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Awareness of Orthodontic Treatment in School Children in Sirte, (Middle Region of Libya): A Cross-Sectional Study

Aftima Alamin Derbash *

Department of Orthodontics, Preventive and Paediatric Dentistry, Faculty of Dentistry, Sirte University, Sirte, Libya

*Corresponding author: senan844@yahoo.com

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Abstract:

This study has been designed to assess the concerns of schoolchildren about receiving orthodontic care. To determine how well school students in Sirte City are informed of orthodontic issues and how they are treated. Since orthodontic therapy necessitates patient commitment and compliance, it is critical to evaluate patients' awareness and understanding to get baseline data that will help patients and operators make decisions. So, determining the level of awareness about orthodontic therapy is essential. There are studies in the literature that assess orthodontic knowledge and awareness among schoolchildren in various societies, but none have been discovered that assess these concepts in the middle regions of Libyan society, according to researchers. In a population that included a cross-sectional, observational (non-experimental), descriptive questionnaire survey, Data for the evaluation of knowledge and awareness of orthodontic treatment were generated by the restructured questionnaires (15 objective questions). Statistical data was analyzed and categorized according to age, gender, and residence place. The study's findings demonstrated that students' awareness and comprehension of orthodontic therapy were below average. It was found that the level of awareness of orthodontics varied depending on a person's gender. Conclusion: Orthodontic knowledge was assessed, and limitations in this field were found in Sirte City among schoolchildren.

Keywords: Orthodontics, Awareness, Libya, Schoolchildren.

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الوعي بعلاج تقويم الأسنان لدى أطفال المدارس في سرت (المنطقة الوسطى من ليبيا): دراسة مقطعية

افطيمة لامين غيث درباش

قسم طب اسنان الاطفال وتقويم الاسنان وطب الفم الوقائي، كلية طب وجراحة الفم والاسنان، جامعة سرت،
مدينة سرت، ليبيا.

المخلص

تم تصميم هذه الدراسة لتقييم مدى وعي أطفال المدارس بشأن تلقي رعاية تقويم الأسنان. وتحديد مدى اطلاع طلاب المدارس في مدينة سرت على مشاكل تقويم الأسنان وكيفية علاجها، نظرًا لأن علاج تقويم الأسنان يتطلب التزام

المريض بالتعليمات وامتناله للخطة العلاجية، فمن الأهمية أن يتم تقييم وعي المرضى وفهمهم للحصول على قاعدة بيانات أساسية تساعد المرضى والأخصائيين على اتخاذ القرارات المناسبة. لذلك، كان من الضروري تحديد مستوى الوعي حول علاج تقويم الأسنان في هذه المنطقة. هناك دراسات عديدة لتقييم المعرفة والوعي بتقويم الأسنان بين تلاميذ المدارس في مختلف المجتمعات في العالم، ولكن لم يتم اكتشاف أي منها لتقييم هذا المفهوم في المناطق الوسطى من المجتمع الليبي حسب معلومات الباحث. هذه الدراسة تضمنت مسحاً وصفيًا مستعرضًا للبيانات (غير تجريبي)، حيث تم إنشاء بيانات لتقييم المعرفة والوعي بعلاج تقويم الأسنان وفقًا للاستبيان المعاد هيكلته (15) سؤالاً موضوعيًا، وتم تحليل البيانات الإحصائية وتصنيفها وفقًا للعمر والجنس ومكان الإقامة. وقد أظهرت نتائج الدراسة أن وعي الطلاب وفهمهم لعلاج تقويم الأسنان كان أقل من المتوسط بشكل عام، ووجد أن مستوى الوعي بتقويم الأسنان يختلف باختلاف جنس الشخص. الخلاصة: تم تقييم المعرفة بتقويم الأسنان، وتم العثور على العوائق في هذا المجال في مدينة سرت بين أطفال المدارس.

الكلمات المفتاحية: تقويم الأسنان، مستوى الوعي، ليبيا، أطفال المدارس.

Introduction

An essential aspect of health is oral health. It may have an impact on social development, education, general health, and overall well-being. The social objective of the WHO is to help people live healthy lives that are both socially and economically productive. The development of a child's oral health can have an impact on their overall health and well-being. Awareness is the state or capacity to observe, feel, or be conscious. Awareness is said to be the characteristic or state of being aware of something (10)(16). International aesthetic awareness has recently increased, most likely because of more social contacts on various communication platforms (3). Since orthodontic therapy necessitates patient commitment and compliance, it is critical to evaluate patients' awareness and understanding to get baseline data that will help patients and operators make decisions. So, determining the level of awareness about orthodontic therapy is essential. Malocclusion is a variance in the position of teeth, the morphology of the jaws, the face, and the skull rather than an illness (5). Orthodontic therapy includes a variety of outcomes, including enhanced function, attractiveness, and psychological well-being (17). Batista *et al.*, 2018 reported that the majority of patients referred to orthodontic specialists are children, and the pre-adolescent stage is particularly crucial since oral growth takes place during this time. Throughout all periods of human life, facial and dental aesthetics play a crucial part in one's life, especially before and during adolescence. Also, getting the right care during this time is essential to improving dentofacial health and function (7). In the orthodontic treatment of their children, parents are extremely important (13)(4). The target audience for many life education initiatives is thought to be schoolchildren; that's why it is important to know their level of knowledge. Research evaluating patients' knowledge, attitudes, and practices regarding orthodontics as a malocclusion treatment is scarce worldwide, and this deficiency is particularly noticeable in Africa, probably because there aren't many orthodontic professionals there (6). There are studies in the literature that assess orthodontic knowledge and awareness among schoolchildren in various societies (1) (11) (15), but none have been discovered that assess these concepts in the middle regions of Libyan society, according to researchers.

Aims and Objectives:

This study aimed to evaluate the level of awareness of Libyan schoolchildren towards orthodontic problems and their treatment. In this context, the purpose of this questionnaire is to assess the schoolchildren's concerns about receiving orthodontic treatment in Sirte City, a middle region in Libya.

Materials and Methods:

A cross-sectional, observational (non-experimental) descriptive questionnaire survey was conducted among schoolchildren in Sirte city, located in the middle region of Libya. A total of 150 respondents—56 (37.3%) male and 94 (62.7%) female—completed and returned the questionnaires. Statistical data was analyzed and categorized according to age, gender, and residence place. According to the prestructured questionnaire (15 objective questions), data was formulated for the assessment of knowledge and awareness of orthodontic treatment.

Among the population of Sirte City, a cross-sectional, observational (non-experimental), descriptive questionnaire survey was undertaken. and the questionnaires were physically handed out to participants. The questions utilized in this study were drawn from one that was done by Harish in India (5). The English questionnaire was first translated into Arabic. The Arabic questionnaire was then assessed for face and content validity by dental academics. The questionnaires for this study were tested on five randomly selected school students. The questionnaire was simple to answer, and participants had no

trouble completing it. The final version of the questionnaire consisted of 15 questions. The survey was given out at random to 150 students attending schools in these various Sirte areas between the months of February and March 2023. Participants in the study were requested to indicate on the questionnaire sheet which of the following answers, in their opinion: yes or no. According to school records, male and female adolescents between the ages of 14 and 18 were required for inclusion in the research.

Questions included were:

Age...../Gender...../Residence place.....

Q.1) Have you ever visited a dentist?

a) Yes b) No

Q.2) Have you heard of an orthodontist?

a) Yes b) No

Q.3) Are you aware that an Orthodontist can bring your teeth in proper position?

a) Yes b) No

Q.4) Did you notice improper positioning of your teeth by yourself or was it told to you by society/others?

a) Yourself b) Society/others.

Q.5) Have you ever noticed people with improperly positioned teeth?

a) Yes b) No

Q.6) Do you think that teeth should be properly positioned for a better facial appearance?

a) Yes b) No

Q.7) Do you know at what age orthodontic treatment should be started?

a) Primary school b) secondary school c) college

Q.8) Do you know the side effects of improperly positioned teeth?

a) Yes b) No

Q.9) Do you know that taking proper orthodontic treatment at an early age would improve your facial appearance?

a) Yes b) No

Q.10) Do you know the cost of orthodontic treatments?

a) Yes b) No

Q.11) Do you know how much time, orthodontic treatment takes?

a) less than 1 year b) 2-3 years

Q.12) Are you aware that few teeth may have to be removed for proper positioning of irregular teeth?

a) Yes b) No

Q.13) Do you know different types of habits that can cause improper positioning of teeth?

a) Yes b) No

Q.14) Do you know about orthodontic braces and their types?

a) Metallic Braces. b) Ceramic Braces c) Lingual Braces d) Invisalign braces

Q.15) Are you aware that the improperly positioned teeth can be corrected at the age of 35-40 years also?

a) Yes b) No

The purpose of this study is to determine how worried the school students are about getting orthodontic care. The following were employed as exclusion criteria: history of prior orthodontic treatment, several missing teeth, craniofacial abnormalities such as cleft lip and palate, facial hemiatropy, cleidocranial dysplasia, etc., and individuals who did not fill out the questionnaire entirely. Statistics were examined and categorized.

Statistical analysis:

The data obtained were analysed using the Statistical Package for the Social Sciences BM SPSS version 26. Descriptive statistics was applied to describe the study variables, and the Chi Square test procedure was used to relationship between variables.

Results:

1- Distribution of sample size according to age, gender, and residence place:

Age, gender, and residence place distribution of the study sample was illustrated in table1, table2, table 3 and Figure 1,2,3 respectively, a total of 150 school children’s students were included in this study with ages ranging from 14-18 years, 37.3% of students were male while female one represents 62.7%. Whereas the residence place of the sample 87.3% lived in the city while 12.9% lived in the village as shown in Table 3 and Figure 3.

Table 1: Distribution of age.

Age	Frequency	Percentage %
Less than 16	42	28.0
More than 16	108	72.0
Total	150	100.0

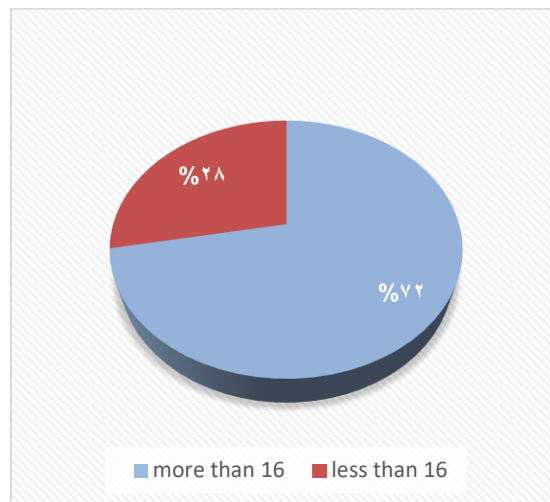


Figure 1: Distribution of sample size according to age.

Table 2: Gender distribution of sample size.

Gender	Frequency	Percentage %
Female	94	62.7
Male	56	37.3
Total	150	100.0

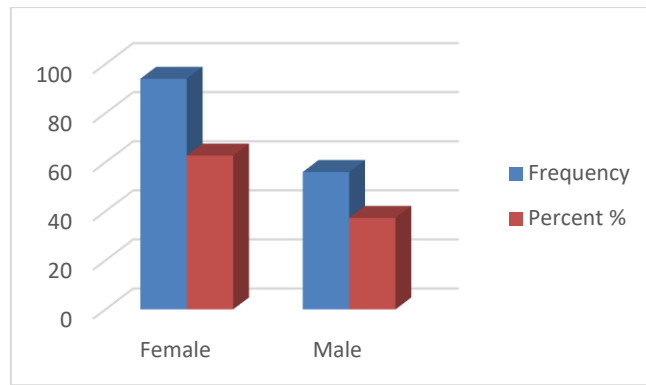


Figure 2: Gender distribution of sample size.

Table 3: Distribution of sample size according to residence place.

Place	Frequency	Percentage%
City	131	87.3
Village	19	12.7
Total	150	100.0

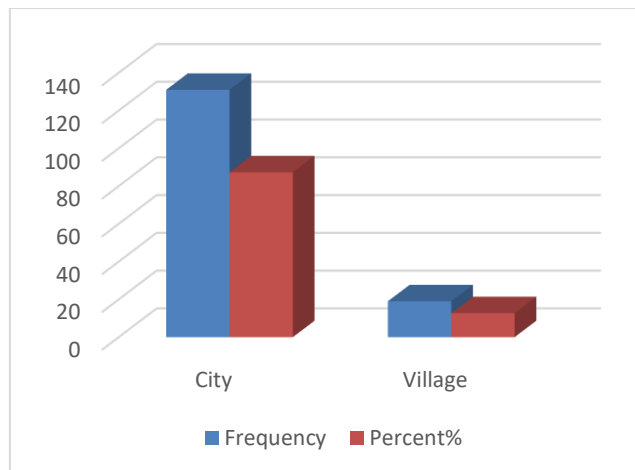


Figure 3: Distribution of sample size according to residence place.

2- Relationship between orthodontic awareness and age, gender, and residence place:

2.1. The relationship between orthodontic awareness and age:

After analysing the data on the two variables to determine the relationship between age categories and awareness, the conclusions are displayed in the table 4:

Table 4. The relationship between awareness and age categories.

Age categories	No		Yes		Total	
	Number	Percentage %	Number	Percentage %	Number	Percentage %
Less than 16	333	0.20	129	0.08	462	0.28
More than 16	838	0.51	350	0.21	1188	0.72
Total	1171	0.71	479	0.29	1650	100
Chi square	0.38					
P value	0.54					

According to the chi-square test (0.38) in Table 4, it was found that there was no statistically significant ($P > 0.05$) relationship between awareness and the age groups. In general, we can see from the results of the above table that 71% do not have any awareness of orthodontic problems, while 29% are aware of them.

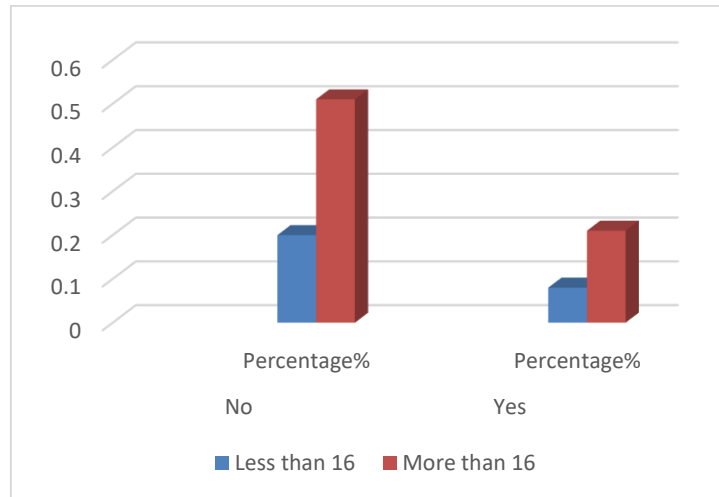


Figure 4: Relationship between awareness and age categories.

2.2. The relationship between orthodontic awareness and gender:

Table 5 showed a statistically significant relationship between the percentage of awareness and gender; the corresponding probability values for the chi-square test statistics were less than 5% (P -value <0.05), suggesting a relationship between gender and orthodontic awareness. It has been concluded that females have more awareness than males (Figure 5).

Table 5: The relationship between orthodontic awareness and gender.

Gender	No		Yes		Total	
	Number	Percentage%	Number	Percentage%	Number	Percentage%
Female	752	0.46	282	0.17	1034	0.63
Male	420	0.26	196	0.12	616	0.37
Total	1172	0.72	479	0.29	1650	100
Chi-square	3.87					
P value	0.04					

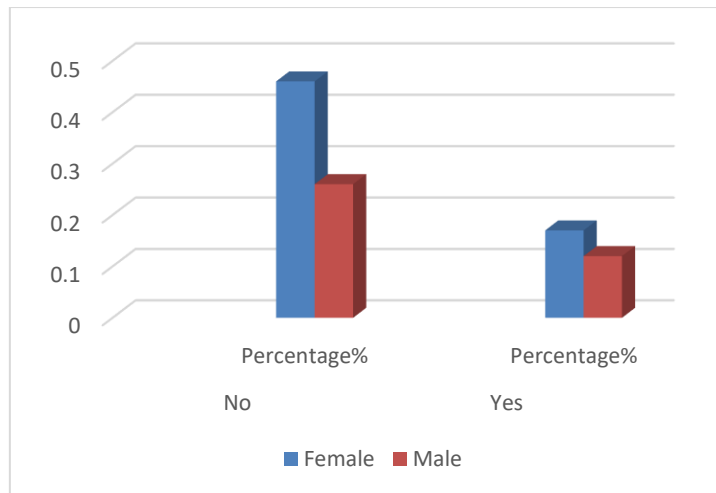


Figure 5: Relationship between awareness and gender.

2.3. The relationship between orthodontic awareness and residence place:

There was no significant relationship between the percentage of orthodontic awareness and the place of residence, based on the results found in Table 6 and Figure 6, the corresponding P-value which was higher than 5% (P-value > 0.05).

Table 6: Relationship between awareness and place of residence.

Residence	No		Yes		Total	
	Number	Percentage%	Number	Percentage%	Number	Percentage%
city	1031	0.63	410	0.25	1441	0.88
Village	140	0.9	69	0.03	209	0.12
Total	1171	0.72	479	0.28	1650	100
Chi square	1.84					
P value	0.19					

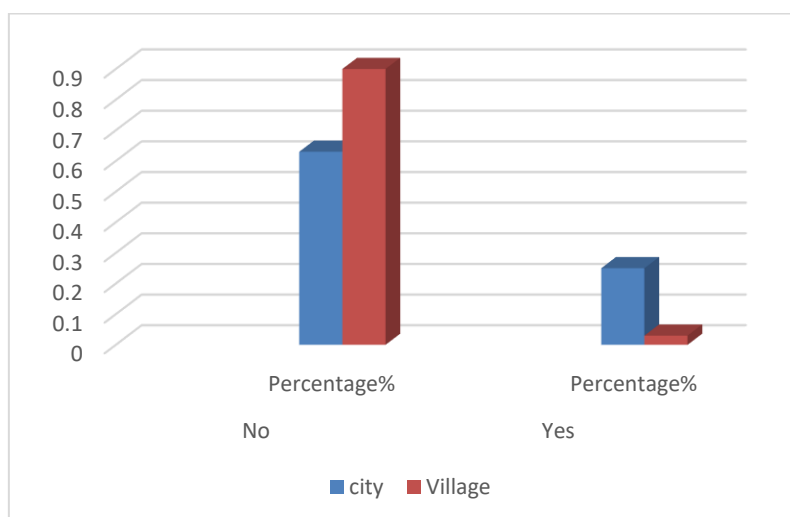


Figure 6: Relationship between awareness and place of residence.

Discussion:

The necessity of this study was determined by the fact that orthodontic issues rank among the most often reported dental issues globally. After periodontal disease and tooth decay, malocclusion is reportedly the third most prevalent dental disease (18). Although though most people currently know what a dentist is, many are ignorant of the specialty of orthodontics, which deals with tooth misalignment. Due to a lack of knowledge, a significant number of people with malocclusion may not receive treatment. Although though individuals are aware of orthodontics, many are hesitant to seek treatment due to the expensive cost, lengthy duration, aesthetic concerns with the placement of orthodontic appliances, and potential tooth extractions. It is crucial and necessary to assess the children's degree of awareness regarding orthodontic therapy. It is crucial to educate kids about orthodontic therapy since early orthodontic treatment (preventive and interceptive) can aid in the prevention of malocclusion (12). Being aware of orthodontic treatments can encourage patients to begin and complete all recommended phases of care. In their study, Muqtadir *et al.*, mentioned that parents working fewer hours per week and children missing more school may be caused by malocclusion, postponed treatment, and deteriorating oral-tooth health (11).

Age had no noticeable effect on orthodontic awareness in Libyan schoolchildren in Sirte, while it differed between sexes. The percentage showed a significant difference between females and males ($p = 0.04$). This agrees with (2) finding, and this may be attributed to sample choice and collection and the fact that females in general are more concerned with aesthetics.

However, the findings of this investigation align with previous studies conducted in Pakistan (9). In this study, only 29% of survey respondents were aware of orthodontic therapy, children had less awareness about orthodontic treatment may be because they had not seen many individuals wearing braces, or they had some understanding about the orthodontic treatment but not about the duration and expense of the treatment. This low level of awareness runs counter to the findings of other research in different populations. (14)(8)(19).

This explanation highlights the critical need to create educational and training programs with cooperation from the government, international organizations, health officials, and dental health care providers to inform schoolchildren and other public groups about orthodontic problems and management, even though it is still an assumption that requires more research. There aren't many orthodontists in the area where this study was conducted.

The study's limitations:

The current study had many limitations that merit discussion, even though it offered baseline data that can be used for future research. Only one region was included in this study. For a more precise result, these studies ought to include a broad spectrum of regions. Since the study was done in Sirte, it's possible that the findings do not accurately represent all Libyans. Additionally, the study was restricted to only schoolchildren and left out the entire public.

Conclusion:

The results of this study showed that schoolchildren's awareness and knowledge about orthodontic therapy was below average. It was determined that gender had an impact on how well-known orthodontics were. Orthodontic knowledge among students was assessed, and limitations in this field were found. After the survey application, a presentation about orthodontics in schools was intended to increase the students' level of understanding. It is believed that services that raise students' knowledge and awareness of orthodontics should be expanded, and that further study on students' awareness of orthodontics should be done.

References

- [1] Adegbite K, Ogunbanjo B, Ajisafe O, Adeniyi A. Knowledge of orthodontics as a dental specialty: A preliminary survey among LASUCOM students. *Ann Med Health Sci Res.* 2012; 2:14-8.
- [2] Adyasti K, Pratiwi D, Siregar E. 2021. The awareness level of orthodontic treatment among early adolescents (a survey among students of 111 public Junior High School, Jakarta). *Journal of Dentomaxillofacial Science* 6(1): 5-9. DOI: 10.15562/jdmfs.v6i1.1112
- [3] Ajayi EO, Ajayi Y. Attitudes to malocclusion in a Nigerian school population. *JMBR J Med Biomed Sci* 2006; 5:16-23.

- [4] Al-Sarheed, M.; Bedi, R.; Hunt, N.P. The views and attitudes of parents of children with a sensory impairment towards ortho-dontic care. *Eur.J. Orthod.* 2004 ,2, 87–91.
- [5] Atram Harish, Jakati Sanjeev, Namrata Khetal, PV Hazarey, Mrunal Aley4, Achint Chachada and Mugdha Mankar. Survey on awareness about orthodontic treatment in general population of nagpur district. *Int. J. Adv. Res.*2017; 5(3), 500-504.
- [6] Bala M, Braimah RO, Taiwo AO, Sulaiman AO, Sulaiman KA, Bawa AT, et al. Evaluation of awareness, knowledge, and approval of orthodontic treatment among dental patients in Northwestern Nigeria: A cross-sectional study. *J Prim Care Dent Oral Health* 2023; 4:31-5.
- [7] Batista KB, Thiruvenkatachari B, Harrison JE, O'Brien KD. Orthodontic treatment for prominent upper front teeth (Class II malocclusion) in children and adolescents. *Cochrane Database Syst Rev.* 2018 Mar 13;3(3):CD003452. doi: 10.1002/14651858.CD003452.pub4. PMID: 29534303; PMCID: PMC6494411.
- [8] Essamet M, Darout IA. Awareness and behavior related to orthodontic treatment among Jazan University students, Kingdom of Saudi Arabia. *J Dent Oral Hyg* 2016; 8:12-7.
- [9] Farooq A, Khan VA, Hafeez SD, Shah SMH, Afsar M, Kiani HG. Awareness of Orthodontic Treatment among Primary, Middle, and High School Teachers in Pakistan. *J Pak Dent Assoc* 2023;32(1):13-16.
- [10] Mahajan BK. Social Environment. *Textbook of Preventive and Social Medicine.* 1st Ed. New Delhi, Jaypee Brothers Medical Publishers (P) ltd 1991;29-35.
- [11] Muqtadir Quadri S, Thilagrani P, Dhanyasi A, Mongia J, Agrawal A. Awareness towards orthodontic treatment in central Indian school children. *Sch J Dent Sci.* 2015; 2:45-8.
- [12] Pandey M, Singh J, Mangal G, Yadav P. Evaluation of awareness regarding orthodontic procedures among a group of preadolescents in a cross-sectional study. *J Int Soc Prev Community Dent.* 2014; 4:44-7.
- [13] Pratelli, P.; Gelbier, S.; Gibbons, D.E. Parental perceptions, and attitudes on orthodontic care. *Br. J. Orthod.*1998 ,25, 41–46.
- [14] Rajasekaran UB, Paul S, Sam G, Sridharan K, Venkatachalam N, Prasad SMV. Evaluation of Perception and Awareness regarding Orthodontic Procedures among Subjects attending a Teaching Dental Institution. *Int J Oral Care Res* 2017; 5:206-8. Study procedure.
- [15] Siddegowda R. An epidemiological survey on the awareness towards orthodontic treatment among middle school and high school children of Karnataka state. *J Cell Sci Ther.* 2015; 6:10-2.
- [16] Siddegowda R. Evaluating the awareness of Orthodontic treatment mong school children of different Socio-economic grounds. *International Journal of Scientific Research.* 2013;2(7):370-371.
- [17] Tessarollo, F.R.; Feldens, C.A.; Closs, L.Q. The impact of malocclusion on adolescents' dissatisfaction with dental appearance and oral functions. *Angle Orthod.*2012 ,82, 403–409.
- [18] Thornberg MJ, Riolo CS, Bayirli B, Riolo ML, Van Tubergen EA, Kulbersh R. Periodontal pathogen levels in adolescents before, during, and after fixed orthodontic appliance therapy. *Am J Orthod Dentofacial Orthop* 2009; 135:95-8.
- [19] Zakirulla M, Almubarak H, Fageeh SN, Alghothimi AA, Alqahtani SK, Alqahtani FM, et al. Awareness and behaviour related to orthodontic treatment among school children in Aseer region, Kingdom of Saudi Arabia. *Open J Stomatol.* 2019; 9:87.