**	**n**	85	13	**0.326ns**
		%	53.5%	41.9%	
	Private Universities	**n**	74	18	
		%	46.5%	58.1%	

; significant (p ≤ 0.05) ns; non-significant (p>0.05)

TABLE (7): The correlation between MIH educational needs and demographic data

Parameter			No	Yes	p-value
Gender	Males	n	9	54	0.473ns
		%	40.9%	32.3%	
	Females	n	13	113	
		%	59.1%	67.7%	
Nationality	Egyptians	n	18	147	0.492ns
		%	81.8%	88.0%	
	Non-Egyptians	N	4	20	
		%	18.2%	12.0%	
University	Public Universities	n	12	86	0.824ns
		%	54.5%	51.5%	
	Private Universities	n	10	81	
		%	45.5%	48.5%	

**; significant (p ≤ 0.05) ns; non-significant (p>0.05)*

DISCUSSION

The questionnaire used in the current study was clear, simple, valid, and reliable and evaluated many aspects of MIH including awareness, knowledge, perception, and educational need **(Weerheijm and Mejàre, 2003; Silva et al., 2016; Elhennawy et al., 2020).**

Most of questionnaires were hand-delivered similar to studies conducted in Iran, UAE, and Iraq. Hand-delivered questionnaires provided more accurate data as it allowed investigators to explain the purpose and meaning of the included questions **(Ghanim et al., 2011; Bagheri et al., 2014; Dastouri et al., 2020).**

Due to coronavirus lockdown, 60 questionnaires were delivered via the internet in the form of an electronic questionnaire that provide major benefits in the completeness of data, speed of data flow, and data handling **(Mahmassani et al., 2020).**

Molar Incisor Hypomineralization is considered a highly prevalent worldwide problem affecting children under 10 years of age, in agreement with **Crombie et al., 2008; Shafi et al., 2017; Elhennawy et al., 2020** who reported that most of the participants were familiar with MIH.

On contrary, **Pangjaj, 2020** reported that the overall knowledge and awareness of dental students regarding MIH were insufficient that can be linked to the limited data about MIH in curricula of the participating students.

In the current study, the main source of information regarding MIH was lecture notes in the majority of participants which was consistent with **silva et al., 2016** and **Elhennawey et al., 2020.** This could be explained by the description of lectures as the most preferred teaching method and the prominent feature in many courses (**Marmah, 2014).**

In contrast to this finding, **Daryani et al., 2019** reported that the main source describing MIH was dental journals which could be attributed to the difference between the participants where graduated dentists were included instead of interns.

The clinical presentation of MIH depends on its severity and can range from white-creamy opacities, yellow-brown opacities, post-eruptive enamel breakdown to atypical caries located on at

least one FPM with or without incisors involvement (**Bekes, 2020**)

A significantly high percentage of participants were unaware of the clinical feature of MIH which was in line with **Silva et al., 2016; Shafi et al., 2017** who reported that most students didn't know MIH clinical features. This can be attributed to the deficiency in clinical training among the participants (**Elhennawy et al., 2020).**

On the other hand, **Daryani et al., 2019; Elhennawy et al., 2020** reported that most of the participants were familiar with the clinical features of MIH and attributed that to a high level of interest for enamel defects including MIH.

The majority of the participants in the current study weren't able to diagnose MIH which was in agreement with **Silva et al., 2016**. This could be justified by the fact that MIH may be mistaken for a range of other conditions including diffuse opacities, hypoplasia, amelogenesis imperfecta, and carious white spot lesions. Understanding the key features that distinguish MIH from other conditions is essential for an accurate diagnosis of MIH (**Almuallem and Busuttil-Naudi, 2018).**

On the contrary, **Crombie et al., 2008; Alanzi et al., 2018** noted that the majority of the participants were familiar with the clinical features of MIH and its implementation which could be linked to the years of dental experience of general and pediatric dentists who participated in those studies.

The cause of MIH is still unclear, different studies suggested a multifactorial etiology associated with the defect, which may be of environmental or genetic origin **(Bekes , 2020)**

The majority of participants chose genetic factors as the etiological factor of MIH in the present study which was in agreement with **Al-deen et al., 2020; Elhennawy et al., 2020**. This finding could be explained by the fact that the amelogenesis process is regulated by a group of genes and there was a greater concordance of MIH between monozygotic twins for affected first molars and permanent incisors (**Teixeira et al., 2018).**

However, **Gamboa et al., 2018; Serna-Muñoz et al., 2020** concluded that most dentists attributed the main etiology of MIH to acute and chronic conditions which could be justified by the clinical presentation of MIH that suggests a systemic condition affecting amelogenesis **(Teixeira et al., 2018).**

Regarding MIH in dental practice, the majority of participants had never treated an MIH patient before and had rarely seen patients with hypomineralized teeth in their practice which was in agreement with **Shafi et al., 2011; Silva et al., 2016**. This could be explained by the limited clinical experience of dental interns **(Tripepi et al., 2010).**

In contrast, **Bagheri et al., 2014; Al-deen et al., 2020** concluded that dentists reported a monthly frequency of observation of MIH- affected teeth in their clinical practice which may be attributed to the clinical experience of the participating dentists in those studies.

A significantly high percentage of participants were interested in further training especially concerning diagnosis and treatment of MIH. This was in line with **Silva et al., 2016**; **Shafi et al., 2017** who explained that diagnosis is the key to successful treatment (**Tripepi et al., 2010).**

There was a significant correlation between MIH awareness and nationality of the participants where a higher level of awareness was found among Egyptian interns. This finding was in agreement with **Pangjaj, 2020** who reported that native students have a higher level of awareness compared to foreign students and attributed that to the different challenges facing the foreign students (**Mahmoud et al., 2010).**

Also, a significant correlation between MIH awareness and the type of university was found where higher levels of awareness were found in graduates of non-governmental universities that was similar to the finding of **Idiegbeyan and Osinulu,**

2016 who reported that non-governmental students had higher MIH awareness than public students. This could be justified by the difference in the teaching modalities between non-governmental and governmental universities (**Marmah, 2014).**

CONCLUSIONS

- About two-thirds of interns were aware of MIH where lecture notes were the main source of information for them.
- Half of the participants possessed knowledge regarding the clinical feature and were prepared to diagnose in the initial and advanced stages of MIH.
- On the other hand, the majority of the interns have never treated an MIH patient and rarely seen those patients in their practice.
- Almost the majority of the participants suggested including MIH-associated case studies in the undergraduate curriculum and chose diagnosis and treatment as the topics that should be taught.

REFERENCES

1. Alanzi, A., Faridoun, A., Kavvadia, K., & Ghanim, A. (2018). Dentists' perception, knowledge, and clinical management of molar-incisor-hypomineralisation in Kuwait: a cross-sectional study. BMC Oral Health, 18(1), 1-9.
2. Al-deen, A ., Al-deen, H., Abbas, A ., Al-Akwa, A ., AL-Haddad, K. A., and Al-labani, M. A. Knowledge and perception of molar incisor hypomineralization among dental practitioners in Sana'a city-Yemen. Universal Journal of Pharmaceutical Research 2020; 5 (5): 4-11.
3. Almuallem, Z., and Busuttil-Naudi, A.: (2018): Molar Incisor Hypomineralisation (Mih) – An Overview: British Dental Journal 225(7): 601– 609.
4. Bagheri, R., Ghanim, A., Reza Azar, M., and Manton, D.: (2014): Molar Incisor Hypomineralization: Discernment Of A Group Of Iranian Dent Academics: J. Oral Heal. Oral Epidemiol., 3(1), 1–9.
5. Banerjee, S., Kumar, D., Mukherjee, C.G., Singh, A. and Maheshwari, A., 2018. A clinical case report on management of MIH in twins. Chief Patron, 4(2), p.35.
6. Bekes, k ., 2020. Molar incisor hypo mineralization (book). 1st Edition , Publishing by Springer, Cham.
7. Crombie, F. A., Manton, D. J., Weerheijm, K. L., and Kilpatrick, N. M.: (2008): Molar Incisor Hypomineralization: A Survey Of Members Of The Australian And New Zealand Society Of Paediatric Dentistry Australian Dental Journal,., 53(2), 160–168
8. Daryani, K., Poonacha, K., Deshpande, A., Dave, B., Khoja, M., and Patel, K.: (2019): Knowledge, Attitude, and Practice Regarding Molar-Incisor Hypomineralization Among Postgraduates And Faculty Members Of K.M. Shah Dental College And Hospital, Vadodara, Gujarat, India: Journal Of The International Clinical Dental Research Organization., 11(1), 26.
9. Dastouri, Kowash M., · Al-Halabi M., Salami A., Khamis A , and Hussein I (2020) 'United Arab Emirates Dentists' Perceptions About The Management Of Broken Down First Permanent Molars And Their Enforced Extraction In Children: A Questionnaire Survey', European Archives Of Paediatric Dentistry. Springer Berlin Heidelberg, 21(1): 31–41.
10. Elhennawy, K., Anang, M., Splieth, C., Bekes, K., Manton, D. J., Hedar, Z., Krois, J., Jost-Brinkmann, P. G., and Schwendicke, F.: (2020): Knowledge, Attitudes, And Beliefs Regarding Molar Incisor Hypomineralization (MIH) Amongst German Dental Students: International Journal Of Paediatric Dentistry . 30(1), 66-74.
11. Fragelli, C., Barbosa, T. S., Bussaneli, D. G., Restrepo, M., Cordeiro, R., and Santos-Pinto, L. (2021). Aesthetic Perception In Children With Molar Incisor Hypomineralization. European Archives of Paediatric Dentistry 22(2), 227–234.
12. Ghanim, A., Morgan, M., Marino, R., Manton, D., & Bailey, D. (2011). Perception of molar-incisor hypomineralisation (MIH) by Iraqi dental academics. International journal of paediatric dentistry, 21(4), 261-270.
13. Gamboa, G., Lee, G., Ekambaram, M., and Yiu, C. (2018). Knowledge, Perceptions, and Clinical Experiences On Molar Incisor Hypomineralization Among Dental Care Providers In Hong Kong. BMC Oral Health, 18(1), 217.
14. Idiegbeyan-Ose, J., Nkiko, C., and Osinulu, I.: (2016): Awareness And Perception Of Plagiarism Of Postgraduate Students In Selected Universities In Ogun State, Nigeria Library Philosophy And Practice 0_1 .
15. Kalkani, M., Balmer, R. C., Homer, R. M., Day, P. F., and Duggal, M. S. (2016). Molar Incisor Hypomineralisation:

Experience And Perceived Challenges Among Dentists Specialising In Paediatric Dentistry And A Group Of General Dental Practitioners In The UK. European Archives of Paediatric Dentistry, 17(2), 81–88.

16. Mahmassani, D., Tamim, H., Makki, M., and Hitti, E. (2020). The Impact of COVID-19 Lockdown Measures on ED Visits in Lebanon. The American Journal of Emergency Medicine, 29(6),735–757.
17. Marmah, A.A. (2014). Students ' Perception About The Lecture as A Method of Teaching In Tertiary Institutions. Views of Students From College of Technology Eduction, Kumasi (Coltek). International Journal of Education And Research, 2(6), 601-612. .
18. Mahmud, Z., Amat, S., Rahman, S., and Ishak, N. M.: (2010): Challenges for international students in Malaysia: Culture, climate and care: 7 (6)289–293.
19. Pangjaj, R. (2020). Knowledge And Awareness Toward MIH Among Dental Students At LSMU: Magistro Darbas. Lietuvos Sveikatos Mokslų Universitetas. Prieiga Per Elaba – Nacionalinė Lietuvos Akademinė Elektroninė Biblioteka.2, 36.
20. Serna, C., Martínez, Y., Pérez, A., Poza-, A., Ibáñez, F. J., And Ortiz-Ruiz, A. J. (2020). Perception, Knowledge, And Attitudes Towards Molar Incisor Hypomineralization Among Spanish Dentists: A Cross-Sectional Study. BMC Oral Health, 20(1), 260.
21. Shafi, S.,Togo R And Mhamed M (2017) 'Questionnaire Inventory About Clinical Knowledge And Awareness of Molar – Incisor Hypo Mineralization (Mih) Among Dental Specialist, Interns, and Students, At College of Dentistry, King Khalid University, Abha Saudi Arabia' International Education & Research Journal 3(5), 673–676.
22. Silva, M. J., Alhowaish, L., Ghanim, A., And Manton, D. J. (2016). Knowledge And Attitudes Regarding Molar Incisor Hypomineralisation Amongst Saudi Arabian Dental Practitioners and Dental Students. European Archives of Pediatric Dentistry ,17(4), 215–222.
23. Teixeira, R., Andrade, N. S., Queiroz, L., Mendes, F. M., Moura, M. S., Moura, L., And Lima, M. (2018). Exploring The Association Between Genetic And Environmental Factors And Molar Incisor Hypomineralization: Evidence From A Twin Study. International Journal of Paediatric Dentistry, 28(2), 198–206.
24. Tripepi, G., Jager, K. J., Dekker, F. W., and Zoccali, C. (2010). Selection Bias And Information Bias In Clinical Research. Nephron. Clinical Practice, 115(2), 94–99.
25. Weerheijm, K. L. and Mejàre, I. (2003) 'Molar Incisor Hypomineralization: A Questionnaire Inventory Of Its Occurrence In Member Countries Of The European Academy Of Paediatric Dentistry (EAPD)', International Journal Of Paediatric Dentistry, 13(6). 411–416.