Deanship of Graduate Studies

Al-Quds University

Quality assessment of the services

provided at the Faculty of Dentistry – Al Quds University

Tarek Haytham Rabi

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Quality assessment of the services

provided at the Faculty of Dentistry – Al Quds University

Prepared by:

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A thesis submitted in partial fulfillmnet of the requirements for the degree

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Thesis Approval

Quality assessment of the services provided at the Faculty of Dentistry – Al Quds University

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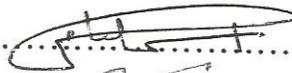
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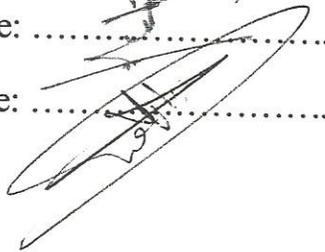
Jerusalem – Palestine

2013

Declaration

I certify that this thesis submitted for the degree of masters in policies and health management is the result of my own research, except where otherwise acknowledged and that this thesis (or any part of the same) has not been submitted for a higher degree to any other university or institution.

Tarek Rabi

Date:

Signed:

Acknowledgement

I would like to express deep gratitude to my mater thesis supervisor Dr. Asma Imam for her dedication and guidance during writing my master thesis.

I would also like to extend my deep gratitude to the administration of the university represented by Professor Nusseibeh for his support and approval for conducting this study.

Special thanks go to all faculty members at the faculty of Public Health for their commitment to delivering the highest standards of education to their students.

Special thanks are extended to all those who helped in this thesis.

Dedication

To all the people who supported me in and during my work on this thesis

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Abstract

Background

The education sector in Palestine is facing many challenges especially in learning institutions that are offering health-related specialties. West Bank, regardless of its small size, has two dental schools and the number of dental students and graduates is rapidly increasing. The number of qualified specialists in various health fields, particularly dentistry in this region is remarkably low.

Purpose

This study assessed the quality of services that the dental school at Al Quds University offers from the perception of patients, graduates, and students.

Methods

A cross sectional descriptive design was used. Data was obtained from 100 patients that have been attended to the dental health facilities, the year 2010-2011 graduates (83 graduates), and fourth and fifth year dentistry students(2011-2012) (175 students)through questionnaires.

Findings

Patients were dissatisfied by the receptionist and the waiting area. 56% of the patients agreed that AQU students explained the treatment plan. Only 27% of the patients felt that there are things about the dental care at AQU dental clinics that could be better. 41% agreed that AQU students give the patient the opportunity to speak about their problems. 57.8% agreed that they are not concerned about feeling pain when they go for dental care at AQU dental clinic. 65% of patients

agreed that there should be more effort invested to prevent pain that patients feel when receiving treatment at AQU dental clinics.

Graduates reflected inadequate clinical training and thus felt less prepared for clinical life in performing deep scaling and root planing, performing root surface restorations, perform multi rooted root canal treatment, replace teeth with partial dentures, perform orthodontic treatment planning, manage anxious patients, manage chronic orofacial pain, and prevent and manage dental emergencies. Graduates reflected better preparedness in general patient management and practice management than in clinical related matters. They also perceived themselves weaker in clinical aspects than theoretical aspects. Graduates reflected they are able to handle medical emergencies better than dental emergencies. The majority of the graduates in this study do not believe that graduates from the other dental school in Palestine received better theoretical education but rather believe they received better clinical training that at AQU.

Students indicated that teaching is more teacher oriented and a lot of teaching time is wasted. They also indicated the atmosphere during the clinical sessions is more stressful than theoretical sessions. Strong areas which had a mean >2 in the student results included the fields of: the teachers are knowledgeable, I have good friends in this school, I am too tired to enjoy the course. On the other hand weak areas with a mean < 2 were: there is a good support system for students who get stressed, this school is well timetabled. Notably most of the students' social self perceptions, perceptions of teachers and academic self perceptions have means >2. Moreover, most of the students' perceptions on learning and the atmosphere have means < 2. According to most of the students (56.7%) the teachers are knowledgeable (M = 2.65).

Conclusion

More focus should be given to the facilities and equipment for clinical training and more care to patient and student needs. More clinical training in the weak fields should be implemented while implementing students oriented, problem based, and evidence based educational tools.

تقييم جودة الخدمات المقدمة في كلية طب الأسنان -جامعة القدس

الملخص

اعداد: طارق رابي

اشراف: د.اسمى امام

خلفية البحث

يواجه قطاع التعليم في فلسطين العديد من التحديات خاصة في المؤسسات التعليمية التي تقدم التخصصات ذات الصلة بالصحة. في الضفة الغربية، بغض النظر عن صغر حجمها، كليتان تدرسان طب الأسنان وعدد طلاب وخريجي طب الأسنان في تزايد سريع. عدد المختصين المؤهلين في المجالات الصحية المختلفة، وخاصة طب الأسنان في هذه المنطقة منخفض بشكل ملحوظ.

الاهداف

قيمت هذه الدراسة نوعية الخدمات التي تقدمها كلية طب الأسنان في جامعة القدس من تصور المرضى، والخريجين، والطلاب.

اجراءات البحث

تم الحصول على بيانات من 100 مريضا من المرضى الذين حضرو إلى عيادات طب الأسنان في جامعة القدس، خريجو عام 2010-2011 (83 خريجا)، وطلاب طب الأسنان السنة الرابعة والخامسة (2011-2012) (175 طالبا) من خلال تعبئة الاستبانات في دراسة مقطعية وصفية.

النتائج

عبر المرضى عن عدم رضاهم من منطقة الانتظار وموظف الاستقبال. 56% من المرضى وافقوا بان طلاب طب الاسنان قاموا يتفسير خطة العلاج . 27% من المرضى شعرو بان هناك امور يمكن تحسينها في العلاج. 41% من المرضى وافقوا بان الطلبة يعطوهم الفرصة للحديث عن مشاكلهم . 57.8% وافقوا بانهم

غير قلقون من الالم عند توجهم لعلاج اسنانهم في عيادات جامعة القدس. 65% من المرضى وافقوا بانه يجب بذل المزيد من الجهد لتجنب الالم خلال تلقي العلاج في عيادات جامعة القدس.

عبر الخريجون عن نقص في التدريب السريري و بذلك شعروا انهم غير جاهزون في مجالات : التقليح العميق , الحشوات على اسطح الجذور , علاج العصب لاسنان متعددة الجذور , تعويض الاسنان باطقم جزأية , عمل تخطيط العلاج في تقويم الاسنان , التعامل مع المرضى القلقون , التعامل مع الاوجاع المزمنة في منطقة الوجه , و تجنب و التعامل مع طوارئ طب الاسنان.

عبر الخريجون عن جهوزية افضل في التعامل العام مع المرضى , وادارة العيادات. كما و شعر الخريجون انهم اضعف في الشق العملي من الشق النظري . و عبرو انهم افضل في التعامل مع الطوارئ الطبية مقارنة مع الطوارئ السنية . معظم الخريجون عبرو ان الخريجون من الجامعات الاخرى تلقو تدريبا عمليا افضل منهم لكن هذا لا ينطبق في شق التعليم النظري.

وأشار الطلاب أن التعليم متمحور حول الاساتذة ويضيع الكثير من الوقت في التدريس. وأشاروا أيضا ان الأجواء خلال الدروس السريرية هي أكثر إجهادا من الدروس النظرية. وشملت المناطق التي كانت ذات نتائج قوية بمتوسط < 2 في نتائج الطلاب مجالات: المعلمين هم على دراية، ولدي أصدقاء جيدين في هذه الكلية، وأنا متعب جدا للاستمتاع بالدراسة. على غيرها من المناطق الضعيفة بمتوسط <2 : هناك نظام دعم نفسي جيد للطلاب الذين يجهدون ، تسير الكلية وفق جدول زمني جيد.

الخاتمة

ينبغي إعطاء مزيد من التركيز إلى مرافق ومعدات التدريب السريري في كلية طب الأسنان – جامعة القدس. والمزيد من الرعاية للمريض واحتياجات الطلاب. وينبغي تنفيذ مزيد من التدريب السريري في المجالات التي شعر الخريجون في ضعف فيها، و استخدام الاساليب التعليمية المبنية على الادلة و الموجهة لاحتياجات الطلبة.

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Abbreviations

AQU – Al Quds University

DREEM – Dundee Ready Educational Environment Measure

DSQ – Dental Satisfaction Questionnaire

HKU – Hong Kong University

CHAPTER ONE

Introduction

1.1 Introduction

It is widely acknowledged that quality higher education is key to national development. Higher education has acquired a special importance in all countries worldwide because of its capacity to produce positive change in all sectors of the society by contributing to human resource development for the other sectors (Stella & Gnanam, 2004). Realizing this potential however requires good governance as well as management by the institutions of higher education. The quality of education must equip the graduates with the right skills and knowledge necessary to practice in the different sectors of the society (Sallis, 1996).

Higher education in Palestine has experienced rapid development over the last three decades and is facing expansion problems due to the increasing number of high school graduates. In spite of the obstacles that are associated with its relatively short history, higher education in Palestine has serviced the Palestinians well in meeting the rising need for younger generations with tertiary education.

In Palestine, higher education is governed by the Ministry of Education and Higher Education through the following:

1. Council of Higher Education

2. Accreditation and Quality Assurance Commission

3. Council for Scientific research

The Palestinian higher education institutes, however, face many unique challenges. These include the adversity imposed by occupation, uncertain and very limited resources available for

higher education institutes in the country, shortage of qualified and experienced teaching staff, and travel limitation both within and out of the country. It is worth to note that despite the strong economic as well as political constrains that the country faces, Palestinian higher education institutes have been able to find their own ways of addressing these difficult challenges and developing.

While universities in Palestine are making attempts to reduce expenditure per student, not much effort is being directed at improving efficiency or preserve quality. In 2001, the Palestinian Higher Education Strategy emphasized that there was great need to put measures in place in order to reverse the rapidly declining quality of higher education in the country. According to the report, one of the main causes of the decline was the fact that enrolment had doubled yet the staff remained the same. No substantial investment to upgrade the institutions' facilities has also been made. This greatly compromised the quality of education provided to students in higher education institutions in Palestine.

Though literacy level is considerably high, as shown in a survey report in 2008 by the Palestinian Ministry of Education and Higher Education (MoEHE) on their official website, the education system in Palestine is very challenging considering its instability and that it is not an independent country. The challenge is being felt in the higher institutions of education especially in medicine and dentistry. In the recent past, three dental schools were hoisted in Palestine and in 2000/2001 two of the schools located in West Bank were inaugurated both offering dentistry bachelors programs. The Ministry of Education and Higher Education (MoEHE) is playing a dormant role in regulating the rapid growth of student numbers in these schools. The quality of services will not be adequate if there is no continuous assessment and if the faculties concerned

cannot accommodate the increasing number of students. Secondly, unemployment levels for the large number of dentists graduating year after year are tolling up.

Assessing quality of education in higher education institutions is important for various reasons. Higher education is very important as it imparts in-depth knowledge as well as understanding into students in order to advance them to new knowledge frontiers in different subject domains (Nigvekar, 1996). It involves learning and having more and more knowledge about less subjects (specializing). Higher education enables students to broaden their intellectual powers within narrow specialization while at the same time giving them a wider perspective of the world. Higher education is argued to have four main concepts (Barnet, 1992)

1. Production of skilled and qualified human resources. This concept views higher education as a process in which students are seen as products that get absorbed into the labor market. Higher education is therefore the input to the growth as well as development of industry and business.

2. Training for research career. This concept views higher education as a process that is prepares qualified researchers and scientists who will continuously develop the knowledge frontiers. Quality in this concept focuses on how academic rigor is transmitted in order to do quality research and on research publications.

3. Efficient management of the provision of teaching. Many people perceive teaching as the core of all educational institutions. This concept asserts that by improving the quality of teaching, higher education institutions facilitate efficient management of teaching and learning provisions hence increase the completion rate among students.

4. Extending chances in life. This concept views higher education as an opportunity for individuals to participate in development programs through an education mode that is flexible and continuous.

It is important to understand that these concepts are all integrated and not exclusive hence give an overall or general picture of what higher education is with regard to its functions. The activities of universities and colleges in fact demonstrate research, extension and teaching as the main functions of higher education (Pillai, 2006). The functions and importance of higher education to the business, industry and development of a nation make it very necessary to ensure that it is quality (Pillai, 2006).

Quality refers to the totality of the characteristics of a service that enable it to satisfy the stated or intended needs (Harvey, 1998). In our case, do the graduates from the dentists department bear the characteristics that are desired of graduate dentists? According to Harvey & Green (1993), quality can be defined in terms of the following five approaches;

a) Exceptional- passing and exceeding the required standards

b) Consistency –seeks to make quality a culture and is usually displayed through getting things right the first time (zero defects)

c) Fitness for purpose- service must meet the stated purpose, satisfaction and specifications

d) Value for money- this is usually exhibited through efficient and effectiveness

e) Transformative- must bring about change that is qualitative in nature.

Assessing the quality of services provided at a faculty in a higher education institute ensures that the services meet the mentioned characteristics hence the product (which is the student) is ready for the job market.

Several indices such as student/teacher ratio, journal/teacher ratio, and percentage of teachers with certain qualifications (holding certain degrees) and trends in faculty promotions have severally been used to assess the quality of higher education in colleges and universities. While teacher/student ratio is widely accepted as an important variable that affects quality, the other indices are also appropriate. According to Hashweh & Hashwehan (2003), there is need for more studies to be conducted with regard to quality. The authors argue that further studies should look at program or department as unit of analysis. The authors suggest that teacher quality can be assessed by examining the institutions the faculty got their training, and the quality as well as quantity of their publications. Quality of teaching can be assessed by scrutinizing the references, course outlines, student evaluations, activities and assessments (Hashweh & Hashwehan, 2003). Access to journals, books, facilities, laboratories and work experiences can also be assessed. This could also include rates of acceptance to foreign countries for work or advanced studies, employer satisfaction and measures of learning (Hashweh & Hashwehan, 2003).

In 2002, a self assessment has been conducted at the faculty of dentistry at Al Quds University and later it was followed by external assessment. In the latter one, an expert from outside the faculty evaluates the faculty after studying the documents of the internal assessment and meets with 1 or 2 students from each academic year and faculty members. In the self evaluation, the faculty appoints a steering committee of at least 5 members to conduct the evaluation and members must include besides to faculty members administration members and students. The committee reviews its terms of reference, evaluation standards and guidelines for developing the review approved by the national commission. The committee collects related data and may involve other individuals and groups as necessary in this evaluation. After asking the ministry of education and higher education for the results they did not supply the researcher with

the results. However the evaluation in 2002 will be irrelevant to the study because at that time the faculty was only 2 years old meaning that the students were undergoing basic sciences courses which are delivered through other faculties at Al Quds University.

It is with regard to this that the researcher conducted a quality assessment of services delivered at the faculty of dentistry at a university in Palestine. This study was the first comprehensive study involving all the faculty members, a larger number of students, graduates, and patients that were never included in previous evaluations. It's findings will also provide recommendations on how quality of services provided by the faculty can be improved. Both qualitative and quantitative research design was used. The findings will be used to provide recommendations on how the Faculty of Dentistry can improve the quality of its services.

1.1 Problem Statement and Significance of the Study

The faculty of dentistry at Al Quds University was established in 2000. There was no comprehensive evaluation conducted of the quality of services or the satisfaction of the stakeholders since its establishment.

This study would be the first comprehensive study involving a larger number of students, graduates, and patients that were never included in previous evaluations. Its findings would also provide recommendations on how quality of services provided by the faculty can be improved. The findings would be used to provide recommendations on how the department can increase the quality of its services

The results and contributions from this study might be of interest to Al Quds University for their future planning and quality control and improvement.

1.2 The Purpose of the Study

To investigate the quality of services delivered at Al Quds University faculty of dentistry form the perception of the main stakeholders: Patients, graduates and students

1.3 Objectives of the Study

1. To assess the patient satisfaction towards the services received at the dental teaching facility.

2. To identify how novice dental graduates of Al Quds University perceive themselves to be well prepared for dental practice.

3. To investigate students' perception of the quality of services provided by the faculty of dentistry at Al Quds university.

1.4 Assumptions

The following assumptions were set the beginning of the study:

- Cooperation from Al Quds University to conduct this study

- Cooperation from the Faculty of Dentistry staff members and students

- Cooperation and high response rate from the graduates of the year 2010-2011

- Sufficient numbers of patients to participate and fill in the study questionnaire

1.5 Limitations of the study

Limited literature was found concerning the study topic. Data collection took more than what was expected. After doing factor analysis some fields were omitted.

1.6 Feasibility of the study

The interest of the researcher in the education field of dentistry and being a part time teacher at the Faculty of Dentistry at Al Quds university were an extra push towards conduction and completion of this study.

The cooperation from Al Quds University administration to conduct studies and research that aim at assessing quality of services provided to the stakeholders has eased the conduction of this study and allowed free access to information and data needed.

1.7 Time Framework

Date	Activity
Sept 2011- Jan 2012	Proposal writing. Identifying Problem Statement, Objectives, Literature Review, Selecting the research design, Methods for data collection, Methods for Analysis, Identifying study limitations, Developing study questionnaires
Feb 2012 – March 2012	Conduction pilot study and analysis of data. Interviewing target groups and questionnaire distribution
March 2012	Data Analysis
April 2012- Feb 2013	Writing the final report

CHAPTER TWO

Review of Literature

2.1 INTRODUCTION

Quality is a strong central term which affects basic aspects of lives. In general view, the position of quality in defining the success of an individual may simply be dismissed. However, quality basically determines the acceptability hence promoting high degrees of satisfaction. Defining the concept of quality may be rather challenging. The concept of quality can be viewed as that of good or beautiful; meaning that, realizing it is quite simple but defining it or explaining it clearly is somehow difficult. The Institute of Working Future (IWF), points out that; the presence of quality is hardly acknowledged, nevertheless, its absence is clearly noted (IWF, 2012). Generally, the World Health Organization provides us with the definition of the term quality by describing it as the process of accomplishing expectations and desires of both patients and health service staffs (WHO, 2000).

It has been acknowledged that, people respond positively to good or quality customer services, with the common knowledge defining it that; it's easier to keep customers than getting new ones (Hunt, 2005). Therefore, quality accounts for this saying by ensuring that, client's loyalty is established and maintained. However, Deepaka and Manish (2011), observe that only quality of tangible goods can be measurable but the intangible nature of quality in services renders it difficult to measure. Therefore, with the services it's only with experience that client's perception towards a service offered can be realized (Deepaka and manish 2011). Under health care docket, quality care is strongly believed to be of great importance to patient's well-being and financial survival hence here, quality is taken to be more than just a concept (Urquhart,

1999). The significance of quality in health care can never be undermined as it's believed that; certain degrees of quality in health services may increase the likelihood of desired health outcome (Urquhart, 1999). American Medical Association identifies quality as the degree in which health care examinations defines the probability of optimal patient outcomes (AMA, 1991).Quality in health care may be considered to be functional or technical whereby functional accounts of how patients receive services while technical defines the nature of care delivery (NHS Scotland, 2007).

There has been an increasing focus, both nationally and internationally, on quality of education in higher education learning institutions. The reason for such focus is for governments to ensure that the money spent in education is well accounted for. It is a way of ensuring accountability in the education system. Different institutions develop different models to ensure accountability and quality education. One most used basis of models is the quality assurance system. According to Orsingher, an institution should develop an internal quality assurance protocol (2006). This will offer the model that will be used to ensure quality in the education programs. An example of such a model is a quality assurance cycle system with the aim of guaranteeing quality of study programs. The cycle has four steps:

1) Evaluation

2) Development of improvement plans

3) Implementation of improvement plans

4) Evaluation of the effectiveness of the improvements made

From the last evaluation, the main elements required to ensure quality are identified, and the cycle of implementation to checking for effectiveness continues (Orsingher, 2006). Some of the

elements of quality assurance in education are; internationalization, study programs and its units, outcomes of the learning process, teaching staff, and means and facilities to organize and deliver the program (Orsingher, 2006).

Sharma also indicates that schools must optimize their potential to ensure quality in education (2006). Methods used to achieve quality are such as total quality management, continuous quality improvement and total quality education. There are also standards that are put in place that serve nations at national and international levels. Institutions seek certification for these standards to ensure that they offer quality education. To be certified, certain conditions, which aim at achieving quality, have to be met (Sharma, 2006). There is also Donabedian's framework of ensuring quality assurance. This framework was developed to ensure health care quality, and the quality is measured by analyzing process, structure and outcome. Each domain has a predetermined criteria used to measure performance of the past. Quality education at the dental faculty can also be achieved by using the models' principles. The structure in Donabedian's model includes the integrity of the infrastructure to determine if the resources available are sufficient to deliver the targeted quality efficiently. Examples of resources that the structure focuses on are informational resources, human resources, technological resources, and facility resources. The structure is defined as the instrumentalities of which the structure is the product, and the settings in which health care takes place (Daniels, 2004). Healthcare in this case can be replaced by any service for example, customer service in business, education, and so on. In this case, the focus is on quality of education. The structure in which education takes place should have the integrity to determine the efficiency and sufficiency of the resources that will be used to achieve quality. Processes are the activities that are used to deliver the services. These are assessed against benchmarked processes that grade their quality. In education, there are

delivery programs, curricula, and designs that can be used to deliver intended education. Outcome is the ultimate measure of quality. In healthcare, Donabedian defined outcome as client's survival, recovery and restoration of function. In achieving education quality, the outcome will be determined by the quality requirements, for example, the level of student competence acquired after education, skills, and professionalism (Daniels, 2004).

Quality in education entails a complex and multifaceted nature of concept. Most commonly it refers to: effectiveness, efficiency, and equity in performance. Quality in education can be defined under many concepts. It may be viewed as an outcome which leads to knowledge, attitude and skills which are linked to the objectives of education and positive participation in society (Rasheed, 2000). According to Zhang (2010), quality of education is the assessment of educational level and effects. In addition, the output in the quality of education emerges from the quality of the trained individual (Zhang, 2010). Education aims at equipping the trainee with basic qualities necessary for giving out quality services. Therefore, it's strongly believed that, the quality in education defines the quality in service. This becomes true since to some degree quality service entails a clear understanding and follow up the necessary professional requirements and regulations.

Parri 2006, summarizes quality in education under his broad approach which considered it as: an exceptionality in excellence, zero errors, fitness for purpose, transformational or reshaping tool, as a threshold and as enhancement (Parri, 2006). Quality in education promotes the realization of best achievement an individual can achieve. In addition, it ensures elimination of error through equipping health care providers with the necessary knowledge and skills for avoiding or minimizing errors hence making them fit for work. Lastly, quality education

transforms the individual from their traditional thinking by modeling them to suit their professional roles and in the process their understanding of their area of specializations is enhanced.

Assessment of dental education is critical for successful education with regard to the knowledge and skills obtained from learning and professional values defining competence in dentistry practice (Albino, et al., 2008).

The student's perception of their learning environment is of paramount importance as it is the most reliable evaluation method that can be used to improve the learning standards in a tertiary learning institution (Prayoonwong & Nimnuan, 2010).

In the real sense, the strengths and any weaknesses of the particular course get to be identified thus equipping the students with vocal ability with which they can share their learning experience (Prayoonwong & Nimnuan, 2010).

The learning environment in a faculty of dentistry exerts a lot of influence on the effectiveness of the training given to students, explaining why different students carry varied perceptions; they do so independently and driven by the prevailing conditions (University of Hong Kong, 2002).

2.2 Patients' Perception of University Dental Services

The importance of patients' perception of the dental services can be stated as giving the faculty a proper feedback on the effectiveness of the dentistry services being provided to clients (Stewart et.al, 2006). It is also crucial for revealing the weak points which need immediate attention, for an improvement to be realized.

There are certain aspects patients were looking at the college clinics when they visit such facilities such as what kind of educational guidance they will get when they go there for treatment. Knowing the value of the treatment they are getting in comparison to the cost they will incur will also make them more satisfied. Patients either trust or doubt the services at a dental school according to their quality and level of professionalism exhibited by the pre-clinical dentists (Mascarenhas, 2001).

Furthermore, the kind of explanation those working at the clinics make such as the advantage of periodical treatment, the kind of longevity they will get for the treatment they are paying for, what other treatment options are available etc., will all make them more satisfied with the service they are getting. Patients also have stated that when they go to college dentist clinics and deal with students, as long as they find the care provided to be of high quality, they do not have problem going there again. Factors such as educating them about optimal oral care will make them to be more interested in the service such faculty clinics are providing.

One of the main components of quality care is client/patient satisfaction. This includes respecting the client/patient and understanding their needs and providing the service based on that. (Staniszewska and Ahmed, 1998).   Other qualities the patients visiting college clinics are looking for are demonstration of outstanding clinical skills.   In addition, they get more

satisfaction when the practitioners are good in dealing with their anxiety and fears, where they would provide pain control when required. Interpersonal skills will make them return customers are balanced physical and emotional composure, open and honest communication, appropriate courtesy, and following proper procedures.

It is all about how much the clients and patients get satisfied with the dentistry services offered at the particular medical school (Hashim, 2005). Patients are also likely to have a positive perception of the faculty of dentistry if treatment is accompanied by much respect and a courteous reception (Priya, Chauhan, & Kumar, 2011). For instance, more precise and confident the dentist is on his explanation; the more likely the patient is to get satisfied (Karydis et.al, 2001).

Furthermore, surveys conducted on patients had shown that what Walsh (1993) had introduced as the three broad components of professionalism such as proper appearance, behavior, and conversion had been held qualities patients are looking for in their dentists, whether they are students or practitioners. Furthermore, when patients are convinced that the caregiver is well groomed, uses a professional tone of voice, and is confident in what is involved they would want to discuss medical issues more openly. After being satisfied with the dentist's attractiveness and fitness to do the job properly, patients will be more willing to disclose symptoms. Consequently, patients have admitted that first impression and appearance had been two ways they can judged the probable competence of the caregiver. Magnum et al., (1997) and Taylor (1985) had attested to this same fact by stating that such nonverbal cues could have significant roles to play in affecting the comfort, anxiety, and confidence level of patients. The particular survey conducted at the University of Minnesota School of Dentistry had also taken

into consideration patients' demographic factors such as age of the patients, their gender, whether they are covered by insurance or not, and the distance they traveled to get to the dental clinic. The overall finding indicates that first impression of appearance and whether the care providers sounded professional or not would affect the comfort and confidence level of the patients, while in the process of getting the care, and eventually patients will be in a position to judge the kind of dental care they received.

Hashim (2005) conducted a study to illustrate the level of patients' satisfaction with dental services provided at the faculty of dentistry at Ajman University. Information was collected by use of a survey, and a total of 135 patients were randomly selected. Personal information about patients' use of the dental service and current visits was collected using Dental Satisfaction Questionnaire. The study results showed that satisfaction levels were high except for the location of the clinic and treatment options.

Mascarenhas (2001) conducted a study to assess the comprehensive care model compared to the traditional model considering the patient perspective. The study used patient satisfaction to evaluate the differences between the two models. Patient satisfaction was assessed using the dental satisfaction questionnaire which measures quality, pain management and subscales of access, and overall satisfaction.

2.3 Perception and preparedness of Graduate Students

"Educational experiences of graduates as primary consumers reflect the effectiveness of the educational environment." (Olupeliyawa et al., 2007*).*

Gerbert et a., (1982) had also conducted a survey among US dental graduate students to measure the adequacy of their preparedness for real life dental care practice. The findings indicated that among at least ten areas of study the graduated students felt that they were well prepared in areas such as preventive dentistry, radiology, and restorative dentistry. When looking back at the education they received in areas such as behavioral sciences, orthodontics, or real time practical management they said that their training was lacking. Furthermore, Henzi et al., (2005) had highlighted US dental schools that incorporated electronic curriculum in the programs they are offering. Nevertheless, close to one thousand dental graduate students approached to highlight the benefits of such education had stated that they are skeptical of the benefits they got from the e-curriculum, both in educational benefit and when seen from the cost they had to incur. When asked to evaluate the schools from educational benefit, emotional attachment, and the social environment it availed to them, their experience was much stronger when compared to their high school years.

Another approach upheld by most medical faculties including dental schools was to apply what Marshall (1978) developed that enabled educators in 1980s and 1990s to measure the kind of learning environment that is in place, the kind of intellectual climate it creates, the social environment it introduces, and the kind of relationship that exists between teachers and students, so that they would make adjustments wherever they are needed. The findings indicated that close to 619 graduated students from the various schools have found the environment of the various dental schools negative ascertaining that dental school students could be dissatisfied batches. Some of the reason for the dissatisfaction are students have found themselves to be the ones who have the least amount of input in what takes place in their schools. Furthermore, they have found the overall dental faculty system, especially the curriculum void of room for

improvement or modification. These are findings fully supported from data analyzed from the various surveys conducted.

McGrath et al*., *(2005) conducted a study to check if the graduates of the university of Hong Kong perceive themselves prepared for dental practice. Information about their perception was collected through postal questionnaires that were sent to University of Hong Kong graduate dentists. Inclusion criteria considered those who had been in the university's dental faculty for the last five years, which is the period between 1997 and 2001. The questionnaires had questions about the dentist career and self perceived competencies. A total of 230 students graduated during this period that was selected for the study. The questionnaire contained a series of 59 questions that assessed dental competencies in Australia and Canada. Considering the basic aspects of dentistry, most respondents felt prepared. Some of them however, felt unprepared for aspects like oral rehabilitation, oral maxillofacial surgery, orthodontics and periodontal surgery.

In order to ensure effective learning in a medical school, it is necessary to ensure an optimum 'educational environment' (Yusoff, 2012). The 'education environment' encompasses all activities within the faculty, which are significantly associated with successful learning (Lokuhetty *et al.*, 2010). Essentially, the environment has significant effects on the levels of achievement, satisfaction and success of students (Soemantri, Roff, & McAleer, 2008). The measurement of the intangible aspects of the educational environment is usually conducted by use of standardized questionnaires, which are mainly quantitative (Ostapczuk, *et al.*, 2011).

In this regard, the Dundee Ready Education Environment Measure (DREEM) provides an effective tool for evaluating the educational environment. The instrument utilizes a five-point Likert scale, with five subscales measuring students' perceptions of the educational environment.

These subscales include: (i) perception of learning, (ii) perception of teachers, (iii) academic self-perceptions, (iv) perception of atmosphere, and (v) social self-perceptions. The psychometric qualities of DREEM have been appraised in numerous medical school studies, which have proved its robustness (Lokuhetty *et al.*, 2010; Khan, *et al.*, 2011). However, pertaining to dental schools, only a few studies have been undertaken (Ostapczuk, *et al.*, 2011).

Ostapczuk et al., (2011) in their study at Dusseldorf university using the DREEM questionnaire had results ranging from 81 (plenty of problems) to 171 (excellent enviornment) with a general average of 122.95 ± 15.52 (more positive than negative).

2.4 Perception of Dental Students

The quality of education offered at the faculty of dentistry is a key factor on the students' perception of their learning environment. For a positive perception, learning should be accompanied by relevant handouts, and more so, the availability of skillful teachers (Kossioni et.al, 2010). This will tend to foster the students' trust in their course and future career development. It is thus very important to assess the quality of education in a faculty of dentistry since by so doing the students' perception will be known thus making improvements on the exhibited weak points (University of Hong Kong, 2002).

When looking at the students perceptions, for those at the third and fourth(last 2 years of study) year level, interpersonal skills, the availability of the teachers, the kind of relation there is between students and teachers are important factors they are looking at (Mayberry, 1973). Furthermore, students perceive teachers should have the ability to create positive conditions for clinical learning, effective communication skill with both students and patients, demonstrating clinical competence in the part of the teachers, and professional behavior are what they perceive

to be positive and supportive in their effort. Other positive behavior students want to see in their teachers' activity are professional competence, a personality that is approachable, being punctual for classrooms, making themselves available for students, being consistent in what they are doing, being practical in their assessment of the students ability, and understanding certain students limitations. Consequently, even if students have certain perception of their interaction with their teachers and have certain expectation, Heinz et al., (2005) had found out that in general students are not satisfied in dental colleges. According to findings, this dissatisfaction could be used to improve the curriculum of dental schools. According to Bertolami (2001), the dental education might require revision and revamping, simply because the students perception of dental school could be negative.

Furthermore, according to research conducted by Jain et al., (2010) among pre-clinical and clinical students had shown that both groups perceive student interaction and supportiveness as favorable. When looking at flexibility and emotional climate it was at the lowest level for pre-clinical students. Supportiveness by both the faculty and staff was at the highest list for all students. Stress was also a concern among pre-clinical students who assumed it could get worse when they start their clinical study, raising a concern that students might develop negative attitude toward dental education early on.

When talking about organization what students look for were factors such as getting clear explanation from their teachers, the course material they were working with is well prepared, lectures compel them to take notes, and the objectives attached to each course make sense. The reason they attributed for upholding such values is among many advantages, it enhances the

students' memory of the subject matter, and hence effective organization will enhance their preparedness to become effective practitioners (Myers, 1977).

The same applies to enthusiasm where if teachers are dynamic, energetic, and if possible humorous in their approach of the subjects, they can make the presentation interesting, and that adds to the memory factor of the students. The students had valued eye contact as very important and the teaching process gets much better with enthusiasm, because it will force compliance among students, while the intimacy created could lead to better comprehension of the subject matter, as well as better recalling ability as witnessed by many sources such as (Sherwood, 1987). Such positive personal interactions with teachers could also serve as cues for points that are important and could keep the students interested in what is being taught.

Stewart et al., (2006) conducted a longitudinal study to check the Canadian dental students' perceptions of their learning environment and psychological functioning over time. The aim of this study was to investigate the changes in the University of Manitoba students' of perceptions about their learning environment. The study also explored the changes in students' psychological functioning over time.

Methods used to collect data included Symptom Questionnaire (SQ), State Self Esteem Scale, Learning Environment Survey, and Ways of Coping Checklist. Data collection was done over a period of four years with records noted at the beginning, midpoint and end of each year. The sample was 28 participants (All year 1 dentistry students). This group had thirteen female and fifteen male students, and the mean age was 26 with a range of 24-40. The students had a positive perception about the dental school being a positive learning environment over the entire four year period. Students' perceptions recalibrated positively in areas of opportunities for

outside interests, and course relevance in the first months of the first year. Students'

psychological functioning reduced over time with decreased self esteem, decreased levels of

problem coping abilities, more depression, anxiety and hostility, and increased wishful thinking

and avoidance as new coping strategies.

2.5 Summary

This chapter covered the review of literature with theoretical and empirical background.

This included patient, graduate, and student perception and satisfaction models and studies.

Chapter Three

Conceptual Framework

3.1 Introduction

In order to understand significant variables defining the quality of service offered at the faculty of dentistry- Al Quds University, a critical literature review relevant to the provision of quality services was done. Concepts raised by these studies were utilized in developing a conceptual framework of this study. Quality services cannot be simply assessed by considering a single factor. A number of factors will define whether the service rendered is of good or poor quality. Three conceptual frameworks were formulated for this study as explained in figures 3.1, 3.2, and 3.3 below.

Factors explaining the quality of service at the Faculty of Dentistry- AQU

In this study three conceptual frameworks are proposed. The following are brief definitions of each of the variable in the conceptual framework.

3.2 Patient satisfaction framework (figure 3.1)

Perception: One's feeling towards something. Perception will enable us to measure the degree of quality of services offered by analyzing what different parties feel towards them.

Quality: This is the degree of excellence of the service offered. Assessing quality is important for explaining customers' satisfaction and safety

Accessibility: Defines the location of the clinic and the procedural requirements before a client can be treated. It's Important for evaluating the conveniences in the treatment process.

Pain management: The approach applied to ease the pain or suffering.

Affordability: The pricing of the services offered. Are the charges customers friendly? It's Important for defining customers satisfaction in term of charges.

Availability; the state of being at hand when required (Princeton, 2012)

Continuity of care: Explains if the patients served by the some doctors every time they visit the clinic.

Characteristics and appearance of the provider: Important for helping the researcher measure the personal factors influencing the quality of services provided.

3.3 Graduate perception of their preparedness for dental practice (figure 3.2)

Periodontology: the field of dentistry that deals with the health of the gums and the tooth supporting tissues.(Michigan dental association)

Conservative Dentistry: the field of dentistry that deals with dental fillings.(Wikipedia)

Endodontics: the field of dentistry that deals with root canal treatment.(Michigan dental association)

Prosthodontics: the field of dentistry that deals with rehabilitation and maintenance of oral function by replacing missing teeth either with removable dentures or fixed crown and bridge.(Michigan dental association)

Orthodontics: the field of dentistry that deals with alignment of malpositioned teeth by brackets or removable wire appliances.(Michigan dental association)

Oral maxillofacial surgery: the field of dentistry that deals with extractions and surgeries involving the oral cavity and surrounding structures. (Michigan dental association)

Local Anesthesia: inducing absence of sensation at a specific part of the oral cavity. (Wikipedia)

3.4 Student perception of their learning environment (figure 3.3)

Perception: One's feeling towards something (Wikipedia)

The questions under these fields examined the perception of the students in the fields of the student perception of teaching, teachers, atmosphere, academic self perceptions, and social self perceptions.
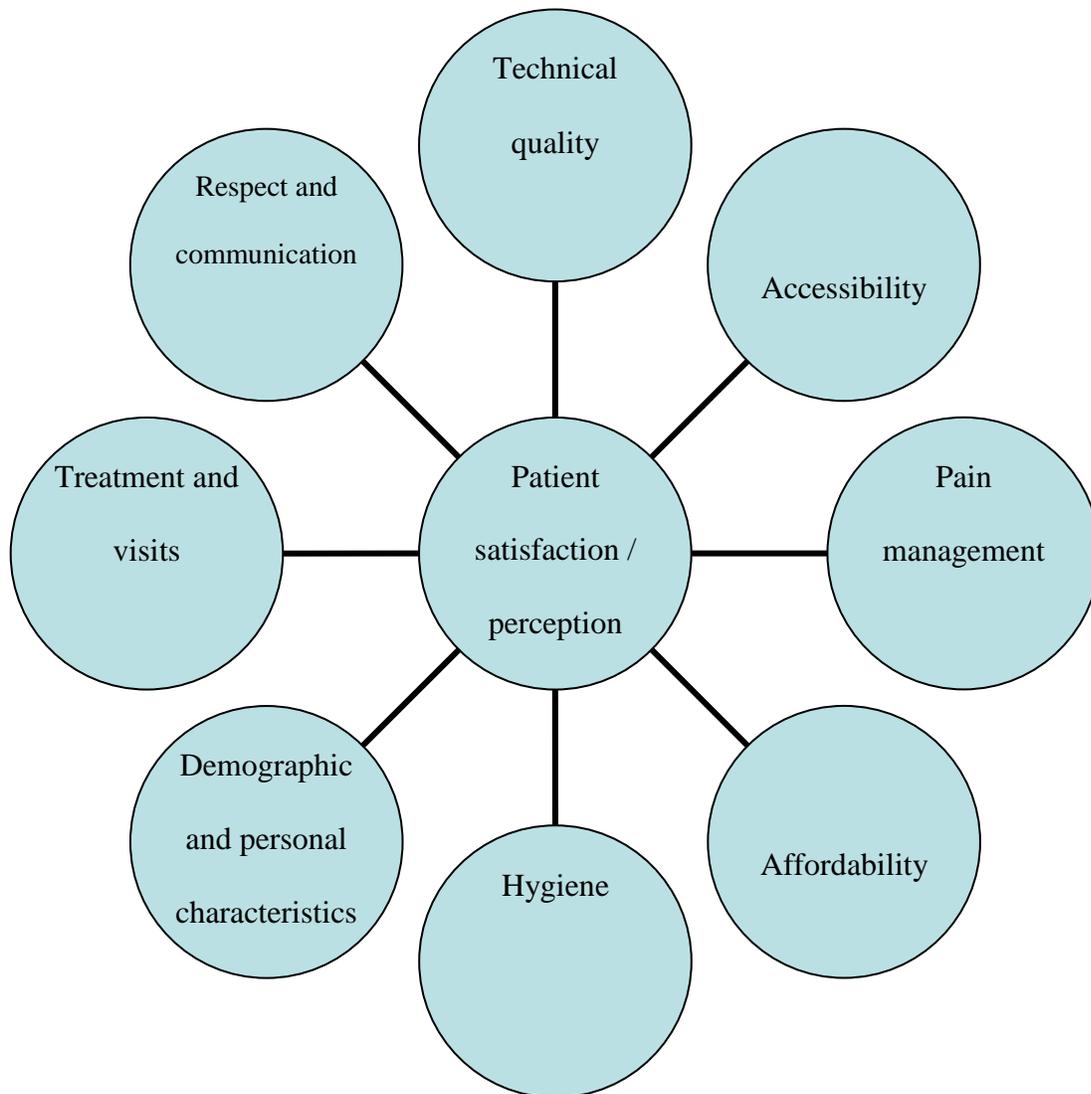
Figure 3.1 Factors affecting patient satisfaction with quality of services

Figure 3.2 Graduates' perception of their preparedness for dental practice
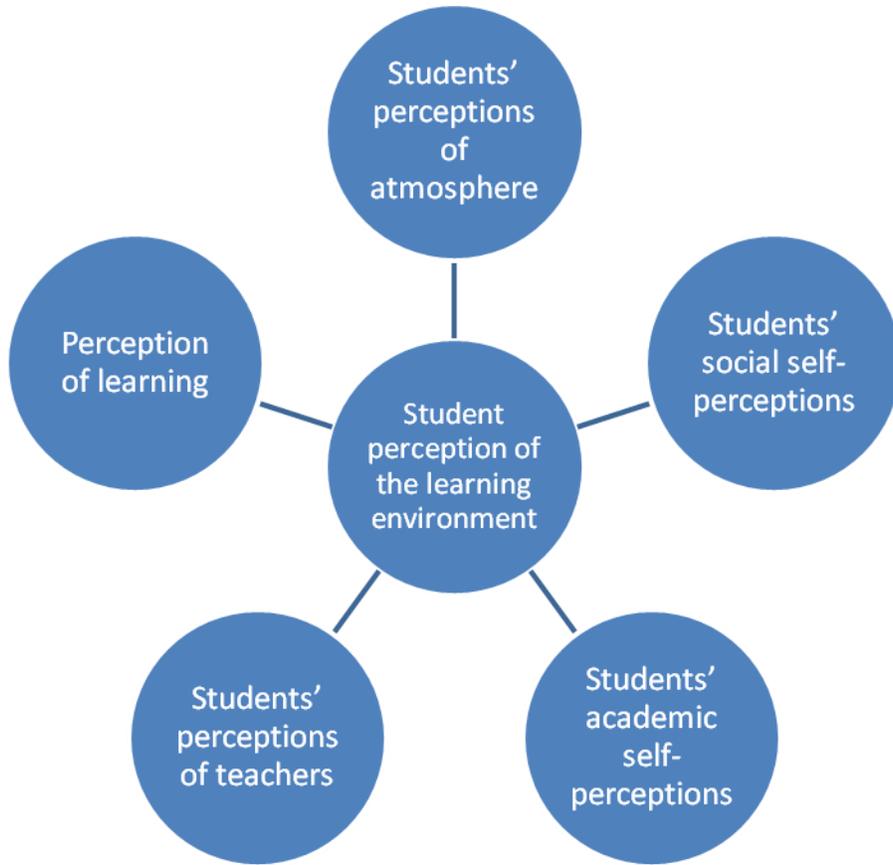
Figure 3.3 Student perception of the learning environment

Chapter Four

Methodology

4.1 Introduction

This chapter covers the research design by describing the target population and the sample used for this study. The chapter presents the ethical consideration and describing the instruments used in this study. It also covers pilot study, data collection and methods of data analysis.

4.2 Research Design

A quantitative cross sectional descriptive research design using self administered questionnaires was in this study. This type of study is preferred when there is a time limitation (Polit and Beck, 2003). After receiving the approval from the administration and ethical committee of the university to conduct this study quantitative data were collected based on the objectives of the research.

4.3 Population and sampling

1- Patient

The target population was patients attending the teaching clinics at Al Quds University which was estimated to be around 1000 patients in the year 2011 out of which 70% were above 18 years old.

The sample included patients who are 18 years and above. Pediatric and orthodontic clinics were excluded based on this.

A convenient sample of 190 patients was chosen. This sample size was calculated to achieve statistical significance (.05 error margin) and using the online sample size calculator (Raosoft, 2012, Survey System, 2012)

2- Dentistry graduates

The total number of 2010-2011 dentistry graduates is 83 students. The sample included all the graduates of year 2010-2011

3- Dentistry students

The study participants comprised of students in their fourth and fifth year (2011-2012) of study at AQU dental school. The total number of students in fourth and fifth year at the time of the study was 175 students. The participants were administered the DREEM questionnaire in order to provide data. Fourth and fifth year students are in the clinical phase of the education at the faculty of dentistry – AQU. First and second year students are studying at the faculty of medicine and science, part of the third year is still taught at those faculties also.

4.4 Data collection

1- The patients' data was collected through a self administered questionnaire that was distributed at random days of the week over a period of two months. After they received the treatment and before leaving the clinics the patients received the questionnaires. Out of 190 distributed questionnaires 100 patients filled and returned completely filled questionnaires. The response rate was 53%.

2- A link of the graduate questionnaire was sent to each graduate through an online group that has all the graduates of that year which was set by the graduates while they were students to communicate among themselves.

3- Fourth and fifth year dentistry students received DREEM questionnaire through a link on their facebook group which is used for communication between them. Each student who filled the questionnaire commented on the link with a note to avoid duplication. The number of replies to the link was the same as the number of questionnaires filled.

4.5 Setting

The faculty of Dentistry at Al Quds University offers Bachelor of Dental Surgery degree. The faculty was established in 2000. According to Al Quds University registrar the faculty has 430 students (first semester 2011-2012) and 364 dentists graduated till 2010-2011.

Al Quds University is the only Arab university in Jerusalem. The university has ten academic faculties and is house to more than 15 000 students in undergraduate and graduate studies. Al Quds University has been a leader in Palestinian education by continuously offering new programs and fields of study and at the same time improving the current programs offered at the different faculties to provide the students with the best quality of education.

The faculty of Dentistry at Al Quds University was established in October 2000. The faculty of dentistry awards a Bachelor in Dental Surgery, the study duration for this degree is a five year study plan. Students must hold a Tawjihi scientific stream or its equivalent with a minimum score of 90%.

The academic curriculum for the bachelor degree in dental surgery is composed of 204 credit hours. There are two main stages in this program:

1. The preclinical stage: In this stage, the students are exposed to basic medical and dental sciences in cooperation with the faculty of medicine, sciences, and pharmacy. This stage is implemented in the first 3 years of education.

2. The clinical stage: this stage is implemented in the fourth and fifth year of education. The students receive the clinical training the various fields of dentistry in specialized clinics delivering services to the local community and university students. Each student has a number of minimum clinical requirements that need to be fulfilled in order to pass this stage.

The faculty has 25 full time staff members and 12 part time staff members in different fields of dentistry, as well as 7 nursing staff members.

4.6 Ethical consideration

The research committee of the school of Public Health at Al Quds University reviewed and approved this research.

Verbal and written explanations of the objectives of the study were given to the participants, verbal or written consents were taken. All respondents participated on a voluntary basis with the right to withdraw from the study at any time and assured of total anonymity and confidentiality. (Annex 2, 3,4)

4.7 Instrument of the study

Three instruments were used in this study. Self administered questionnaire was used to collect the data from the patients (annex 2) and the graduates (annex 3). Self administered questionnaires used to collect data from the students (annex 4).

I-The patient satisfaction questionnaire was built after reviewing several similar studies that used different tools, the tools were slightly modified to suit the study purpose. The Dental Satisfaction Questionnaire (DSQ) developed by Davies at the Rand Corporation was used to assess patient satisfaction; this questionnaire consists of nineteen questions. Also questions were selected from the study by Imam (2002) and modified to be used in this study. The patient questionnaire included independent variables such as age, gender, occupation, reason for the visit, and number of visits.

The final version of the English version of the questionnaire was translated to Arabic and back translated to English by the researcher then checked by the advisor.

The patient questionnaire covered several themes/domains:

Questions 1,2,10,13,15,22 examined technical quality

Questions 9,14 examined affordability

Questions 5,21,25,26 examined respect and communication

Questions 4,6,8,11,12,18,19,20,27,28 examined access and convenience.

Questions 3,7,17 examined pain management.

Questions 23,24 examined hygiene

Questions from 1-28 were scored on a likert scale from 0-4 as shown in annex 2.

Question 29 was a yes or no answer question whether the patient recommends other patient to visit the teaching clinics at Al Quds University

Question 30was an evaluation for the services on a scale from 0-10

Some of the items of the questionnaire were scored in a negative direction, and these items were reversed before the analysis (3,4,7)

II-The graduate questionnaire previously used to assess graduate competencies in Canada, Australia, and China by being divided into 9 groups of questions checking how well prepared the graduates feel to delivering services in, in the analysis some groups were analyzed as two groups; for example Conservative Dentistry was considered Conservative Dentistry and Endodontics. Drug emergency management and Local Anesthesia.

It covers the following areas:

Questions 1-7 General patient management

Questions 8-17 Practice management

Questions 18-23 Periodontology and dental public health

Questions 24-30 Conservative dentistry/Endodontics

Questions 31-36 Oral rehabilitation (Prosthodontics)

Questions 37-40 Orthodontics

Questions 41-46 Managing children and special needs patients

Questions 47-54 Oral and maxillofacial surgery

Questions 55-56 Local Anesthesia

Questions 57-59 Drug and emergency management

These were scored on a likert scale from 0 to 3 where 0 is very poorly ,1 is poorly ,2 is well , and 3 is very well.

There were also separate questions checking how they feel towards the education and clinical training they received. Also towards the ability to find a job. And to evaluate on a scale from 0-10 the quality of services at the dental clinics at Al Quds University, their satisfaction with the education and services they received as students. Also if the teachers were fair and delivered good education and adequate clinical training. And a comparison between the other dental school if they believe there was a difference in the education and clinical training and a difference in finding a job. The turnover was 52 questionnaires out of 83 graduates.

III- The DREEM questionnaire was used to collect data from the study participants(fourth and fifth year students). The questionnaire consists of 50 items, which are evaluated on a five point Likert scale (0 = strongly disagree to 4 = strongly agree). Each of the items has a maximum score of 4. Further, the items are organized into five subscales as follows: (i) perception of learning (12 items), (ii) perception of teachers (11 items), (iii) academic self-perceptions (8 items), (iv) perception of atmosphere (12 items), and (v) social self-perceptions (7 items). Overall, the maximum DREEM score is 200.

Questions 1,7,13,16,20,22,24,25,38,44,47,48 examined students' perceptions of learning

Questions 2,6,8,9,18,29,32,37,39,40,50 examined students' perceptions of teachers

Questions 5,10,21,26,27,31,41,45 examined students' academic self-perceptions

Questions 11,12,17,23,30,33,34,35,36,42,43,49 examined students' perception of atmosphere

Questions 3,4,14,15,19,28,46 examined students' students' social self-perceptions

Lai et al., and McAleer and Roff suggested the following DREEM total score range classification: (This scale was used in this study)

0–50: Very poor environment.

51–100: Plenty of problems.

101–150: More positive than negative.

151–200: Excellent environment.

4.8 Validity

The questionnaires were sent for evaluation by experts in the field before the final approval and presentation. Five professionals (Annex 5) with experience in research , quality evaluation, and patient satisfaction validated the questionnaires. Slight modifications were requested.

4.9 Reliability

1- Patient satisfaction questionnaire

Table 4.1 Reliability patient questionnaire

The results, as shown in table 4.1, show an overall internal consistency , α = 0.70. However for the domains it varies as showed in table 4.1

	Items	**Internal Consistency (α)**
Total	All	0.70
Technical Quality	6 items	0.31
Affordability	2 items	0.64
Respect and Communication	4 items	0.72

36

Access and Convenience	10 items	0.61
Pain Management	3 items	-0.57
Hygiene	2 items	0.60

2- Graduate questionnaire

Table 4.2 Reliability graduate questionnaire

The results, as shown in table 4.2, attest to the high internal consistency , $\alpha = 0.906$. For the domains it varies as shown in table 4.2.

	Items	Internal Consistency (α)
Total	All	.906
General patient management	7 items	.668
Practice management	10 items	.737
Periodontology and dental public health	6 items	.778
Conservative dentistry	7 items	.366
Endodontics	6 items	.507
Prosthodontics	4 items	.764
Orthodontics	6 items	.605
Managing children and special needs patients	8 items	.269
Oral and maxillofacial surgery	6 items	.836
Local anesthesia	2 items	.667
Drug and emergency management	3 items	.792

3- Student questionnaire

Table 4.3 Reliability Student perception of the learning environment DREEM

The results, as shown in table 4.3, attest to the high internal consistency of DREEM, α = 0.93. The internal consistencies of the subscales range between 0.45 ("Students' social self-perception") and 0.88 ("students' perceptions of learning").

	Max. Score	Internal Consistency (α)	Dental Students (N = 104)	
			M(SD)	Min - Max
DREEM total score (50 items)	200	0.93	101.21(24.32)	40 - 145
Students' perceptions of learning (12 items)	48	0.88	22.67(9.15)	0 – 43
Students' perceptions of teachers (11 items)	44	0.63	25.13(4.59)	13 - 34
Students 'academic self-perceptions (8 items)	32	0.79	16.48(5.81)	1 - 29
Students' perceptions of atmosphere (12 items)	48	0.82	21.66(6.62)	6 - 39
Students' social self-perceptions (7 items)	28	0.45	15.26(3.38)	7 - 23

In the study by Ostapczuk et al.,(2011) the internal consistency for the students' social self perception was also less than 0.6

4.10 Pilot testing

Five patients, five graduates, and five students were given the questionnaires and asked to fill them in. The data obtained was analyzed and minor modifications in wording and questions were made.

4.11 Data analysis

After collecting the data the researcher numerically coded the data to prepare it for statistical analysis using SPSS v.18 frequency and percentages were calculated.

CHAPTER FIVE

Results

5.1 Introduction

This chapter covers the results obtained from the various tools used in conducting this study. The first section displays the results of patient satisfaction with quality of care. The second part displays the graduates' perception of their preparedness to practice dentistry. The third part displays the students' perception of quality of services at their dental school.

5.2 Patient Satisfaction

5.2.1 Demographic and personal data

In this study 190 patients were selected and 100 returned completely filled questionnaires .The response rate was 53% out of which 62% were males and 38% were females as shown in figure 5.2.1
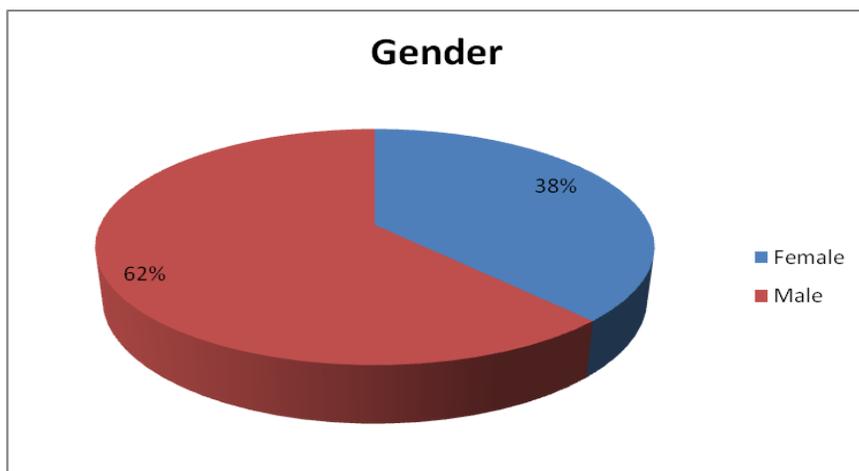
Figure 5.2.1 distribution of patients according to Gender

More male respondants were willing to fill in the questionnaire. AQU is open to both females and males.
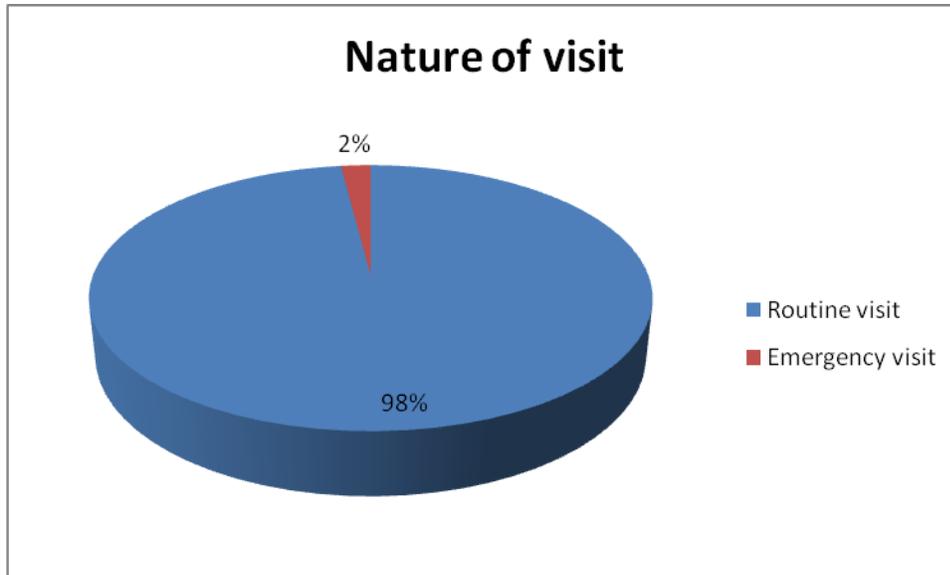
Figure 5.2.2 Nature of visit

Figure 5.2.2 shows the majority of the visits were routine visits. This shows patients come on routine basis to receive dental care at AQU dental clinics. Patients attend the clinics form other cities. There is no emergency clinic at AQU dental clinics so it might be known by the attendees that emergency services are not delivered on regular basis and for those coming from other cities they would receive emergency dental treatment closer to where they live.
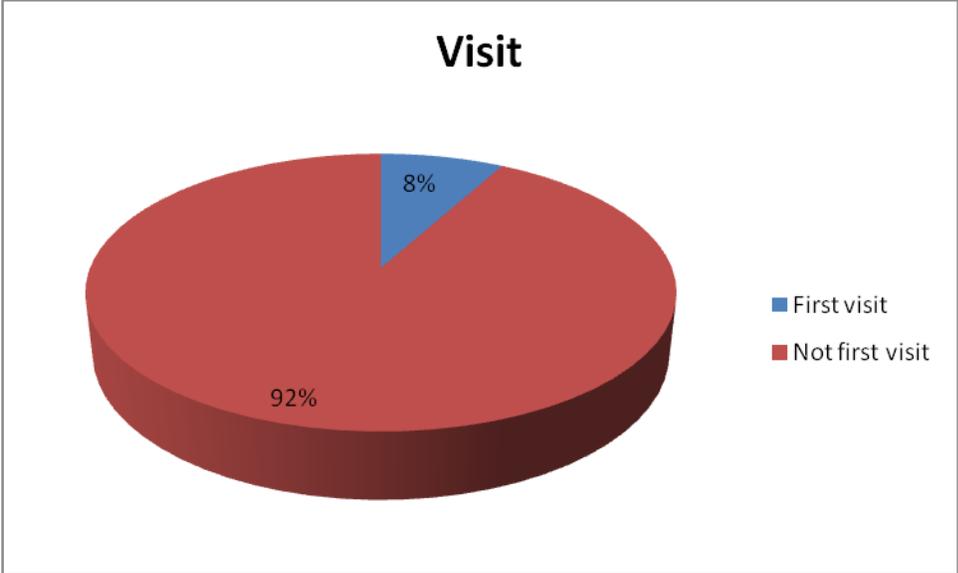
Figure 5.2.3 Distribution of respondents according to number of visits

The majority of patients' visit was not the first as shown in figure 5.2.3. This shows those patients are coming back for treatment at AQU dental clinics. The high percentage is a good indicator that patients go back for dental services at AQU dental clinics.
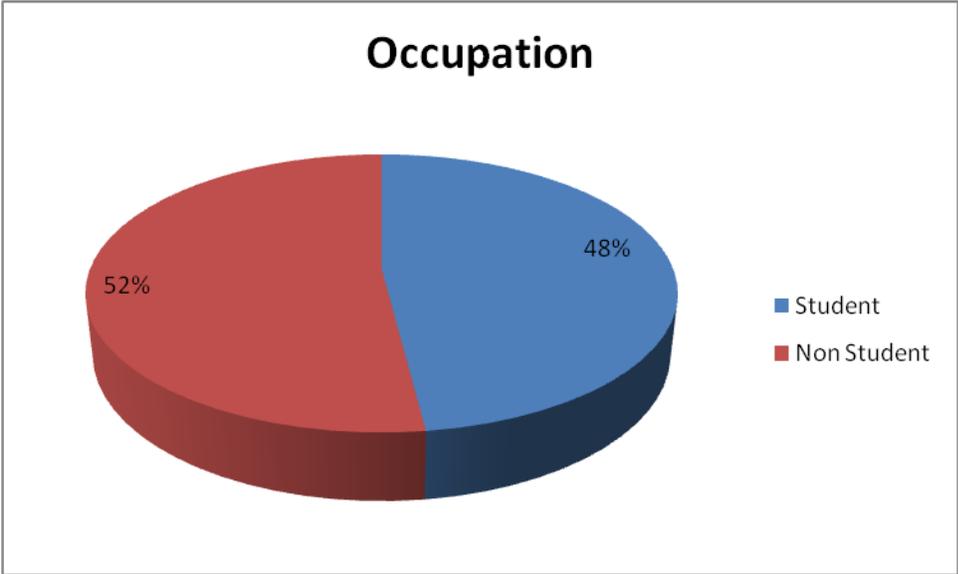
Figure 5.2.4 Distribution of respondents according to status

Almost equal percentages of students to non students as shown in figure 5.2.4. AQU serves the

students and the local community. Students inform their colleagues at the university about the

services offered and the unviersity students are aware of the presence of dental services at AQU

dental clinics.

5.2.3 Patient satisfaction results

Table 5.2.1 Patient satisfaction with the dental services at AQU Clinics

Table 5.2.1 shows the result of patient satisfaction according to the domains . In the analysis the

fields of strongly agree and agree were added together, same for disagree and strongly disagree.

	strongly disagree	disagree	uncertain	agree	strongly agree
Technical Quality					
There are things about the dental care I receive at AQU Dental Clinic that could be better.	16(16.00)	38(38.00)	19(19.00)	22(22.00)	5(5.00)
AQU students are very careful to check everything when examining their patients	2(2.00)	5(5.00)	19(19.00)	36(36.00)	38(38.00)
AQU students aren't as thorough as they should be	16(16.00)	27(27.00)	22(22.00)	31(31.00)	4(4.00)
AQU dental students explain the treatment plan before commencing with the treatment	8(8.00)	16(16.00)	20(20.00)	34(34.00)	22(22.00)
AQU dental students should do more to keep people from having problems with their teeth	2(2.00)	4(4.00)	19(19.00)	58(58.00)	17(17.00)
AQU dental students are very careful to check everything when examining their patients.		10 (10.1)	13(13.30)	47(48.00)	29(29.60)

Affordability					
AQU dental students always avoid unnecessary patient expenses	3(3.00)	19(19.00)	11(11.00)	29(29.00)	38(38.00)
AQU dental students explains about the fees before commencing with the treatment	1(1.00)	11(11.00)	22(22.00)	40(40.00)	26(26.00)
Respect and Communication					
AQU dental students always treat their patients with respect	4(4.00)	7(7.00)	14(14.00)	35(35.00)	40(40.00)
AQU dental students gives me the opportunity to speak about my problem	7(7.10)	13(13.30)	37(37.80)	30(30.60)	11(11.20)
The receptionist treats the patients nicely	35(35.40)	22(22.20)	16(16.20)	18(18.20)	8(8.10)
The receptionist answers the questions of the patients	37(37.00)	19(19.00)	20(20.00)	17(17.00)	7(7.00)
Access and Convenience					
Patients usually need to wait for long times at AQU dental clinics	8(8.00)	20(20.00)	19(19.00)	24(24.00)	29(29.00)
One of the reasons I come to the AQU Dental Clinic is because there are not enough dentists in my area	15(15.00)	35(35.00)	31(31.00)	11(11.00)	8(8.00)
AQU Dental Clinic is very conveniently located	5(5.10)	11(11.10)	14(14.10)	24(24.20)	45(45.50)
I see the same dental student just about every time I go for dental care	4(4.00)	23(23.00)	13(13.00)	36(36.00)	24(24.00)
Working times at AQU university dental clinics are convenient for all patients	11(11.00)	19(19.00)	34(34.00)	17(17.00)	19(19.00)
It is easy to get public transportation to get to AQU dental clinics	6(6.00)	44(44.00)	11(11.00)	29(29.00)	10(10.00)

There are guiding signs on the way to AQU dental clinics	8(8.00)	30(30.00)	24(24.00)	33(33.00)	5(5.00)
There are guiding signs inside the AQU dental clinics	4(4.00)	30(30.30)	28(28.30)	35(35.40)	2(2.00)
There are places allocated as waiting areas.	30(30.00)	28(28.00)	9(9.00)	27(27.00)	6(6.00)
The waiting areas are comfortable and convenient	39(39.00)	29(29.00)	13(13.00)	16(16.00)	3(3.00)
Pain Management					
Sometimes I avoid going to the dentist because it is so painful.	13(13.00)	23(23.00)	19(19.00)	17(17.00)	28(28.00)
More effort should be invested to prevent from pain that the patients feel when receiving treatment at AQU dental clinics	1(1.00)	12(12.00)	22(22.00)	21(21.00)	44(44.00)
I am not concerned about feeling pain when I go for dental care at AQU dental clinic	8 (8.20)	17 (17.5)	15(15.50)	47 (48.50)	10(10.30)
Hygiene					
AQU dental students use the face mask and hand gloves at all times during the treatment.	1(1.00)	25(25.50)	36(36.7)	26(26.50)	10(10.20)
I feel the clinics are clean and the instruments are sterile.	2(2.00)	21(21.40)	27(27.6)	24(24.50)	24(24.50)

5.2.4 Technical Quality

A high percentage (74%) was for the field that AQU dental students are very careful to check everything when examining their patients. This high percentage shows that the patients are aware of the checkup that is done by the students. This is also reflected in the second question about the AQU not being thorough as 35% agreed that they are not thorough. In explaining the

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treatment plan 56% agreed AQU explained the treatment plan. This is considered a low percentage and the staff should explain to all the patients the treatment plan. 75% agreed that AQU dental students should do more to keep people from having problems with their teeth. The presence of AQU dental clinics is for helping patients solve their dental problems at low or no cost at all. Patients might have thought that AQU staff should do more outreach and dental public health awareness in the local environment. Almost 74% agreed that AQU staff examines their problem thoroughly. Only 27% of the patients felt that there are things about the dental care at AQU dental clinics that could be better.

5.2.5 Affordability

The highest percentage of participants (67%) agreed that the AQU staff always avoid unnecessary patient expenses. 66% of participants agreed that AQU dental students explain about the fees before commencing with the treatment. This shows that in terms of affordability since most of the treatments are for free the patients are satisfied with the costs and also perceive that there is avoidance of incurring extra costs on them.

5.2.6 Respect and communication

The lowest percentage (41%) was for the field that AQU students give the patient the opportunity to speak about their problems. And 57% disagreed that the receptionist treats them nicely. The results also show that 75% agreed that AQU staff treat their patients with respect. 56% disagreed that the receptionist answers their questions. From these results the patients expressed their satisfaction with the respect and communication they receive form the staff except for the receptionist.

5.2.7 Accessibility and convenience

The highest percentage (69%) agreed that the location of AQU dental clinics is very

conveniently located. 68% of patients disagreed that the waiting area is comfortable and

convenient. 53% of the patients agreed that they have to wait for long times at AQU dental

clinics. This happens when the patient has multiple treatments at different sections because

usually patients come around the time the staff provides them with. Only 19% agreed that they

come to the clinics because there are not enough dentists at their area this low percentage shows

that there are dentist in the area and the patients come for other reasons like the skill of the staff

or the low cost of treatment. 36% agreed that working times at AQU dental clinics are

convenient. Dental clinics serve the patients from 8.30 am – 3.30 pm daily except for Friday.

This result might be because the patients' time does not fit with the clinics' schedule. Also it

might be that the student schedule for clinical training affects this. Almost 38% agreed that it is

easy to get public transportation to AQU dental clinics. At the vicinity of AQU dental clinics

there is no official transportation service. Although there are guiding signs around AQU dental

clinics and inside the dental clinics' buildings 38% and 37% only agreed respectively. Only 33%

agreed that there are places allocated as waiting areas. The patients do not get through the

reception and waiting room but rather go directly to the specific dental clinic they are attending.

5.2.8 Pain Management

The highest percentage (65%) of patients agreed that there should be more effort invested to

prevent pain that patients feel when receiving treatment at AQU dental clinics. On the other

hand, more than half of respondents (57.8%) agreed that they are not concerned about feeling

pain when they go for dental care at AQU dental clinic. Almost 45% agreed to sometimes

avoiding going to the dentist because it is so painful. More attention should be given to pain management as it is one of the causes that prevents patient from receiving treatment. Several studies have been made on the relation between anxiety and pain and the perception of pain at dental clinics. Maggirias J et.al (2002) reported that pain was related to the type of treatment delivered, also pain was related to previous painful experience. Patients with previous painful experience, or anxious patients reporting pain management problem will report this not only at AQU dental clinics.

5.2.9 Hygiene

Almost quarter of the patients (26.5%) disagreed that AQU dental students use the face mask and hand gloves at all times during the treatment. 49% agreed that they feel the clinics are clean and the instruments are sterile. The general appearance of the clinics which might be affected by the number of students using them for the number of years they were in service gives a negative effect on the patients perception of hygiene.

In responding to the question "I advice others to have their teeth treated at AQU clinics" 78% of the participants would advice others to have their teeth treated at AQU clinics while only 22% would not. The participants responded to the question " how do you evaluate the quality of services at AQU dental clinics" on a scale from 1-10, with 22% evaluated it below 5. 49% evaluated it between 5 and 7, and 26% between 8 and 10. The mean was 6.1 and the SD was 2.1.

5.3 Graduate perception of their preparedness

5.3.1 Demographic data

The total number of graduates in the year 2010-2011 was 83 out of which 52 participated in this study. Therefore the response rate was 63%.
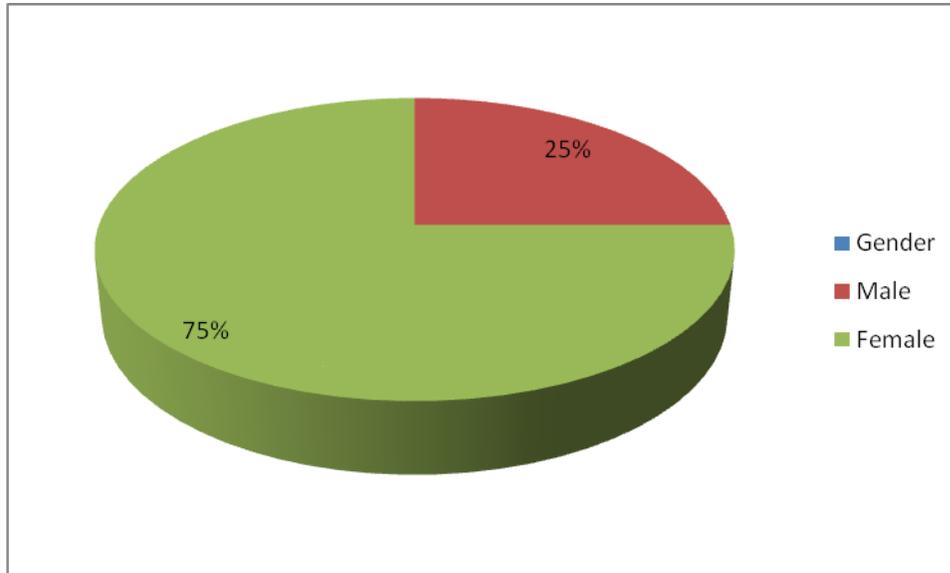
Figure 5.3.1 Graduate Gender of respondents

75% of the graduates who participated were females because at the faculty of dentistry there are more female students applying and admitted to the school than male students.

5.3.2 General patient management

The results of very well and well were combined together in the analysis same as for poorly and very poorly.

In general patient management the graduates ' highest score was in taking and interpreting medical, social, and dental history with a result of 100%. Followed by developing a sequential

treatment plan with a result of 98%. Then with 92% came communicating effectively with

patients. Discussing fees and payment options came almost at the same level with identifying

and addressing patient chief complaints with 82.6% and 82.7 respectively. While the lowest

score was in interpreting tests and history to make a diagnosis(65.4%) and before that came

discussing treatment plan and receiving informed consent with a result of 63.2%. The results

reflect that the graduates were better in developing the treatment plan rather than discussing it

with patients and receiving the informed consent.

Table 5.3.1 Graduate perception of their preparedness in General Patient Management

	Very Poorly		Poorly		Well		Very Well	
	frequency	%	frequency	%	frequency	%	frequency	%
Take and interpret medical, social, and dental history	0	.0%	0	.0%	24	46.2%	28	53.8%
Communicate effectively with patients	0	.0%	4	7.7%	28	53.8%	20	38.5%
Discuss treatment plans and get informed consent	0	.0%	15	28.8%	24	46.2%	13	25.0%
Discuss fees and payment options with patients	6	11.5%	3	5.8%	28	53.8%	15	28.8%
Develop a sequential treatment plan	0	.0%	1	1.9%	32	61.5%	19	36.5%
Interpret tests and history to make a diagnosis	0	.0%	18	34.6%	26	50.0%	8	15.4%
Identify and address patients' chief complaints	0	.0%	9	17.3%	20	38.5%	23	44.2%

5.3.3 Practice management

In practice management the graduates' highest score of 98.1% was in preventing work place hazards. Followed by 92.3 % for selecting and monitoring infection control procedures and maintaining accurate confidential patient records. Then communicating effectively with colleagues with a result of 82.7 % and followed by 76.8% for communicating with practice staff and writing laboratory prescriptions and evaluating laboratory work almost at the same level with a result of 75%. Dealing with finances of the clinic had the same level of applying evidence based dentistry with a result of 73.1% for both. Managing dental staff came after all the other fields with a score of 67.3% and the lowest score of 42.3% was in critically evaluate dental literature to informed dental practice and policy .

Table 5.3.2   Graduate perception of their preparedness in practice management

	Very Poorly		Poorly		Well		Very Well	
	frequency	%	frequency	%	frequency	%	frequency	%
Maintain accurate confidential patient records	0	.0%	8	15.4%	31	59.6%	13	25.0%
Communicate effectively with practice staff	0	.0%	13	25.0%	18	34.6%	21	40.4%
Communicate effectively with colleagues	0	.0%	9	17.3%	34	65.4%	9	17.3%
Manage dental staff	0	.0%	17	32.7%	25	48.1%	10	19.2%
Deal with finances of your clinic	0	.0%	14	26.9%	34	65.4%	4	7.7%
Select and monitor infection control procedures	0	.0%	4	7.7%	36	69.2%	12	23.1%

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	Very Poorly		Poorly		Well		Very Well	
	frequency	%	frequency	%	frequency	%	frequency	%
Prevent dental workplace hazards	0	.0%	1	1.9%	51	98.1%	0	.0%
Write laboratory prescriptions and evaluate laboratory work	2	3.8%	11	21.2%	39	75.0%	0	.0%
Critically evaluate dental literature to informed dental practice and policy	0	.0%	30	57.7%	22	42.3%	0	.0%
Apply evidence-based dentistry	0	.0%	14	26.9%	33	63.5%	5	9.6%

5.3.4 Periodontology and Public Health

In periodontology and dental public health the graduates' highest score (78.9%) was in providing and monitoring preventive treatment followed by performing oral hygiene instructions and diet analysis (76.9%), and then treating early periodontal treatment (55.8%) and the lowest score was in performing periodontal surgery for crown lengthening (38.5%). Performing periodontal surgery for home care and performing deep scaling and root planning almost had the same score of around 42%. The crown lengthening procedure is demonstrated for students while learning at the faculty of dentistry at AQU and the students do not form this procedure, this explains the low result.

Table 5.3.3 Graduate perception of their preparedness in Periodontology and dental public health

	Very Poorly		Poorly		Well		Very Well	
	frequency	%	frequency	%	frequency	%	frequency	%
Treat early periodontal treatment	16	30.8%	7	13.5%	11	21.2%	18	34.6%
Perform deep scaling, root planning	8	15.4%	22	42.3%	11	21.2%	11	21.2%
Perform periodontal surgery for home care	18	34.6%	12	23.1%	22	42.3%	0	.0%
Perform periodontal surgery for crown lengthening	32	61.5%	0	.0%	13	25.0%	7	13.5%
Perform oral hygiene instruction and diet analysis	1	1.9%	11	21.2%	26	50.0%	14	26.9%
Provide and monitor preventive treatment	0	.0%	11	21.1%	30	57.7%	11	21.2%

5.3.5 Conservative Dentistry

In conservative dentistry the graduates' highest score was in restoring teeth with amalgam restorations(88.4%) followed by restoring teeth with resin composite restorations (78.9%), and the lowest was to perform root surface restorations(26.9%) . From the results it shows that the graduates did not receive adequate training on root surface restorations.

Table 5.3.4 Graduate perception of their preparedness in Conservative Dentistry

	Very Poorly		Poorly		Well		Very Well	
	frequency	%	frequency	%	frequency	%	frequency	%
Restore teeth with Amalgam restorations	0	.0%	6	11.5%	23	44.2%	23	44.2%
Restore teeth with resin composite restorations	2	3.8%	9	17.3%	30	57.7%	11	21.2%
Perform root surface restorations	0	.0%	38	73.1%	10	19.2%	4	7.7%

5.3.6 Endodontics

In endodontics the graduates' highest score was in the field of performing single root canal treatment (100%) and only 48.1% of the graduates believed that they could performing multi root canal treatment. The results show that the graduates did not receive adequate clinical training in multi root canal treatment procedure.

Table 5.3.5 Graduate perception of their preparedness in Endodontics

	Very Poorly		Poorly		Well		Very Well	
	frequency	%	frequency	%	frequency	%	frequency	%
Perform single-root canal treatment	0	.0%	0	.0%	34	65.4%	18	34.6%
Perform multi-root canal treatment	12	23.1%	15	28.8%	24	46.2%	1	1.9%

5.3.7 Prosthodontics

In prosthodontics the graduates' highest score was replacing teeth with conventional bridges(82.7%) and the lowest score was in replacing replacing teeth with resin bonded bridges (21.1%).

Graduates might not have been exposed to advanced prosthodontic treatments. This is reflected in the results obtained from replacing teeth with resin bonded bridges (21.1%), restoring teeth with patial dentures(23%) and replacing teeth with implants (prosthesis) (23.4%). They felt well prepared(65.4%) in restoring occlusal vertical dimension, restoring teeth with single crowns(71.2%), restoring teeth with complete dentures (53.9%), and restoring teeth with post and core retained crowns (59.6%).

Table 5.3.6 Graduate perception of their preparedness in Prosthodontics

Paragraph	Very Poorly		Poorly		Well		Very Well	
	frequency	%	frequency	%	frequency	%	frequency	%
Restore teeth with single crowns	0	.0%	15	28.8%	21	40.4%	16	30.8%
Restore teeth with post-and-core crowns	2	3.8%	15	28.8%	25	48.1%	10	19.2%
Replace teeth with partial dentures	0	.0%	40	76.9%	2	3.8%	10	19.2%
Replace teeth with complete dentures	0	.0%	24	46.2%	11	21.2%	17	32.7%
Replace teeth with implants (prosthetics)	31	59.6%	14	26.9%	6	11.5%	1	1.9%
Replace teeth with conventional bridges	0	.0%	9	17.3%	31	59.6%	12	23.1%

Paragraph	Very Poorly		Poorly		Well		Very Well	
	frequency	%	frequency	%	frequency	%	frequency	%
Replace teeth with resin-bonded bridges	0	.0%	41	78.8%	1	1.9%	10	19.2%
Restore an occlusal vertical dimension	3	5.8%	15	28.8%	26	50.0%	8	15.4%

5.3.8 Orthodontics

In orthodontics the graduates' highest score was in performing space maintenance (42.3%) and the lowest score was in performing full arch alignment(0%). The results show that the graduates received adequate training in the field of space maintenance compared to the other fields which are demonstrated to students such as full arch alignment and are requested to perform minor tooth movement to which they responded by 27%. Performing treatment planning in orthodontics had a low score of 26.9%

Table 5.3.7 Graduate perception of their preparedness in Orthodontics

Paragraph	Very Poorly		Poorly		Well		Very Well	
	frequency	%	frequency	%	frequency	%	frequency	%
Perform orthodontic treatment planning	20	38.5%	18	34.6%	14	26.9%	0	.0%
Perform space maintenance	0	.0%	30	57.7%	2	3.8%	20	38.5%
Perform minor tooth movement	24	46.2%	14	26.9%	7	13.5%	7	13.5%
Perform full-arch alignment	15	28.8%	37	71.2%	0	.0%	0	.0%

5.3.9 Management of children and special needs patients

In managing children and special needs patients the graduates' highest score was in managing elderly patients(63.5%) and the lowest score was in both fields of managing mentally or physically disabled patients(26.9%) and recognizing, reporting, and following up neglect and abuse cases with the same score of 26.9%. 38.5% of the graduates perceived themselves prepared to manage anxious dental patients compared to 50% for managing child patients and a similar result of 48.1% for managing medically compromised patients. The graduates might not have been exposed to cases of neglect and abuse or mentally and physically disabled patiens.

Table 5.3.8 Graduate perception of their preparedness in Managing children and special needs patients

	Very Poorly		Poorly		Well		Very Well	
	frequency	%	frequency	%	frequency	%	frequency	%
Manage anxious dental patients	7	13.5%	25	48.1%	20	38.5%	0	.0%
Manage child patients	7	13.5%	19	36.5%	23	44.2%	3	5.8%
Manage elderly patients	0	.0%	19	36.5%	26	50.0%	7	13.5%
Manage medically compromised patients	16	30.8%	11	21.2%	25	48.1%	0	.0%
Manage mentally or physically disabled patients	7	13.5%	31	59.6%	14	26.9%	0	.0%
Recognize, report, and follow up neglect and abuse cases	7	13.5%	31	59.6%	14	26.9%	0	.0%

5.3.10 Maxillofacial surgery

In Oral and maxillofacial surgery the graduates' highest score was in performing simple extraction(69.2%) and the lowest score was in extracting impacted third molars (5.8%). In managing acute pain and infection the result was 61.6% followed by 50% for management of complications of oral surgery. Then followed by 42.3% for identifying and managing of oral pathology. Then a low score of 23.1% for managing chronic orofacial pain and 19.2% for performing soft tissue biopsies.

These results reflect that the graduates were not exposed enough to such procedures while they were learning. They were not trained adequately in situations advanced than simple extractions.

Table 5.3.9 Graduate perception of their preparedness in Oral and maxillofacial surgery

	Very Poorly		Poorly		Well		Very Well	
	frequency	%	frequency	%	frequency	%	frequency	%
Manage acute pain/infection	0	.0%	20	38.5%	11	21.2%	21	40.4%
Perform simple extraction	0	.0%	16	30.8%	5	9.6%	31	59.6%
Extract impacted third molars	24	46.2%	25	48.1%	3	5.8%	0	.0%
Manage complications of oral surgery	0	.0%	26	50.0%	26	50.0%	0	.0%
Manage chronic orofacial pain	7	13.5%	33	63.5%	12	23.1%	0	.0%
Identify and manage oral pathology	0	.0%	30	57.7%	22	42.3%	0	.0%
Perform soft-tissue biopsies	24	46.2%	18	34.6%	10	19.2%	0	.0%

	Very Poorly		Poorly		Well		Very Well	
	frequency	%	frequency	%	frequency	%	frequency	%
Manage trauma to dentofacial complex	23	44.2%	17	32.7%	12	23.1%	0	.0%

5.3.11 Local anesthesia

In Local anesthesia the graduates' highest score was in administering local anesthetics (69.2%) which is relatively low as administering local anesthesia is essential and almost administered to each patient. The lowest was in preventing and managing local anesthesia complications with a result of 53.8%. More attention should be focused on preventing and managing local anesthesia complications.

Table 5.3.10 Graduate perception of their preparedness in Local anesthesia

	Very Poorly		Poorly		Well		Very Well	
	frequency	%	frequency	%	frequency	%	frequency	%
Prevent and manage LA complications	0	.0%	24	46.2%	28	53.8%	0	.0%
Administer local anesthetics (LA)	0	.0%	16	30.8%	8	15.4%	28	53.8%

5.3.12 Drug and emergency management

In the field of Drug and Emergency Management the graduates' highest score was in the field of managing medical emergencies (84.6%) and the lowest was in the field of preventing and managing dental emergencies(48.1%). Only 54% of the graduates felt they are well in

prescribing medications. Graduates, from the results, are able to handle medical emergencies better than dental emergencies.

Table 5.3.11 Graduate perception of their preparedness in Drug and Emergency Management

	Very Poorly		Poorly		Well		Very Well	
	frequency	%	frequency	%	frequency	%	frequency	%
Prescribe drugs	0	.0%	24	46.2%	21	40.4%	7	13.5%
Manage medical emergencies	0	.0%	8	15.4%	44	84.6%	0	.0%
Prevent and manage dental emergencies	0	.0%	27	51.9%	18	34.6%	7	13.5%

5.3.13 Graduate general perception about different factors during and after studying at AQU

On a scale from 1 – 5, 44.5% of the graduates who participated in this study felt that they did not receive adequate clinical training (below 3) and 38.5% believed they received adequate clinical training (4 and above). The mean was almost 2.67 reflecting average score.

On a scale from 1 – 5, 53.9% of the graduates who participated in this study felt that the teachers were not fair (below 3) and 25% believed they were fair and 21.2% (above 3) believed they were adequately fair with a score of 3. The mean was 2.63 reflecting average score.

On a scale from 1 – 5, 34.6 % of the graduates who participated in this study felt that the teachers did not deliver a good education (below 3) and 50% believed the teachers delivered a good education. The mean was almost 3.21 reflecting an average answer.

On a scale from 1 – 10, 17.3% of the graduates expressed dissatisfaction with the education and services they received while being a student (score below 5) and 80.8% had scores between 5 and 7. And 19.2% had a score above 8. The mean was almost 6.13 reflecting an average answer.

Approximately sixty nine percent of the respondents perceived themselves better (theoretical wise) than their colleagues who graduated from other faculties, and approximately fifty eight percent of the respondents perceived themselves below the level (clinical wise) of their colleagues who graduated from other faculties.

 Approximately seventy nine percent of the respondents do not believe that graduates from the other dental school in Palestine received better education, and approximately seventy seven percent of the respondents believe that graduates from the other dental school in Palestine received better clinical training. And approximately sixty five percent of the respondents believe it is easier for graduates from other faculties to find jobs.

On a scale from 1 – 10 on how do the graduates rate the quality of services at AQU dental clinics the mean was almost 6.35 reflecting an average answer.

Graduates believed it is easier for graduates from other faculties to find work opportunities and graduates from other faculties received better clinical training than they did. While they perceived themselves better in theoretical knowledge and below the level of their colleagues clinical wise.

5.4 Students' perception of their learning environment

Out of the 175 students in fourth and fifth year at the faculty of dentistry -AQU 104 students filled the DREEM questionnaire. The response rate was almost 60%. The majority of the students were female, 76.9% (n = 80), and fifth year students, 53.8% (n = 56). For the purpose of

this analysis items with means <2 are indicative of weak areas and items with means >2 are indicative of strong areas.
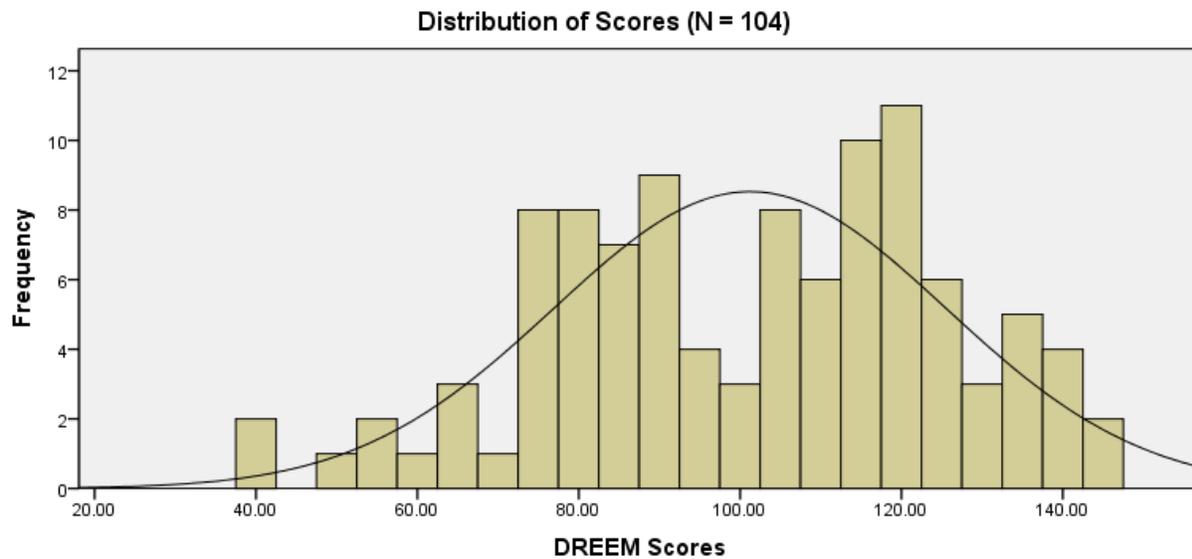

Figure 5.4.1 distribution of scores for DREEM amongst dental students.

The DREEM scores for the dental students in this study, range from 40 ('very poor environment') to 145 ('more positive than negative environment'). The scores are normally distributed as indicated by the Kolmogorov-Smirnov test, p = .439.

Table 5.4.1 Frequency analysis Mean and SD - Proportion of responses by dental students for

items in DREEM

	Strongly disagree freq (%)	Disagree freq (%)	Uncertain freq (%)	Agree freq (%)	Strongly agree freq (%)	mean	SD
Perception of learning							
25 The teaching over-emphasizes factual (based on facts) learning	10(9.60)	12(11.50)	34(32.70)	40(38.50)	8(7.70)	2.23	1.07
38 I am clear about the learning objectives of the course	8(7.70)	20(19.20)	29(27.90)	40(38.50)	7(6.70)	2.17	1.07
48 The teaching is too teacher-centered (not evidence based)	6(5.80)	22(21.20)	31(29.80)	16(15.40)	29(27.90)	2.38	1.26
16 The teaching helps to develop my competence	22(21.20)	16(15.40)	25(24.00)	32(30.80)	9(8.70)	1.90	1.29
47 Long term learning is emphasized over short term learning	11(10.60)	10(9.60)	51(49.00)	28(26.90)	4(3.80)	2.04	0.98
20 The teaching is well focused	17(16.30)	19(18.30)	41(39.40)	20(19.20)	7(6.70)	1.82	1.13
7 The teaching is often stimulating	22(21.20)	33(31.70)	33(31.70)	12(11.50)	4(3.80)	1.45	1.07
44 The teaching encourages me to be an active learner	22(21.20)	31(29.80)	2322.10)	24(23.10)	4(3.80)	1.59	1.17
24 The teaching time is put to good use	15(14.40)	36(34.60)	34(32.70)	18(17.30)	1(1.00)	1.56	0.97
13 The teaching is student centered	18(17.30)	30(28.80)	29(27.90)	23(22.10)	4(3.80)	1.66	1.12
22 The teaching helps to develop my confidence	21(20.20)	23(22.10)	17(16.30)	36(34.60)	7(6.70)	1.86	1.28
1 I am encouraged to participate in class	10(9.60)	32(30.80)	26(25.00)	19(18.30)	17(16.30)	2.01	1.24
Average mean						**1.81**	

Students' perceptions of teachers							
8 The teachers ridicule the students	4(3.80)	9(8.70)	26(25.00)	29(27.90)	36(34.60)	2.81	1.12
2 The teachers are knowledgeable		9(8.70)	36(34.60)	41(39.40)	18(17.30)	2.65	0.87
40 The teachers are well prepared for their classes	5(4.80)	13(12.50)	28(26.90)	47(45.20)	11(10.60)	2.44	1.00
50 The students irritate the teachers	6(5.80)	17(16.30)	26(25.00)	27(26.00)	28(26.90)	2.52	1.22
9 The teachers are authoritarian	2(1.90)	11(10.60)	38(36.50)	31(29.80)	22(21.20)	2.58	1.00
18 The teachers have good communications skills with patients	12(11.50)	17(16.30)	24(23.10)	45(43.30)	6(5.80)	2.15	1.13
37 The teachers give clear examples	11(10.60)	12(11.50)	34(32.70)	40(38.50)	7(6.70)	2.19	1.08
39 The teachers get angry in class	2(1.90)	28(26.90)	28(26.90)	20(19.20)	26(25.00)	2.38	1.19
6 The teachers are patient with patients	18(17.30)	21(20.20)	21(20.20)	32(30.80)	12(11.50)	1.99	1.30
32 The teachers provide constructive criticism here	18(17.30)	19(18.30)	45(43.30)	21(20.20)	1(1.00)	1.69	1.02
29 The teachers are good at providing feedback to students	13(12.50)	33(31.70)	31(29.80)	24(23.10)	3(2.90)	1.72	1.05
Average mean						**2.28**	
Students' academic self-perceptions							
26 Last Year's work has been a good preparation for this year's work	12(11.50)	16(15.40)	18(17.30)	48(46.20)	10(9.60)	2.27	1.18
45 Much of what I have to learn seems relevant to a career in healthcare	4(3.80)	20(19.20)	24(23.10)	42(40.40)	14(13.50)	2.40	1.07
31 I have learned a lot about empathy in my profession	11(10.60)	19(18.30)	21(20.20)	42(40.40)	11(10.60)	2.22	1.18
10 I am confident about my passing this year	10(9.60)	16(15.40)	27(26.00)	33(31.70)	18(17.30)	2.32	1.21
21 I feel I am being well prepared for my profession	11(10.60)	28(26.90)	24(23.10)	31(29.80)	10(9.60)	2.01	1.18

5 Learning strategies which worked for me before continue to work for me now	11(10.60)	21(20.20)	44(42.30)	16(15.40)	12(11.50)	1.97	1.12
27 I am able to memorize all I need	14(13.50)	45(43.30)	27(26.00)	13(12.50)	5(4.80)	1.52	1.03
41 My problem solving skills are being well developed here	17(16.30)	26(25.00)	28(26.90)	30(28.80)	3(2.90)	1.77	1.13
					Average mean	**2.06**	
Students' perceptions of atmosphere							
17 Cheating is a problem in this school		9(8.70)	12(11.50)	21(20.20)	62(59.60)	3.31	0.99
35 I find the experience disappointing	8(7.70)	23(22.10)	24(23.10)	26(25.00)	23(22.10)	2.32	1.26
33 I feel comfortable in class socially	9(8.70)	19(18.30)	28(26.90)	34(32.70)	14(13.50)	2.24	1.16
30 There are opportunities for me to develop interpersonal skills	10(9.60)	16(15.40)	33(31.70)	40(38.50)	5(4.80)	2.13	1.05
12 This school is well timetabled	45(43.30)	32(30.80)	13(12.50)	11(10.60)	3(2.90)	0.99	1.12
11 The atmosphere is relaxed during the ward (clinical)teaching	36(34.60)	33(31.70)	19(18.30)	12(11.50)	4(3.80)	1.18	1.15
43 The atmosphere motivates me as a learner	28(26.90)	32(30.80)	26(25.00)	14(13.50)	4(3.80)	1.37	1.13
23 The atmosphere is relaxed during lectures	3(2.90)	20(19.20)	22(21.20)	36(34.60)	23(22.10)	2.15	1.13
42 The enjoyment outweighs the stress of the course	21(20.20)	33(31.70)	34(32.70)	16(15.40)		1.43	0.98
36 I am able to concentrate well	17(16.30)	36(34.60)	25(24.00)	19(18.30)	7(6.70)	1.64	1.16
34 The atmosphere is relaxed during seminars/tutorials	19(18.30)	28(26.90)	22(21.20)	31(29.80)	4(3.80)	1.74	1.18
49 I feel able to ask the questions I want	17(16.30)	28(26.90)	22(21.20)	28(26.90)	9(8.70)	1.85	1.24

					Average mean	**1.86**	
Students' social self-perceptions							
15 I have good friends in this school		8(7.70)	13(12.50)	29(27.90)	54(51.90)	3.24	0.95
46 My accommodation(where you live) is pleasant	4(3.80)	14(13.50)	20(19.20)	40(38.50)	26(25.00)	2.67	1.11
19 My social life is good	4(3.80)	21(20.20)	16(15.40)	34(32.70)	29(27.90)	2.61	1.20
4 I am too tired to enjoy the course	3(2.90)	12(11.50)	28(26.90)	31(29.80)	30(28.80)	2.70	1.10
28 I seldom(rarely) feel lonely	10(9.60)	24(23.10)	20(19.20)	41(39.40)	9(8.70)	2.14	1.16
3 There is a good support system for students who get stressed	50(48.10)	46(44.20)	7(6.70)		1(1.00)	0.61	0.66
14 I am rarely bored on this course	29(27.90)	41(39.40)	14(13.50)	15(14.40)	5(4.80)	1.29	1.16
					Average mean	**2.18**	
					Overall test score	2.03	0.54

5.4.1 Students' perception of learning

In perception of learning the following items had a mean score higher than 2. I am encouraged to participate in class(2.01), the teaching over-emphasizes factual learning(2.23), I am clear about the learning objective of the course(2.17), long term learning is emphasized over short term learning (2.04) and the teaching is too teacher centered (2.38). The rest of the items had a mean score less than 2. The teaching is often stimulating (1.45), the teaching is student centered (1.66), the teaching helps to develop my competence (1.90), the teaching is well focused (1.82), the teaching helps to develop my confidence (1.86), the teaching time is put to good use (1.56) and the teaching encourages me to be and active learner (1.59).

Most of the student in this study affirm the following items: item 25 ('The teaching over-emphasizes factual learning'; (46.1%,), item 38 ('I am clear about the learning objectives of the

course'; 45.2%,), item 48 ('The teaching is too teacher centered'; 43.3) and item 16 ('The teaching helps to develop my competence'; 39.5%,). Notably, about 49% and 39% of the students are uncertain about items 47 ('Long term learning is emphasized over short term learning') and 20 ('The teaching is well focused') respectively.

On the other hand, most of the students negate item 7 ('The teaching is often simulating'; 52.9 %,). Similar results are obtained for item 44 ('The teaching encourages me to be an active learner'; 51%), item 24 ('The teaching time is put to good use'; 49.1 %,), item 13 ('The teaching is student centered'; 46.1 %,), item 22 ('The teaching helps develop my confidence'; 42.3%) and item 1 ('I am encouraged to participate in class'; 40.4%).

5.4.2 Students' perceptions of the teachers

In the students' perception of teachers the following items had a mean above 2: The teachers are knowledgeable (2.67), the teachers ridicule the students (2.81), the teachers are authoritarian (2.58), the teachers have good communication skills with patients (2.15), the teachers give clear examples (2.19) , the teachers get angry in class (2.38), the teachers are well prepared for their class(2.44) and the students irritate the teachers (2.52). while three items had a mean below 2: the teachers are patient with the patients (1.99), the teachers are good at providing feedback to students (1.72) and the teachers provide constructive criticism (1.69)

Most of the students in this study affirm the following items: item 8 ('The teachers ridicule the students'; 62.5%), item 2 ('The teachers are knowledgeable'; 56.7%), item 40 ('The teachers are well prepared for their classes'; 55.8%), item 50 ('The students irritate the teachers'; 52.9%), item 9 ('The teachers are authoritarian'; 51%), item 18 ('The teachers have good

communication skills with patients'; 49.1%), item 39 ('The teachers get angry in class'; 44.3%), item 37 ('The teachers give clear examples'; 45.2%) and item 6 ('The teachers are patient with patients'; 41.3%). Most of the students, 43.3%, are uncertain on item 32 ('The teachers provide constructive criticism here'). On the other hand, most of the students, 44.2%, negate item 29 ('The teachers are good at providing feedback to students').

5.4.3 Students' academic self perceptions

In the students' academic self perceptions the following items had a mean score above 2: I am confident about my passing this year (2.32), I feel I am being well prepared for my profession (2.11) , last year's work has been a good preparation this year's work(2.27), I have learned a lot about empathy in my profession(2.22), and much of what I have to learn seems relevant to a career in health care(2.40). Three items had mean scores below 2: learning strategies which worked for me before continue to work for me now (1.97), I am able to memorize all I need (1.52), and my problem solving skills are being well developed here (1.77)

Most of the students in this study affirm the following items: item 26 ('Last year's work has been a good preparation for this year's work'; 55.8%), item 45 ('Much of what I have to learn seems relevant to a career in healthcare'; 53.9%), item 31 ('I have learnt a lot about empathy in my profession'; 51%), item 10 ('I am confident about my passing this year'; 49%) and item 21 ('I feel I am being well prepared for my profession'; 39.4%,). Most of the students, 42.3% , are uncertain on item 5 ('Learning strategies which worked for me before continue to work for me now'). On the other hand, most of the students negate items 27 ('I am able to memorize all I need'; 56.8%) and 41 ('My problem solving skills are being well developed here'; 41.4%).

5.4.4 Students' perception of the atmosphere

In the students' perception of atmosphere the following items had a mean score above 2: cheating is a problem in this school(3.31), there are opportunities for me to develop interpersonal skills(2.13), I feel comfortable in class socially(2.24),I find this experience disappointing(2.32) and the atmosphere is relaxed during lecture (2.15). Seven items had a mean score less than 2: The atmosphere is relaxed during the ward (1.18), this school is well timetabled (0.99), the atmosphere is relaxed during seminars (1.74), I am able to concentrate well (1.64), the enjoyment outweighs the stress of the course (1.43), the atmosphere motivates me as a learner (1.37), and I feel able to ask the questions I want(1.85)

Most of the students in this study affirm the following items: item 17 ('Cheating is a problem in this school'; 79.8%), item 35 ('I find the experience disappointing'; 47.1%), item 33 ('I feel comfortable in class socially'; 46.2%) and item 30 ('There are opportunities for me to develop interpersonal skills'; 43.3%). item 23 ('The atmosphere is relaxed during lectures'; 56.8%)

Most of the students' responses are negative as indicated in the following items: item 12 ('This school is well timetabled'; 74.1%), item 11 ('The atmosphere is relaxed during the ward teaching'; 66.3%), item 43 ('The atmosphere motivates me as a learner'; 57.6%), item 42 ('The enjoyment outweighs the stress of the course'; 51.9%), item 36 ('I am able to concentrate well'; 51%), item 34 ('The atmosphere is relaxed during seminars/tutorials'; 45.2%) and item 49 ('I feel able to ask the questions I want'; 43.3%).

5.4.5 Students' social self-perceptions

In the students' social self perceptions the following items had a mean score above 2: I have good friends in this school(3.24), I am too tired to enjoy the course (2.70) my social life is good(2.61), I seldom feel lonely (2.14), and my accommodation is pleasant (2.67). Two items had means less than 2: there is a good support system for students who get stressed (0.61), and I am rarely bored on this course (1.29)

Most of the students in this study affirm the following items: item 15 ('I have good friends in this school'; 79.8%), item 46 ('My accommodation is pleasant'; 63.4%), item 19 ('My social life is good'; 60.6%), item 4 ('I am too tired to enjoy the course'; 58.6%) and item 28 ('I seldom feel lonely'; 48%). Most of the students negate items 3 ('There is a good support system for students who get stressed'; 92.4%) and 14 ('I am rarely bored on this course'; 67.3%).

Chapter 6

Discussion

6.1 Introduction

This chapter discusses the findings from the previous chapter and presents the recommendations of the study. Findings of patient satisfaction, graduate perception of their preparedness and student perception of their learning environment will be discussed.

6.2 Patient satisfaction with the quality of services delivered at AQU dental clinics

The results show that male patients comprised 62% of the total patients while their female counterparts comprised 38% as shown in figure 5.2.1. This indicates that the number of male patients exceeds that of female patients at AQU dental clinics. Further, figure 5.2.2 shows that 98% of the patients visited the facility routinely. This very high percentage of routine visits to the health facility indicates that majority of the visitors go for routine checkups and treatment. The remaining 2% consisted of emergency visitors.This can be attributed to that patients who are coming from other cities are coming for routine dental treatment and because of the distance they are not coming for emergency dental treatment. Also this can be attributed to the absence of an emergency dental clinic at the university. Given that specific clinics are designated only in a particular day, not all clinic services are offered daily, most probably the interviewed patients visited the health facilty on a routine basis rather than emergency treatment purposes. It might

also have been known by the patients that emergency service is not provided at AQU dental clinics.

Based on figure 5.2.3, the data on the patients who visited the university clinic shows that 92% of all patients who visited the clinic were regular visiting patients. On the other hand, 8% of the visitors were visiting for the first time. The high percentage of regular visits indicates that most patients who received services from AQU dental clinics make a return visit, however this does not go along with rating the services at around 6 which is considered average. The first time visitors probably include the 2% comprised of emergency visits as seen in figure 5.3.2 and those who fail to make a return visit since they did not receive the services they needed.

There is almost even distribution of the students and non students regarding clinic visitation. Of the respondentes, students comprised of 48% while non students are 52%. The dental facility is located at the university, which explains the high presence of students that almost equals the percentage of non students. In particular, the percentage of non students visiting the dental clinic exceeds the student's percentage only by 2%. Essentially, both students and non students attend AQU dental clinics to receive services.

Technical Quality

AQU staff tries to ensure they are thorough and careful when examining their patients. The results show that majority of the patients felt that the staff at AQU are very careful when examining them (74%) as they usually check everything. This response is indicative that patients observe what AQU dental staff is doing through their visit. It is important to check patients thoroughly at the same time it is also important for patients to feel this. This is reflected in their perception of satisfaction as extra care is being done towards them. Of the patients in this study,

35% responded that AQU staff is not as thorough as they should be while 43% did not agree on this note, the rest of the respondents 22% were not sure. This shows that patients expect more out of AQU staff, more attention should be made to this point and more care should be invested in the thoroughness of AQU staff.

Regarding AQU staff explaining the treatment plan to patients before they commence treatment, 56% of the patients agreed to this. These results show that with 56% of the patients AQU staff follow the protocol and explain what is supposed to be done in treatment and the entailed costs. Therefore, explaining the treatment plan and treatment options is an important factor on patient satisfaction as supported by Strauss et al. (1980). Patients have to be informed about the treatment plan and be given the option to discuss this with AQU staff.

75% of the patients agreed that AQU staff need to do more to keep people from having problems with their teeth. Given the treatment delivered at AQU dental clinics which is free in most of the delivered services AQU staff are doing their best to treat peoples' problems. It might be that the respondents also wished that more activities should be made about dental public health and more awareness projects invested in the local communities. It also can be recommended that some demonstration and public health awareness can be used during the time which patients are waiting to receive their treatment. This needs to be coordinated as the participants responded negatively about the waiting area. Three quarters of the patients agreed to being thoroughly examined regarding their problems while a quarter did not. Thorough examination needs to be done and evaluated for each patient as grades are given for the clinical examination and diagnosis.

Affordability

On the question about AQU staff explaining about the fees before commencing treatment, 66% of the patients agreed while 12% disagreed. Most of the services are free and very few procedures require payment. In this case, if the patient does not pay, the treatment will not commence. Perhaps, AQU staff member did not mention anything regarding payment, which is why the patient responded as follows. As the treatment is free it is commenced without informing the patients that it is free of charge. Generally speaking patients attending AQU dental clinics are informed which treatments are charged and which are for free. Also at the time they attend the first time they are informed by the receptionist which treatments they need to pay for and what is the amount.

Most of the patients agreed that AQU staff always avoid to incur patients with unnecessary expenses (67%).

Respect and communication

The results show that 41% agreed that AQU staff examine their problems thoroughly, 20% of the patients felt the opposite while (37.8%) were not sure about their response to the issue. This might be due to the fact that AQU staff is trained to care more on explaining what they need to do for treatment rather than listening to the patient's needs. Moreover, there are requirements for the training students which they need to fulfill each semester and they tend to look for these cases and treat them while the patient might be seeking for something else. This factor is very important to be learned as when the students are working in their private dental clinics they should carefully listen to their patients' needs and give them full attention. Otherwise they would lose a lot of their patients because the patients will not feel there is communication

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between the patient and the dentist. Levinson et al., (2005) and Stewart et al., (1995) indicated

that good communication leads to more patient satisfaction and is a good business practice.

A small number (26.3%) of the patients agreed that the receptionist treats them nicely

while the majority (57.6%) did not agree to this. The problem encountered by the patients with

the receptionist is caused by the patients' decision not go to the reception in order to be referred

to the clinics but rather they decide to go directly to the clinics themselves. However all patients

should be treated with respect and the job of the receptionist should be welcoming people and

making them feel comfortable and help them with what they need. Beach et al., (2005)

concluded that patients, treated with dignity and involving them in decision making, report

higher satisfaction. Being treated with dignity and involving More attention should be directed

towards this specific field. Reception is one of the most important aspects as it is where the

patients get directions from, referred to clinics from, and wait till they begin their dental

treatment at the specified clinic. However, there is a problem with the system as it does not

require the patients to go through the reception each time they attend the clinics. Only during

their first visit to receive a file number and pay the fee for registering.

Finally, 24% of the patients agreed that the receptionist answers their questions while

56.6% responded with a disagreement on this question. There is a need to reorient this staff

member to job requirements and try to motivate the person more in this position. Also in the

future to better choose the person that would fit the requirement of this job.

Accessibility

More than half of the patients (53%) agreed that the patients usually have to wait for a

long time to be attended by the staff of the AQU clinics. Booking appointments might be

problematic for the patients since the system used at AQU dental clinics does not provide

appointment-booking service through the receptionist. The patients and the students coordinate

the appointments over the phone or face to face when they deliver treatment. If the system allows

for appointments it would be more convenient for the staff and the patients. Most patients (50%)

disagreed that the reason that makes them come to the AQU clinic is that they do not have

enough dentists in their area. The area around the university has dentists, thus, low–free cost at

the university clinics could be the main reason. Also some people would consider that the

diversity of the staff and direct supervision would attribute to a higher quality of service at AQU

dental clinics than the local clinics. Some patients are treated by their colleagues they come to

support them in their education and this creates a nice atmosphere in which trust is put in their

training colleague to deliver treatment to them.

Further, more than three quarters agreed that the AQU dental clinic is very conveniently

located (69.7%). AQU dental clinics are located very close to the university and very close to

the village on which the university is located. Some walk to the clinics and thus do not use

transportation to get there, or in the case of using transportation not more than 5 minutes from

the farthest point of the village is needed to get there. Those who responded negatively might be

arriving from areas which are a bit far from the clinics. For example arriving from different

cities. As students are coming from different cities, they request that their friends or family

members come to the clinics so they would deliver dental care to them.

Almost one third of the patients did concur that working schedule at the AQU dental

clinic are convenient for all patients (36%). This might be attributed to the specific hours of

certain clinics as the clinics operate 6 days a week from 8:30 am to the late afternoon. In

addition, some university students do not have classes on Thursday which is a working day at

AQU dental clinics and thus they might have appointments on that specific day which is not convenient to them as they might leave the dorms to visit their families. Given the working times at AQU dental clinics the findings seem to be as such not because the working hours are not plenty but rather because the working hours and the nature of the distribution of providing treatment is not suitable for patients. Patients' results showed that it is not easy to get public transportation to the clinics (50%). They rely mainly on unregistered cars as there is no official "bus track" to the AQU dental clinics and these are subject to availability of a full car load of 7 passengers to make the trip from next to the university main campus to AQU dental clinics building which is around 3 kilometers away.

Finally, the same percentage of patients (38%) agreed and disagreed that guiding signs are present to the AQU clinics near the AQU dental clinics, there are guiding signs but these might be unnoticed by the patients and the signs not properly placed. Regarding the guiding signs inside the AQU dental clinics, those who agreed (37.4%) and disagreed (34%) have almost similar percentages given that also there are guiding signs at the entrance of AQU clinics building which are aimed at helping the patients get to the correct place, on the other hand these signs do not specify what dental services are offered in which part of the building given that there is a division of the services at different floor levels of the building. Signs to the university and the dental clinics are found from around 5km away from the university.

More than half of the patient correspondents felt that there were no waiting areas located and that the waiting areas are not comfortable and convenient (58% and 68% respectively). The waiting area is located at the reception area, which the patients usually do not go through before attending the clinic. This area has a couple of chairs similar to the ones used in the classes at the university, which are not comfortable for the patients to use. The area is not set up properly as a

waiting area and patients are not encouraged or asked to use this area while waiting for their appointments and instead wait at the entrance of the clinics. More attention to the waiting area should be made. The waiting area should be a calm and comfortable area for patients to wait while having access to the information they need.

Pain Management

Almost half of the patients (45%) agreed that they sometimes avoid going to the dentist because of pain while almost a half of the patients (57.8%) agreed that they are not concerned about that feeling when they visit the dentist at AQU dental clinic. Here there is quite some variation in the result, which might be that after going to the clinic and treatment is performed they lose the concern about the pain that they had before and the pain incurred at AQU dental clinics is not compared to their experience elsewhere. For some patients the dentist visit is not a pleasant visit as they sometimes associate it with pain and discomfort. However more than three quarters (65%) concurred that more effort should be invested to prevent patients from pain experience during treatment at the AQU clinic. Since treatments are performed under local anesthesia, the pain might be incurred during the injection phase rather than during the treatment phase. As AQU staff uses local anesthesia in almost all of their procedures and use it according to the need in order to avoid causing any pain or discomfort for the patients during the treatment.

Hygiene

Only 36.8% of the patients agreed that the staff use face mask and hand gloves at all times during treatment, with a similar number remaining unsure. It is not possible that AQU students operate without the use of gloves. This result can be attributed to masks rather than gloves. About half of the patients (49%) felt the clinics are clean and the instruments are sterile. All the instruments at AQU clinics are sterilized and delivered to students in sealed sterilization

pouches. Maybe the patients were talking about the appearance of some instruments which appears worn and discolored after years of usage. By no means AQU staff use unsterilized instrument during their work. More attention should be made to why the patients felt this and more attention should be made to the appearance of the instruments as this might have caused the negative perception.

78% of the respondents indicated that they would recommend dental treatment at AQU clinics to others. This is considered a high percentage and this reflects satisfaction with the services provided. In evaluating the services at AQU dental clinics on a scale from 1-10 the mean was 6.1 which rates the services at average service. Given from the results above patients are recommending the services to others the mean is considered a bit low.

Graduates' perception of their preparedness

Graduates' Gender

The study sample had three times as many female graduates (75%) as there were male graduates (25%). This constitutes 39 female and 13 male students.The ratio of female students to male students is higher according to the registrar at AQU.

Graduate Preparedness – General Patient Management Percentages and Count

All graduates (100%, n=52) said they understood how to take and interpret medical, social, and dental history. This aspect is one of the first things students do when receiving a new patient. They record the chief complaint and then take medical and dental history and develop a treatment plan accordingly. This result is definitely a positive finding. A great majority of 92.3% graduates reported to have a good and effective communication with patients. They (71.2%) discuss treatment plans with getting informed consent before treatment begins. Looking at the

other findings below in developing a sequential treatment plan there is some discrepancy in the percentages which leads to a conclusion that they are better in developing the sequential treatment plan rather than discussing it with the patients and receiving their informed consent. Informed consent is not widely used among dentists in Palestine. Only very few dentists use it in special cases of surgeries and dental implants but not with other dental procedures. They (82.7%) also discuss payment options available to the patients (82.7%), identify and address patients' chief complaints (82.7 %), and develop a sequential treatment plan (98.1%). Addressing the chief complaint is a major issue as the patient is coming to solve the problem they have related to their chief complaint. So if dentists are not able to solve and address the chief complaint problem this would be a downside and will have a negative impact on the dentist patient relationship. Two third of the graduates (65.4%) could interpret tests and history well to make a diagnosis. This result is a bit low, graduates had no problems in taking history but from this finding it seems they have a problem in interpreting the findings they obtain while history taking which might affect their diagnosis and interpretation of the clinical findings. In general patient management the graduates' highest score was in taking and interpreting medical, social, and dental history while the lowest score was in interpreting tests and history to make a diagnosis.

In comparison to the findings from Hong Kong University (HKU) graduates also felt they were prepared to handle general patient management very well. Their results were 96% for how to take and interpret medical, social and dental history; 99% with respect to identifying and addressing patients' chief complaints; and 96% for good and effective communication with patients. These results show that their performances in these aspects were about the same, with each university scoring above 90%. However, in handling chief patients' complaints, HKU graduates outperformed AQU graduates with 99% against a low of 82.7% respectively. While

10% of HKU graduates felt not well prepared to develop sequential treatment plans, and discuss fees and payment options with patients (16%), only 1.9% and 17.3% respectively of AQU graduates felt similarly. This suggests that AQU graduates were more skilled and knowledgeable in preparing sequential treatment plans.

Practice Management

The majority of the graduates who participated in the study (84.6%) felt they could maintain accurate confidential patient records, communicate effectively with colleagues (82.7%). Communication with colleagues is very important for the benefit of the patients, maintaining patient records is required by the law so dentists should pay close attention to this aspect in particular as the records might be used in medicolegal aspects and provide a chronological description of all the treatments, prescriptions, and anything related to the treatment. In selecting and monitor infection control procedures (92.3%), this is considered a very good result as infection control is something all dentists should be aware of and pay close attention to in order to prevent inducing disease to patients receiving treatment at their clinics. Another high score was for preventing dental hazards at the workspace (98.1%) which reflects a very skillful dentist and professional approach. Three quarters of the graduates felt they can communicate effectively with practice staff (76.5%) and write laboratory prescriptions and evaluate laboratory work (75%). Evaluating laboratory work should have received a higher score, dentists should be able to effectively evaluate laboratory work before delivering it to patients. This low result can be attributed to the lack of laboratory training in the field of prosthodontics were while students at AQU faculty of dentistry they do not perform the work themselves and outsource it. Outsourcing the work leads to the negative aspect of lacking the ability of evaluating the work and finding out

any errors. Generally speaking if while being students they performed each and every step of the work facing the technical problems and learning how to overcome them when graduating they will be able and have more skill to evaluate the laboratory work. Special attention should be given to this aspect and the faculty of dentistry at AQU should focus more on the laboratory training of its students. More than half of the graduates could manage dental staff (67.3%), deal with finances of their clinics (73.1%), and apply evidence-based dentistry (73.1%) and only more than half (57.7%) could not critically evaluate dental literature to informed dental practice and policy. The last two findings show that the graduates had a problem in applying evidence based dentistry and interpreting dental literature. In this aspect more attention should be applied in the fields of reading dental articles and journals and more focus on evidence based dentistry in conjunction with the literature. In practice management, the graduates' highest score was in preventing work place hazards and the lowest score was in critically evaluating dental literature to informed dental practice and policy.

In comparison, HKU scored higher on writing laboratory prescriptions and evaluating laboratory work (97%) against AQU's low of 75%. In addition, HKU graduates had a greater perception on handling patients' confidential records (97%) against AQU's 84.6%. AQU graduates (57.7%) did not understand how to critically evaluate dental literature while only 29% of HKU graduates had the same problem. This shows that the percentage of HKU graduates with difficulties in dental literature evaluation is about half that of AQU. On dealing with finance of their clinics, AQU (26.9%) and HKU (28%) had about the same percentage of difficulties.

Periodontology and Dental Public Health

Only half of the graduates felt they can treat early periodontal treatment (55.8%) while less than half of the graduates felt they could perform deep scaling, root planning and perform

periodontal surgery for home care (42.3%), and perform periodontal surgery for crown lengthening (38.5%). Crown lengthening is an advanced procedure and while being students they receive several demonstrations on this procedure but they are not requested to perform it as part of their clinical requirements. This procedure is considered advanced for undergraduate students. On the other hand they are requested to perform scaling and root planing both procedures being non-surgical. And since in the 2 years of clinical training at AQU dental clinics they perform these procedures the scores in this field should have been higher. In general dental practice scaling is one of the most common procedures delivered by dentists to the patients. Other procedures are usually referred to specialists. However more than three quarters of the graduates could perform oral hygiene instructions and diet analysis and provide and monitor preventive treatment. This is an important aspect as prevention of the disease is very important so by delivering the proper instructions and with continuous monitoring disease is prevented rather than treated. When disease already exists and is treated proper follow up and monitoring should be the case in order to maintain the outcome of the treatment and prevent the recurrence. In periodontology and dental public health, the graduates' highest score was in providing and monitoring preventive treatment and the lowest score was in performing periodontal surgery for crown lengthening. This result is predictable and acceptable for what is mentioned above.

When compared with the HKU graduates, over two thirds (74%) felt that they were not well prepared to handle some areas of periodontology and dental public health in practice. All respondents at HKU felt that they were well prepared to treat early periodontal disease against 55.8% of AQU graduates who felt the same. Clearly, HKU graduates demonstrated a far much better understanding of this theme –about twice as better. A majority (90%) of HKU graduates claimed that they were well prepared to perform scaling and root planning. More than one third

of the graduates (42.4%) from AQU lacked this skill. Nevertheless, more than half of AQU (57.7%,) and HKU (65%) graduates felt that they were not well prepared in performing periodontal surgery. However, more HKU graduates expressed non-preparedness. Probably in HKU they do not receive the demonstration as in AQU.

Both universities had roughly the same percentage (60% and 61.5% respectively for HKU and AQU) of those who expressed that they were not well prepared to handle surgery for crown lengthening as these procedures are considered advanced and are taught in graduate studies.

Conservative Dentistry

More than three quarters of the graduates felt they could restore teeth with amalgam restorations (88.5%), more than three quarters felt they could restore teeth with resin composite restorations (78.8%), while less than a third felt they could perform root surface restorations. These results are considered good results in terms of amalgam restorations and should be higher for composite restorations. Amalgam restorations (silver colored restorations) have been widely used years ago as they had superior quality to the composite restorations which are tooth colored restorations. But recent advancement in dental materials made these tooth colored restorations with almost the same quality as amalgam restorations which should make them a more widely used treatment of choice for their appearance. In terms of the results, this can be attributed to the supervisor that worked with the graduates while being students and to the availability of composite material at that time. Also this can go further back to preclinical training on these procedures. Generally speaking both procedures need special skills in applying them, with the composite restorations being more technique sensitive. Nevertheless so few graduates could not restore teeth with amalgam (11.5%), restore teeth with resin composite restorations (21.2%)

while more than two thirds could not perform root surface restorations (73.1%). This finding represents a major problem. Graduates should have received adequate training in the different procedures they will face in their clinics. In root surface restorations they might not have found the appropriate patients with this condition to train. These cases are usually associated with elder patients, or patients with special health conditions. However they should have received adequate preclinical training in this field. In conservative dentistry the graduates' highest score was in restoring teeth with amalgam restoration and the lowest was to perform root surface restorations.

All of HKU graduates felt well prepared to do amalgam restorations compared to 88.5% at AQU. The majority at HKU (97%) felt well prepared to use composite resins while AQU graduates scored a lower percentage on this (78.9%). In performing root restorations 83% of HKU graduates felt well prepared compared with 26.9% at AQU. It seems more attention is given for composite restorations at HKU than AQU. More attention should be given to composite restorations and root surface restorations at AQU.

Endodontics

All the graduates felt they were prepared to perform single root canal treatment (100%) while more than half felt they could not perform multi root canal treatment (51.9%). In endodontics, most of the graduates of HKU also felt they were adequately prepared to perform both procedures (single and multirooted) as their counterparts in AQU. Usually single root canal treatment is much easier than multi root canal treatment. Multi root canal treatment requires more training and more skill. 20 % of HKU graduates felt poorly prepared for multi-root endodontic as opposed to a very high percentage (51.9%) of AQU graduates who expressed the same challenge. This shows that the students at AQU do not receive adequate training in multi root canal treatment.

Prosthodontics

Almost three quarters of the graduates felt they were ready to restore teeth with single crowns (71.2%). Those that agreed to replace teeth with conventional bridges were 82.7%. In principal bridge work is more difficult than single crown work as it requires more skill in preparation and design. However more than three quarters (76.9%) felt they could not replace teeth with partial dentures, replace teeth with implants (86.5%), and replace teeth with resin bonded bridges (78%). Almost half of the students (53.9%) felt they could deliver complete denture treatment procedure. This percentage should be a bit higher as dentists perform this procedure often in their clinics. Implant course is a theoretical course that was recently added to the dentistry curriculum of the students. Students do not have a clinical part in this but rather view demonstrations. In general most universities in the world do not train their students to implant placement but rather focus on theoretical concepts and applications. However this field was about implant prosthetics and since no implants are being done at AQU then no prosthetic work for implants is being done. However the weakness in partial dentures is a drawback, as this procedure is supposed to be a simple one for undergraduates to perform. This weakness can be attributed to that the staff does not provide them with the knowledge and skills in the laboratory pre clinical practice. As the preclinical prosthodontics only receive demonstrations rather than doing the work themselves. When the students perform the work themselves rather than outsourcing it they will acquire better skills and are more prepared and ready to tackle the problems and procedural errors. This was also reflected in the field of practice management which deals with writing laboratory prescription and evaluating laboratory work. They also receive only the theoretical aspect of resin bonded bridges. While less than half of the graduates

felt they could not restore an occlusal vertical dimension (34.6%) and restore teeth with post and core crowns (32.7%). Restoring vertical dimension is somewhat considered advanced and a complicated procedure. But students should have this skill as they deliver complete dentures to patients. And when delivering complete dentures vertical dimension is recorded and adjusted in some cases. Being unable to perform this creates a problem for the patients. The low percentage in post and core is also a drawback, since this is one of the common procedures in day to day work at the clinics after graduation. More attention should be given in the aspects in order to equip the students with the needed skills before graduation in prosthodontics. In prosthodontics the graduates' highest score was replacing teeth with conventional bridges and the lowest score was in replacing teeth with implants(prosthetics)

The results show that graduates of HKU felt they were not well prepared to restore an occlusal vertical dimension (34%) just as those of AQU (34.6%). 9% of HKU graduates felt poorly prepared to restore teeth with post-and-core crowns. On this, a greater percentage (32.6%) of AQU graduates had the same difficulty. Also all HKU graduates felt well prepared to perform complete denture procedures compared to 53.9% at AQU. 90% of the graduates at HKU felt well prepared to perform conventional bridges and 80% for resin bonded bridges. AQU graduates had a similar result 82.7% for conventional bridges but had a very low percent of 21.1% for resin bonded bridges which shows that very little has been done in this specific field.
This is partial evidence that graduates are not familiar with non conventional bridges hence rely on conventional. The university should focus more emphasis on the fields of prosthodontics so that graduates will be better trained.

Orthodontics

More than half of the graduates felt they could not perform orthodontic treatment planning (73.1%), perform space maintenance (57.7%), and perform minor tooth movement (73.1%) while all the graduates felt they were not ready to perform full arch alignment (100%). Although almost a quarter of the graduates still felt they could perform orthodontic treatment planning (26.9%), perform space maintenance (42.3%) while none thought they could perform full arch alignment. In orthodontics, the graduates' highest score was in performing space maintenance and the lowest score was in performing full arch alignment.

In comparison with the graduates at HKU where over 80 percent felt poorly prepared in orthodontics. Most graduates in this study (84%) claimed they were poor at performing full-arch alignment with 100% of AQU claiming the same challenge. Full arch alignment is considered an advanced orthodontic procedure that is taught at graduate level. At undergraduate level students are taught to properly diagnose and refer fixed orthodontic cases but receive adequate training and knowledge in removable orthodontics. They are also requested to perform removable appliances for patients. At the same time students are taught and requested to do several case analysis and treatment planning. It could be that since the treatment planning and case analysis is not implemented clinically on patients the graduates felt poorly trained in them. On orthodontic treatment planning, HKU graduates (61%) reported they were not well equipped as 73.1% of AQU graduates recorded the same perception, meaning HKU graduates are better on this aspect. Only about half of HKU (54%) graduates felt well prepared to perform space maintenance to prevent malocclusions or claimed they were well prepared to perform minor tooth movement (50%).

In comparison, however, just 42.2% and 27% of AQU graduates perceived themselves as able to handle space maintenance and tooth movement respectively. In both cases, the graduates performed poorly in orthodontics and space maintenance, thus, it is evident that the clinical aspect of the courses is lacking more training. Again here orthodontics needs advanced graduate training and students in undergraduate programs are introduced to the concepts and are requested to perform simple and minor procedures. Space maintenance is joint between orthodontics and pediatrics and is a very common procedure delivered at dental clinics to prevent crowding of teeth when a tooth is lost earlier than expected.

Managing Children and Patients with Special Needs

More than half of the graduates felt they were able manage child patients (50%) and elderly patients (63.5%) while more than half felt they could not manage anxious dental patients (61.6%) and medically compromised patients (52%). However, more than two thirds of the graduates felt they were not able to manage mentally or physically disabled patients and recognize, report and make a follow up on neglect and abuse cases (73.1%). In managing children and patients with special needs, the graduates' highest score was in managing elderly patients and the lowest score was in both fields of managing mentally or physically disabled patients and recognizing, reporting, and following up neglect and abuse cases.

When compared to the HKU graduates, 29% of them felt they were not adequately suited to manage children compared to 50% at AQU. Most felt well prepared to deal with elderly patients (93%) against a mere 63.5% from AQU graduates; anxious patients (83%) for HKU against just 38.5% for AQU. However, 41 % claimed they were not prepared well to treat

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mentally or physically disabled patients, against 73.1% for AQU graduates. In addition, 37 % felt they were poorly prepared to recognize, follow-up, and report cases of abuse.

In managing children and patients with special needs the AQU graduates' highest score was in managing elderly patients and the lowest score was in both fields of managing mentally or physically disabled patients and recognizing, reporting, and following up neglect and abuse cases. At AQU very few patients with special needs attend the clinics, so this reflects the results expressed above. Special needs patients need special care and treatment procedures. However the students at AQU should be exposed to these kinds of care.

Oral and Maxillofacial Surgery

Over half of the graduates were prepared to manage acute pain and infection (61.5%), perform simple extraction (69.2%), and only half were prepared to manage complications of oral surgery. Nevertheless, almost all the graduates (94.2%) felt they were not prepared to extract impacted third molars. Graduates were more prepared to perform simple extraction procedure than advanced procedures. This procedure is done as a demonstration for the students rather than asking them to perform it themselves. Half were not able to manage complications of oral surgery (50%),complications are very important to manage this is considered a high percent regardless of being only 50% as failing to manage complications might lead to drastic results affecting the lives of patients. More than three quarters were not ready to manage chronic orofacial pain (76.9%), pain management is being taught as a graduate specialty and some countries and is gaining popularity. Students and graduates are not expected to be experts in this field at the undergraduate level but should have enough knowledge and skill to ease the pain of patients and provide them with the palliative care they need. Identifying and managing oral

pathology had (57.7%) were not ready in this field, graduates should be able to identify oral

pathology and refer the patients to specialist as patients usually go to general dental practitioners

and upon examination if any abnormal clinical findings are noticed the practitioner should have

the skill to give an initial diagnosis and refer to a specialist for management. Performing soft

tissue biopsies (80.8%) were not properly prepared in this field, generally after identifying the

problem and referring to a specialist the specialist does these procedures. However graduates

should have basic knowledge in how to perform such procedures on their own. In managing

trauma to dentofacial complex (76.9%) were not properly prepared. This can be considered a

normal finding as dentofacial complex trauma needs very highly trained specialist in this field.

The general practitioner usually can deal better with dental trauma rather than facial trauma.

 In oral and maxillofacial surgery, the graduates' highest score was in performing simple

extraction and the lowest score was in extracting impacted third molars.

Most of HKU graduates (94%,) felt well prepared in managing acute pain or infection.

However, only 61.6% of AQU graduates had a similar perception and competence, which is way

below that of HKU graduates. The majority (84%) also felt well prepared in performing surgery

on impacted third molars. Unfortunately, only 5.8% of AQU graduates perceived they were well

prepared for this kind of surgery – a lower percentage by far. Over three quarters (77%) felt well

prepared to manage complications of oral surgery. AQU graduates (50%) were well prepared,

which is a lower percentage than HKU's. Nonetheless many graduates (87%) felt poorly

prepared to perform soft-tissue biopsies compared to 53.8% at AQU. Approximately three

quarters (74%) at HKU felt not well prepared to manage trauma relating to the dentofacial

complex. On the other hand, 80.8% of AQU graduates face this problem. These findings are a bit

similar. Over half (54%) felt poorly prepared to relieve chronic orofacial pain, 77% at AQU

expressed the same challenge. While approximately half (53%) at HKU felt poorly prepared in

identifying and managing oral pathology, 57.7% at AQU were also not well prepared to identify

and manage oral pathology.

More attention and training should be given to the students in extracting impacted third molars,

identifying oral pathologies, and performing biopsies..

Local Anesthesia

Less than half of the graduates (46.2%) felt they could not prevent and manage LA

complications. More than a quarter (30.8%) could not administer local anesthetics while more

than half (53.8%) felt they were prepared to prevent and manage LA complications and more

than half were prepared to administer local anesthetics (69.2%). Students are taught to deliver

LA rather than the prevention of complications. This might be due to the lack of complications in

the clinics and the students deliver LA in most of the clinical training clinics so they gain more

experience in the technique but do not focus on the complications. In Local anesthesia, the

graduates' highest score was in administering local anesthetics and the lowest was in preventing

and managing local anesthesia complications which is a bad result as complications might have a

disastrous effect on the patients. It also appears here that graduates had a problem with managing

complications.

In the administration of local anesthesia, the graduates from both universities agreed that

they could administer thus more than half were familiar with both procedures. However with a

higher percent of 94% at HKU to prevent complications of LA compared to 53.8% at AQU.

Drug and Emergency Management

Over half of the graduates (53.8%) felt that they could prescribe drugs. More than three quarters (84.6%) were able to manage medical emergencies while less than half (48.1%) felt that they were able to prevent and manage dental emergencies. Nevertheless, nearly half of the graduates (46.2%) could not prescibe drugs, less than a quarter felt they could not manage medical emergencies, and more than half (51.9%) felt they were not prepared to prevent and manage dental emergencies. In the field of drug and emergency management, the graduates' highest score was in the field of managing medical emergencies and the lowest was in the field of preventing and managing dental emergencies.

Less than half of the graduates (45%) at HKU reported being well prepared in prescribing drugs against AQU's 53.9% slightly higher value. Graduates of AQU were not well prepared to attending to the patients with all sorts of medical (15.4%) or dental emergencies (51.9%) as opposed to 40% and 13% respectively for HKU graduates.

A mean of 2.67 resulted on the question about graduates having received adequate clinical training. This mean shows that graduates felt they did not receive adequate clinical training. This could be attributed to the large number of students and the lack of training facility equipment to adapt to these numbers. Clinical training is a very important aspect of the educational process in dentistry. Students receive the theoretical information and apply what they learn clinically. The more they train the better.

The mean for the question on fairness of teachers was 2.65. Graduates might have felt their staff was not fair towards them because they did not receive adequate clinical training. This problem

cannot be attributed mainly to the staff. As the staff perform their duties, other policies such as preventing students who haven't registered from being admitted to clinics and lectures might have led to this assumption. These policies are more of the higher management. The graduates might have blamed their teachers for not being fair in terms of not providing them with equipment and facilities to train with. Also sometimes if staff members are a bit tough on students; students perceive them as unfair. However this finding should not be neglected and further exploration should be performed.

The mean for the question on whether the faculty teachers delivered a good education to graduates was 3.21. This reflects that graduates felt that their teacher somehow delivered good education for them.

The participants who responded to the question about graduates' satisfaction with the education and services they received while being students, the mean was 6.13.

When compared with other faculties, the graduates scores showed that they perceived themselves better (theoretical wise) than their colleagues who graduated from other faculties (69.2%). However, they perceived themselves as being below the level (clinical wise) of their colleagues who graduated from other faculties (57.7%). This can also be attributed to the lack of equipment at the dental training facility and shows that they have better theoretical knowledge than clinical.

 The majority of graduates do not believe that graduates from the other dental school in Palestine received better theoretical education (78.8%). The majority of graduates believe that graduates from the other dental school in Palestine received better clinical training (76.9%). This shows

that they perceive themselves better theoretical wise, but are weaker clinical due to the lack of equipment which leads to the lack of clinical training.

The scores showed that the graduates believe it is easier for graduates from other faculties to find jobs (65.4%). This might be attributed to the clinical skills rather than the theoretical skills and knowledge. Also an important aspect is that the degree from AQU faculty of dentistry is not approved in Israel which is a target market for the graduates holding Jerusalem IDs.

78% of the patients would recommend others to use the dental treatment services at AQU dental clinics. This high percentage shows that these patients were satisfied with the service and treatment they received otherwise they wouldn't have recommended the service to others.

The graduates rated the quality of services at AQU dental clinics with a mean of 6.35. This goes along with the patient response with a mean of approximately 6.1 .The results are very close to each other and all the ratings rate the services slightly above average.

6.4 Student perception of learning environment at the AQU faculty of dentistry

Since inception, the application of DREEM in evaluating the educational climate of a learning institution has gained momentum (Yusoff, 2012). In utilizing DREEM to examine the educational environment of the dental school, the present study points out that the environment is 'more positive than negative' (M = 101.21, SD = 24.32). Items with means > 2 indicate strong areas. For instance, item 2 ('the teachers are knowledgable'; M = 2.65, SD = 0.87), item 15 ('I have good friends in this school'; M = 3.24, SD = 0.95) and item 4 ('I am too tired to enjoy the course'; M = 2.70, SD = 1.10).

On the contrary, items with means < 2 are indicative of weak areas. These include item 3 ('There is a good support system for students who get stressed'; M = 0.61, SD = 0.66) and item 12 ('This school is well timetabled'; M = 0.99, SD = 1.12).

Notably, most of the students' social self-perceptions, perceptions of teachers and academic self-perceptions have means > 2. Moreover, most of the students' perceptions on learning and the atmosphere have means < 2.

On the other hand, there are six items (8, 9, 39, 17, 35 and 4) with negative discrimination indices. Simply, this implies negative correlation between the items' score and the overall test scores.

The results of the frequencies analysis and item analysis for DREEM instrument enable the identification of weak and strong aspects of the learning environment. Firstly, the social self-perceptions of the students indicate an ideal environment, for instance, good friends (M = 3.24, SD = 0.95), good social life (M = 2.61, SD = 1.20) and pleasant accommodation (M = 2.67, SD = 1.11). This is an important aspect in the assessment of the learning environment as the social self perceptions add to the experience of the student during university life. Being satisfied or happy with their social life by having good friends and a good social life and pleasant accommodation will give the student a relieving atmosphere away from the stressful atmosphere endured while studying.

On one hand, the level of professionalism maintained by the teachers adds utility to the environment of the dental faculty. According to most students (56.7%), the teachers are knowledgeable (M = 2.65, SD = 0.87). In addition, most students (45.2%) affirm that the

teachers use of clear examples (M = 2.19, SD = 1.08). More than half of the students (55.8%) positively appraise the teachers' preparedness for classes (M = 2.44, SD = 1.00). These findings might be indicative that the teaching is more teacher oriented than student oriented. In the field of the teachers are knowledgeable none of the students answered with strongly disagree, however there was around 35% who were uncertain and around 9% who disagreed to this. The percentage of those who agreed exceeds both of the previous percentages which is indicative that the students perceive their teachers as knowledgeable. On the other hand less than half of the students agreed that the teachers give clear examples with almost the same percentage 33% who were uncertain. This might reflect that the teachers do not have enough teaching skills or that some are more clinically oriented than theoretically oriented which affects their ability to give clear and descriptive examples in order to help the students better understand what is being talked about. Given that the also more than half of the students 55.8% agreed that the teachers are well prepared to their class this might also reflect the inability to deliver the needed information to the student even if the teachers were knowledgeable and well prepared as they might lake the teaching methods for that. A relatively high percentage of students 62.5% agreed that teachers ridicule them this finding is a negative finding by all aspects. Students should be taught, aside from the science they receive, how to respect each other, their teachers, and their patients. If they receive a negative message from their teachers who ridicule them then this will be negatively reflected in their attitude towards their colleagues, patients and teachers. A slightly lower percentage of 52.9 agreed that the students irritate the teachers. Since this was answered by students then this shows that this might be done on purpose for teachers who ridicule the students. However from this study it cannot be indicated which precedes. Is it the teachers react to the irritation by ridiculing the students or vice versa? A lower percentage of 44.2% agreed

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that teachers get angry in class. Getting angry in class might be related to the previous factor of the students irritating the teachers; it can also be attributed to the inability of the teacher to control the class given that 51% of the students agreed that the teachers are authoritarian. One other factor might be the inability of the teacher to have the students understand what he/she is explaining relating this to the teachers giving good examples. So if the teacher feels unable to deliver what is needed, or unable to control the class this might lead to an angry reaction. Almost half of the students 49.1% agreed that the teachers have good communication skills with the patients. 42.3% agreed that the teachers are patient with the patients. The communication between the students and the patients is more than that of the teacher and the patients. As the student is delivering the treatment and the teacher evaluates and gives notes on how the treatment should go. Teachers should serve as role models and teach their students effective communication skills with patients. Communication with the patient is a very important aspect in the clinical life of dentists. Not being able to effectively communicate with the patients might lead to loss of business. A very low percentage of 21.2% and 26% agreed that teachers provide constructive criticism and the teachers are good at providing feedback to students respectively. The feedback given by the teachers might be interpreted by the students as negative criticism. Teachers criticize their students in order to help improve their abilities and skills it is a major issue if the students perceive this differently and teachers must explain to their students why they are criticizing them and give them clear explanation to why this is being done to avoid and misunderstanding by the students. Students should reflect on their performance and then teachers should give reflective feedback.

In students' perception of learning, the teaching methodology employed by the teachers, factual learning, is locally acceptable in the faculty. A majority of the students (46.2%) affirm

the application of this teaching methodology (M = 2.23, SD = 1.07). The methodology emphasizes long term learning as opposed to short term learning (M = 2.04, SD = 0.98). In this regard, most of the students (45.2%) clearly understand their learning objectives (M = 2.23, SD = 1.07). In addition, a proportion of the students (39.5%) feel that their competence is developed (M = 1.90, SD = 1.29). Taking into account the core mission of the school, the students at the dental school are well prepared, clinically, to venture into practicing the profession.

Despite these elaborate strengths in the environment, there exist some identifiable and manageable problems. To a large extent, the problems are attributable to the teachers and the way they handle disciplinary cases. Most of the students (51%) perceive the teachers as being more authoritative (M = 2.58, SD = 1.00). A major proportion of the students (52.9%) point out that the teachers are irritable (M = 2.52, SD = 1.22). A major proportion of the students, 44.2%, attest that the teachers get angry in class (M = 2.38, SD = 1.19). Indeed, most students (62.5%) indicate that the teachers ridicule students (M = 2.81, SD = 1.12). It is, therefore, tenable that there is an inconsistency in temperament amongst the teachers, which urgently needs to be addressed.

Additionally, the teachers are lax at providing feedback, as cited by most students (44.2%). Evidently, their teaching methodologies do not favor a major proportion of the dental students. For instance, the teachers do not encourage active learning (M = 1.59, SD = 1.17) hence a majority of the students (52.9%) do not feel stimulated. Further, according to the students, the teaching process is not centered on the students (M = 1.66, SD = 1.12) but rather on the teachers (M = 2.38, SD = 1.26) and a lot of teaching time is wasted (M = 1.56, SD = 0.97).

Consequently, the lack of evidence based teaching does not enhance the students' levels of confidence (M = 1.86, SD = 1.28) and problem solving skills (M = 1.77, SD = 1.13).

In regard to the students' perception of the atmosphere, the atmosphere at the dental school is also not favorable for the students. Most students affirm that there is a lot of anxiety during clinical teaching (M = 1.18, SD = 1.15), lectures and tutorials (M = 1.74, SD = 1.18). Further, the faculty's timetable is uneven (M = 0.99, SD = 1.12) and does not factor in students' co-curricular activities, which are beneficial for alleviating stress. In this regard, most students are unable to concentrate well (M = 1.64, SD = 1.16) and are too tired to enjoy the course (M = 2.70, SD = 1.10). This is alleviated by the lack of good support system for students who suffer stress (M = 0.61, SD = 0.66). These shortcomings may be attributed to cheating, which is cited by most students (79.8%) to be prevalent in the school.

In students' perception of the atmosphere the item means range between 0.99 for item 12 'the school is well timetabled' and 3.31 for item 17 'Cheating is a problem in this school'. The overall mean for the items is 2.03, with a standard deviation of 0.54.

A lower percentage of the students, 30.7%, affirm that the method emphasizes long term learning as opposed to short term learning and almost half of the students, 49%, who are uncertain on the same field. Fundamentally, education should inculcate transferable skills to the learner, which are applicable in the profession in the long run. Therefore, this method of teaching is acceptable. In effective studying, broad objectives need to be outlined. As such, 45.2% of the students indicate that they clearly understand their learning objectives. However, it is not clear whether or not the method develops competence as indicated by 39.5% of the students who agree and 36.6% who disagree. It is also not clear as to whether the teaching methodology helps

students to develop confidence or not, as indicated by 42.3% of students who negate and 41.3% who affirm. Developing confidence is important as when the students graduate they should deliver the treatment to their patients with confidence, it is important for the patient to feel that his dentist has self confidence and is able to deliver the appropriate treatment. Of course confidence should be backed up with strong theoretical background and strong clinical skills. Additionally, the focus of teaching is questionable based on the proportion of students who affirm (34.6%) and those who are uncertain (39.4%) in the field of teaching is well focused. It is important to mention that there are external factors affecting the educational process at AQU such as strikes by the students or by faculty members. Indeed, almost half of the students (49%) affirm that the teaching time is not fully utilized. This could be due to several reasons arising from either the teachers are not attending their classes on time, or the teachers do not focus on the topic they are talking about. About half of the students, 52.9%, disagree that the teaching is often stimulating. This could be caused by the lack of encouragement of active learning, as indicated by half of the students (51%). The teaching process should be interactive and rich with evidence based information in order to try and engage the students in the learning process as much as possible. Indeed, 40.4% of the students indicate that they are not encouraged to participate in class and 46.1% feel that the teaching is not student centered. The previous reflection shows that some of the teaching methods by some of the teachers are not encouraging students to be active in the education and learning process.

More than half of the students (56.7%) affirm that the teachers are knowledgeable. In respect to this, it would be acceptable that the teachers are well prepared for their classes, which is affirmed by 55.8% of the students. Consequently, the teachers give clear examples according to 45.2% of the students. This is considered a low result as the examples are usually given to

help the students better understand what is being explained to them. If the examples were not clear then the students will be more confused and will not understand what is being said; thus the examples do not serve their purpose. The better the experience of the teachers the better they will be able to give clear examples or better clarify what is being explained to the students. However, more than half of the students (52.9%) point out that the teachers are irritated by students. As such this finding is reflected by the teachers being induced to take stern action; hence the students may view them as authoritative. In view of this, about half of the students (51%) perceive the teachers as being more authoritative. The students' vice of irritating the teachers can also be credited to the teachers' laxity in providing feedback to the students, which is affirmed by 44.2% of the students who disagree. Additionally, 44.2% of the students attest that the teachers get angry in class. As a result, the teachers ridicule the student, as attested by 62.5% of the students. It is difficult to attribute which caused what in the previous findings but there is a relation between the findings and they might be as a result of one another. In addition, the teachers do not accord constructive criticism to the students, as indicated by 35.6% of students who disagree and 43.3% of those who are not sure. If the student-teacher relationship is not a good one, then the students will not accept constructive criticism and will consider it the opposite. However, despite the sour teacher-student relations, 49.1% of the students feel that the teachers have good communication skills with patients while 42.3% indicate that the teachers are patient with patients. The main communication occurs between the student and the patient. As the teacher is present to monitor, guide and help the student deliver the needed treatment. There is minimal direct communication between the teacher and the patient. It is, therefore, tenable that there is an inconsistency in temperament amongst the teachers and a laxity in discipline

amongst the students, which urgently needs to be addressed. It is also clear that the relationship between the students and the teachers is not a good one.

Approximately 55.8% of the students feel that the previous years' work prepared them well in advance for the current year's work. As a result, almost half (49%) of the students are confident of passing in their studies. In addition, at least 51% of the students indicate that they have learnt a lot about empathy, which is a pertinent virtue when dealing with patients. More than half of the students, 53.9%, affirm the relevance of what they learn to their healthcare career. However, it is not clear whether the students are being well prepared for their profession or not as observed on 39.4% who affirm and 37.5% who negate. This is a very low result as the teaching process should begin preparing the students from the first year to their career. About 30.8% of the students feel that their past learning strategies are currently ineffective. For instance, 56.8% indicate that they are unable to memorize all they need while 41.3% feel that their problem solving skills are not being well developed at the dental school. This indicates that the tools used should be altered, teaching should be more evidence based oriented, and the students engaged more in the education and learning process to gain the most out of it.

About 79.8% of the students affirm that cheating is a problem in the dental school. This is considered a very high percentage. Cheating must not be tolerated by AQU faculty of dentistry. Actions should be taken against students who are cheating. With this high percentage it seems no actions are being taken against those who cheat which makes it a very widespread action. In this case, about 66.3% of the students indicate that the atmosphere is not relaxed during the ward teaching. Clinical sessions might of stress to the student for several reasons. Some of which are the lack of patients, the patients not attending their appointments, the students' fear of not

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achieving the needed requirements, the students' level of self confidence, and the continuous monitoring by the teachers. Further, 56.7% agree that the atmosphere is relaxed during lectures while 45.2% negate that the atmosphere is relaxed during tutorials. In general dentistry students are learning in a stressful environment due to the pressure in their workload, lack of free time, and dealing with patients. The new experience of treating patients might develop some sort of stress for students. Actions should be taken to relieve this stress, almost 93% of the students indicated that there is no system to help stressed students.   In the end, about half, 50.9%, of the students are unable to concentrate well in studies while 43.2% are unable to freely ask the questions they want. The students might fear to be ridiculed by the teachers, and it might be that the students are not encouraged to ask. They might feel that they will irritate the teachers by their questions. Students are learning they should be able to ask all the questions in order to learn. The atmosphere does not motivate the students as learners as affirmed by 57.7% of the students. Overall, this experience is disappointing to about 47.1% of the students. Further, 74.1% of the students negate that the school is well timetabled. The problem with the timetable can be attributed in part to the strikes that occur at the university which then makes problems in the timetable. Also students face a problem that they have the clinics in a location away from the main campus and they need to move between both places and they have around 10 minutes to do so. This will cause the students to be late while going and coming back from the clinics to the university main campus where lectures are held. In this regard, the time for leisure is constrained hence the students do not partake in stress reducing activities. As such, 51.9% of the students negate that the enjoyment outweighs the stress of the course. Despite the negative perceptions of the schools' atmosphere, 46.2% of the students feel socially comfortable in class. In particular,

43.3% of the students approve that there actually exists opportunities for them to develop interpersonal skills.

Approximately 79.8% of the students approve that they have good friends in the school. Consequently, 48.1% rarely feel lonely and 60.6% affirm that their social life is good. In addition, 63.5% of the students approve that their accommodation is pleasant. The students will find a relaxing atmosphere in their pleasant accommodation and need friends to enjoy their social life. With all the stress they are undergoing and the unpleasant experiences in their view it is important to have a good social life, not feel lonely, and have good friends. However, 92.3% of the students indicate, there is a lack of proper support system for students who get stressed, which further worsens the situation. More than half of the students (58.6%) affirm that they are too tired to enjoy the course, which results to boredom as indicated by 67.3% of the students. With a very busy timetable of lectures and clinical sessions the students are overwhelmed with the work and study load they have.

Despite these weaknesses in DREEM subscales, the social aspects including sociability and accommodation, and the teachers' professionalism are identified as points of value to the environment. On the other hand, the problems identified are attributable to the teaching methodologies applied by the teachers' and the system of time management followed by the faculty.

In view of the issues arising, it would be appropriate for the teachers to review the methodologies applied in teaching. This should involve the inclusion of students as active participants in lectures and tutorials. In addition, the teachers should be prompt in providing feedback to students. Additionally, there is a need to restructure the faculty's timetable in order

to allocate ample time for both students and teachers to relax. In doing so, the teachers will improve in temperament while the students will increase their concentration levels. As a consequence, the ambience of the learning environment will greatly improve.

6.5 Recommendations

From the above findings recommendations can be formulated into three main aspects. The aspects are: structure, process, and outcomes.

Structure

1. The dental clinics at AQU must provide the patients with comfortable and suitable waiting areas. The waiting areas should be available at the reception area in which the patients were very dissatisfied with the receptionist and with the waiting area. Monitoring of the employees and making sure they are working according to their work description and not being a part of patient dissatisfaction. The process of admitting the patients to the clinics should be done through the reception each time the patient is visiting. It was clear that patients do not go through reception but directly to the clinic, this can also be achieved through having an appointment and registration system.

2. An emergency clinic must be added to the dental facility to provide the patients seeking emergency dental treatment to be relieved from pain.

3. The general atmosphere at the faculty of dentistry – AQU should be improved to better motivate the students.

Process

1. More emphasis by the faculty of dentistry AQU should be invested in the teaching methodologies. From the finding it is clear that the teaching is more teacher oriented than student oriented. It was also clear that there is a weakness in the clinical aspect. More emphasis should be made on the clinical aspect and more supervision on the students in this field. This will require upgrading the dental equipment and increasing the number of dental clinics.

2. The feedback process between teachers and students must be improved and criticism by the teachers has to be more constructive and reflective feedback. Students have to be part of the teaching process by listening to their feedback which is then invested in improving the negative aspects they relate to and continuing with implementing the positive aspects they relate to.

3. Actions to lower the stress of students during clinical sessions must be applied. Same goes for the academic lecture sessions. More emphasis on motivating the students and educating them about asking all the questions they might have with no restrictions.

4. Counseling services: A support system for the students who get stressed.

5. The timetable of the faculty of dentistry AQU must be better maintained, as the students reflected the school was not properly timetabled. In relation to exams designing the exam timetable during the semester in a defined period according to the university calendar. More free time allocated in the timetable of the students.

6. Student assessment tools and processes should be adopted. The student grading system is recommended to be reviewed and using letter grades based on ranking instead of marks out of 100 so that the students will not feel the system is unfair.

Outcome

1. More emphasis should be invested in working with special needs children and cooperating with institutions like Princess Basma care center and others that are hosting and delivering care to these patients.

2. Cheating and academic dishonesty must be practiced and emphasized at AQU faculty of dentistry; a zero tolerance policy must be applied.

3. Students should undergo a basic life support training course and be more familiar with preventing and managing dental and medical emergencies at the clinic.

4. In prosthodontics more emphasis should be placed on restoring teeth with partial dentures, complete dentures, and resin bonded bridges.

5. In conservative dentistry more emphasis and training should be given in the field of root restorations.

6. In endodontics more emphasis should be placed on multi rooted root canal treatment.

7. In periodontology more emphasis should be placed on treating early periodontal disease, deep scaling and root planing.

8. In orthodontics more emphasis should be placed on treatment planning, performing minor tooth movements, and performing space maintainers.

9. More emphasis should be given to the prevention and management of local anesthesia complications as well as preventing and managing dental emergencies.

10. Working on developing the students' interpersonal skills.

11. Teachers should have training in communication and interpersonal skills and how to give reflective feedback to the students.

12. Having social activities involving both the students and the teachers to reduce the stress the students have with their teachers.

13. More studies assessing the stress and stress factors among students.

14. Implementing DREEM on all the years at AQU faculty of dentistry.

15. Comparing DREEM scores between AQU and other universities in Palestine and other countries.

References

1. Albino, J. E**.,** Stephen K. Y., Laura M. N., Gene, A. K., Sandra, C. A., Lindsey, H., Bruce, H. & William, D. H. (2008). *Assessing Dental Students' Competence: Best Practice Recommendations in the Performance Assessment Literature and Investigation of Current Practices in Pre-doctoral Dental Education*: Journal of Dental Education; 72 (12), 1405-1435.

2. American Medical Association (AMA), (1991). Retrieved on 2012, Feb. 27th from www.nap.edu/openbook

3. Barnet, R. (1992). *Improving Higher Education: Total Quality Care*: Buckingham;SRHE & OU.

4. Beach MC, Sugarman J, Johnson RL, et al. Do patients treated with dignity report higher satisfaction, adherence, and receipt of preventive care? *Annals of Family Medicine*, July/August 2005;3(4):331-338

5. Bertolami, C.N. (2001). *Rationalizing the dental curriculum in light of current diseaseprevalence and patient demand for treatment*: Form vs. Content. Journal of Dental Education; 65(8)

6. Carranza, S. L & The University of Wisconsin. (2008). *A Grounded Theory of High Quality Distance Education Programs: Student Perspectives*. Ann   Arbor, Michigan: ProQuest.

7. Chambers, D.W., Geissberger, M. & Leknius, C.(2004). *Association amongst factors thought to be important by instructors in dental education and perceived effectiveness of these instructors by students:* European Journal of Dental Education; 8(4).

8. Daniels, R. (2004). *Nursing Fundamentals; Caring & Clinical Decision Making*: Belmont, CA: Cengage Learning.

9. Deepaka, U. & Manish, B., (2011). *Service Quality Perception and Customer Satisfaction in Life Insurance Companies in India*, Ajmer: MDS University.EFA*, (2005)*

10. *Understanding Education Quality: Retrieved on 2012 Feb, from* www.unesco.org/education/gmr_download/chapter1.

11. Fallon, W.F Jr., Wears, R.L & Tepas, J.J. (1993). *Resident supervision in the operating room: does this impact on outcome*? Journal of Trauma;35(4).

12. Fraenkel, J.R & Wallen, N.E. (2003). *How to design and evaluate research in education*: Boston: McGraw Hill.

13. Gerbert, B., Badner, V., Maguire, B., Martinoff, J., Wycoff, S & Crawford W. (1987). *Recent graduates' evaluation of their dental school education*: Journal of Dental Education; 51(12).

14. Harvey, L. (1998). *An Assessment of Past and Current Approaches to Quality in Higher Education*: Australian Journal of Education; 42 (3), 237-255.

15. Harvey, L. & Green, D.(1993). *Defining 'Quality'*: Assessment and Evaluation in Higher Education; 18 (1), 9-34.

16. Hashim, R. (2005). *Patient satisfaction with dental services at Ajman University, United Arab Emirates:* Eastern Mediterranean Health Journal, Vol. 11, Nos 5/6:pp. 913-921.

17. Hashweh, M. & Hashwehan, M. (2003). *Assessment of Higher Education Needs in the West Bank and Gaza:* United States Agency for International Development, pp. 1-146.

18. Henzi, D., Davis, E., Jasinevicius, R., Hendricson, W., Cintron, L. & Isaacs, M. (2005).

Appraisal of the dental school learning environment: the students' view: Journal of Dental Education; 69(10).

19. Hirons, A. & Velleman, R. (1993). *Factors which might contribute to effective supervision*: Clinical Psychology Forum.

20. Institute for Working Future (IWF), (2012). *The Concept of Quality*: Retrieved on 2012 Feb. 26th from http://www.marcbowles.org/courses/advdi

21. Jain L, Jain M, Mathur A, Paiwal K, Duraiswamy P, Kulkarni S: *Perceptions of dental students towards learning environment in an Indian scenario*. Dent Res J (Isfahan); 2010;7(2):56-63

22. Karydis, A., Kombolo-Kodovazeniti, M., Hatzigeorgiou, D. & Panis, V. (2001). *Expectations and Perceptions of Greek Patients Regarding the Quality of Dental Healthy Care*: International journal for quality in Health Care; Volume 13, Number 5:pp.409-416.

23. Khan, J.S., Tabasum, S., Yousafzai, U.K., & Fatima, M. (2011). DREEM ON: Validation of the Dundee Ready Education Environment Measure in Pakistan. *JPMA,* 61(9): 885-888.

24. Kilminister, S., Jolly, B., van der Vleuten. (2002). *CPM, A framework for effective training for supervisors*: Med Teacher; 24(4).

25. Klineberg, I., Massey, W., Thomas, M. & Cockrell, D. (2002). *A new era of dental education at the University of Sydney, Australia*: Australian Dental Journal; 47(3).

26. Koch, G. (2009). *Pediatric Dentistry: A Clinical Approach.* London: John Wiley and Sons.

27. Kossioni, A. R., Varela, R., Ekonomu, I., Lyrakos, G. & Dimoliatis, D.(2010). *Students'*
perceptions of the educational environment in a Greek Dental School, as measured by
DREEM: European Journal of Dental Education ISSN 1396-5883.

28. Lai N, Nalliah S, Jutti RC, Hla Y, Lim VKE. *The educational environment and self-*
perceived clinical competence of senior medical students in a Malaysian medical school.
Educ Health 2009: 22: 148.

29. Larissa, H. (2003). *Defining quality: do child care providers' beliefs support the*
research regarding quality? New York: Texas Tech University.

30. Levinson W, Chaumeton N.(1999) & Stewart MA. (1995) in Asnani, MR (2009) *Patient-*
Physician Communication. West Indian Med J; 58 (4): 357

31. Lokuhetty, M.D., Warnakulasuriya, S.P, Perera, R.I., De Silva, H.T., & Wijesinghe, H.D.
(2010).

32. Students' perception of the educational environment in a Medical Faculty with an
innovative curriculum in Sri Lanka. *South-East Asian Journal of Medical Education*,
4(1): 9-16.

33. Maggirias J, Locker D. Psychological factors and perceptions of pain associated with
dental treatment. Community Dent Oral Epidemiol. 2002;30(2):151-9.

34. Mangum, S., Garrison, C., Lind, C. & Hilton, H.G.(1997). *First impressions of the nurse*
and nursing care: Journal of Nursing Care Quality 11(5).

35. Marsh, H.W. (1987). *Students' evaluations of university teaching: research findings, methodological issues, and directions for future research*: International Journal Educational Resources.

36. Marshall, R.E. (1978). *Measuring the medical school learning environment*: Journal of Medical Education

37. Mascarenhas, K. A. (2001.) *Patient Satisfaction with the Comprehensive Care Model of Dental Care Delivery:* Journal of Dental Education, Volume 65, No. 11.

38. Mayberry, W.E. (1973). *Some dimensions of clinical teaching*: Journal of Dentistry Education.

39. McAleer S, Roff S. *A practical guide to using the Dundee Ready Education Environment Measure (DREEM). In: Genn JM ed. Curriculum, environment, climate, quality and change in medical education: A unifying perspective*. AMEE Education Guide No. 23. Dundee: Association for Medical Education in Europe, 2001: 23.

40. McComb, J. (2004). *Quality Education Model*, *Background Brief;* 2(1): Retrieved on 9th April, 2012 from:

http://library.state.or.us/repository/2011/201106161600194/index.pdf

41. McGrath C.P.J. and Corbet E.F., *Do dental graduates of the University of Hong Kong (1997-2001) perceive themselves prepared for dental practice?* Hong Kong Dental Journal, 2005, 2 :84-91.

42. McLaughlin, C. & Kaluzny, A. (2006). *Continuous quality improvement in health care: theory, implementations, and applications:* New York: Jones & Bartlett Learning.

43. Mullins, G., Wetherell, J. & Robbe, I. (2003). *Learning in the clinical environment*. In: Sweet,

44. J., Huttly, S. & Taylor, I. eds. *Effective learning and teaching in medical, dental and veterinary education*. London: Kogan.

45. Myers, B. (1977). *Beliefs of dental faculty and students about effective clinical teaching Behaviors:* Journal of Dental Education; 41(2):68-76.

46. Nigvekar, A. S. (1996). *Quality Assurance in Higher Education: An Indian Dilemma*: Journal of Higher Education*;* 19 (3), 353-364.

47. Nihalani, M. (2011). *Quality in Higher Education: Building Practices of Learning in the Colleges of India*: Retrieved on 13th April 2012 from: http://www.grin.com/en/e-book/184474/quality-in-higher-education-building-practices-of-learning-in-the-colleges.

48. NHS Scotland, (2007). *Introduction to Clinical Governance; what is quality in*

49. *Healthcare*: Retrieved on 2012 Feb. 26th

http://www.clinicalgovernance.scot.nhs.org/section.

50. O'Connor, P., Green, T.G. & Miller, D.M.(1998). *The applied sciences of clinical teaching in dentistry:* Gainesville, FL: RSM Press.

51. Olupeliyawa, A.M., Gooneratne, I.K., Thilakaratne, S., Wickramasinghe, K., Karunathilake, I.M.& Samarasekera, D.D. (2007). *Graduates' perceptions regarding their final year training*: South

52. East Asian Journal of Medical Education; 1(1), pp. 25-29.

53. Orsingher, C. (2006). *Assessing Quality in European Higher Education Institutions: Dissemination, Methods and Procedures*: Bologna, Springer.

54. Ostapczuk, M.S., Hugger, A., de Bruin, J., Ritz-Timme, S., & Rotthoff, T. (2011).*DREEM on, dentists! Students' perceptions of the educational environment in a*

German dental school as measured by the Dundee Ready Education Environment

Measure. European Journal of Dental Education, 15: 1-11.

55. Parri, J. (2006). *Quality in Higher Education*: Retrieved on 2012 Feb. 26th from

www.leidykla.vu.lt/fileadmin/Vadyba/11/Janne_Parri.pdf.

56. Palestine Ministry of Education and Higher Education (PMEHE),(2008). *Education*

Development Strategic Plan 2008–2012: Towards Quality Education for Development:

Ministry of Education and Higher Education. Palestine Ministry of Education and Higher

Education . *Higher Education Financing Strategy 2001*. Retrieved on 24th November

2011 from: http://www.tep.ps/pdfs/Higher%20Education%20Financing%20Strategy.pdf

57. Paxton, P. (1993). *Total Quality Management and Invitational Theory: Common Ground*:

Journal of Invitational Theory and Practice*;* 2 (1): Retrieved on 9th April 2012 from:

http://www.invitationaleducation.net/journal/v21p29.htm

58. Perception (disambiguation). (2013, April 22). In *Wikipedia, The Free Encyclopedia*.

Retrieved 21:15, April 22, 2013, from

http://en.wikipedia.org/w/index.php?title=Perception_(disambiguation)&oldid=55169146

6

59. Pillai, C. R. (2006). *Understanding Quality in Higher Education*: Personal

Communication to NAAC.

60. Polit, D., & Beck, C. (2004). Nursing research: Principles and methods (5th ed.).

Philadelphia: Lippincott Williams & Wilkins.

61. Prayoonwong, T. & Nimnuan, C. (2010). *Dental students' perceptions of Learning Environment: South‑East Asian*: Journal of Medical Education; Volume 1, Number 1: pp. 49-54.

62. Priya, H., Chauhan, A. & Kumar, M.(2011*). Factors Affecting Dental Satisfaction Among Malaysian Dental Students:* International Journal of Dental Clinics; 3(2):5-8.

63. Raosoft website, data web survey software for gathering information free tool sample size calculator reference. Accessed 2012.
http://www.raosoft.com/samplesize.html?nosurvey

64. Rasheed, S. (2000). *Defining Quality in Education; Working paper series:* New York: United Nations Children's Fund.

65. *Riley, K. (1994). Measuring quality: Education indicators‑United Kingdom and International perspectives: New York: Taylor $ Francis.*

66. *Rumelhart, D.E. & Norman, D.A.(1978). Accretion, tuning and restructuring: three modes of learning*. In: Klatzky, R. & Cotton, J.W, eds. *Semantic factors in cognition*. Hillsdale, NJ: Lawrence Erlbaum Associates.

67. Sallis, E. (1996). *Total Quality Management in Education, 2nd Edition*: London; Kogan.

68. *Schönwetter, D.J. (1996). Effective instruction and student differences in the college Classroom*: Department of Graduate Studies. Winnipeg, Manitoba, Canada: University of Manitoba.

69. Sharma, D. (2006).*Quality In Education: The Quality Circle Way*. New Delhi: Gyan Publishing House.

70. *Sherwood, J.V. (1987). Facilitative effects of gaze upon learning; Perception Motor Skills.*

71. Soemantri, D., Roff, S., & McAleer, S. (2008). Student perceptions' of the educational environment in the midst of curriculum change. *Med J Indones*, 17(1): 57-63.

72. Sower, V.(2005). *Essentials of Quality: With cases and experimental exercises*: John Wiley & Son Inc.

73. Specialty (dentistry). (2013, March 11). In *Wikipedia, The Free Encyclopedia*. Retrieved 08:55, April 17, 2013,

from http://en.wikipedia.org/w/index.php?title=Specialty_(dentistry)&oldid=543506893

74. Staniszewska, S. & Ahmed, L.(1998). *Patient expectation and satisfaction with health care:* Nursing Standards; 12: 34-38.

75. Stella, A. & Gnanam, A.(2004). *Quality Assurance in Distance Education*: *The Challenges to be addressed*: Higher Education; 47 (2), 143-160.

76. Stewart, D., Vries, J., Singer, D., Degen, G. & Wener, P. (2006). *Canadian Dental Students' Perceptions of their Learning Environment and Psychological Functioning Over Time*: Journal of Dental Education; Volume 70, Number 9:pp.972-980.

77. Stewart, J., O'Halloran, C., Bartob, J.R., Singleton, S.J, Harrigan, P. & Spencer, J.(2000). *Clarifying the concepts of confidence and competence to produce appropriate self evaluation measurement scales*: Medical Education 34.

78. *Talwar, D.S. & Weilin, S.(2005). Qualities of an effective teacher: the dental faculty perspective:* Journal of Dental Education; 69:116.

79. Taylor, P.G. (1985). *Does the way house staff physicians dress influence the way patients initially perceive their competence*? Ped Notes 9:1-17.

80. Tedesco, L.A., Garlapo, D.A., Albino, J.E., Conny, D.J. & Wood, R.H.(1982). *Dimensions of effective preclinical teaching*: Journal of Dental Education.

81. Tiberius, R.G., Sinai, J. & Flak, E.A.(2002). *The role of teacher-learner relationships in medical education*: In: Norman, G.R, van der Vleuten, C.P.M & Newble, D.I., eds. *International handbook of research in medical education*. Dordecht, the Netherlands: Kluwer Academic Publishers.

82. University of Hong Kong,(2002). *Growing with Hong Kong: the University and its graduates: the first 90 years*: Hong Kong University Press.

83. Urquhart, C. (1999). *Defining quality: the perceptions of expert nurse clinicians working in the emergency department of a small community hospital*: Monash University.

84. Walsh ,K.C. (1993) . *Projecting your best professional image*: Imprint 40(5): 46-9.

85. What are the dental specialities, Michigan dental association. Retrieved January 15, 2013, from

http://www.smilemichigan.com/FindaDentist/ChoosinganMDADentist/WhataretheDental Specialties.aspx

86. WHO,(2000). Health System: Improving Performance, Geneva, Switzerland BiologyOnline. Retrieved on 2012 Feb. 26th from http://www.biology-online.org/dictionary/Patient_satisfaction.

87. Yusoff, M.S. (2012). The Dundee Ready Educational Environment Measure: A ConfirmatoryFactor Analysis in a Sample of Malaysian Medical Students. *International Journal of Humanities and Social Science*, 2(16): 313-321.

88. Zhang, S. (2010). Analysis on the Concepts and Theories of the Quality of Graduate Education, China: Asian Social Sciences.

Appendices

Annex 1

Informed consent

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العقد المستخدم للمشاركين في الدراسة

جودة الخدمات المقدمه من كلية طب الأسنان جامعة القدس

يقوم طارق رابي/ طالب ماجيستير في السياسات و الادارة الصحية بعمل دراسة تقييم جودة الخدمات التعليميه لطلاب كلية طب الأسنان وجودة الخدمات المقدمه للمرضى .أنت مدعو للمشاركه في هذه الدراسة ولكن قبل أن تقرر المشاركه في هذه الدراسة أم لا أنت بحاجة أن تتعرف على المعلومات التاليه :

ماهو موضوع الدراسة ؟

يهدف الباحث إلى تعرف على تجربتك الشخصية أثناء دراستك والمعيقات والمشاكل التعليمية وجودة التعليم المقدم في كلية طب الأسنان .

سيتم حفظ كل المعلومات التي سنحصل عليها بشكل سري للغاية لا يمكن لأحد الاطلاع عليها . كل المعلومات ستحول لرموز ولن يذكر اسمك. إذا كان عندك أي إستفسار نحن على إستعداد للإجابة. شكرا لكم

طارق رابي

0522444133

</div>

Annex 2

Patient questionnaire

<div dir="rtl">

تقييم جودة الخدمات المقدمة للمرضى في عيادات طب الاسنان ـجامعة القدس

يقوم طارق رابي/ طالب ماجستير في السياسات و الادارة الصحية بعمل دراسة تقييم جودة الخدمات التعليميه لطلاب كلية طب الأسنان وجودة الخدمات المقدمه للمرضى .أنت مدعو للمشاركه في هذه الدراسة.المشاركه هي غير اجباريه بل هي طوعية، وسواء وافقت على المشاركه أم لا ، سيبقى ذلك قراراً شخصياً لا يناقش مع اي شخص أخر.

في حالة موافقتك على المشاركة في الدراسة أرجو تعبئة المعلومات التالية:

1. الجنس ☐ ذكر ☐ أنثى   2. العمر

2. هل أنت طالب في جامعة القدس ☐ نعم ☐ لا

3. هل هذه زيارتك الأولى للعيادات في جامعة القدس ☐ نعم ☐ لا

4. سبب الزيارة: ☐ علاج روتيني ☐ علاج طارئ

5. العيادة التي تزورها للعلاج:

☐ عيادات العلاج التحفظي(حشوات)

☐علاج العصب

☐ التعويضات السنيه

☐ التشخيص

☐ التقويم

☐ الجراحة

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أرجو الإجابة على جميع الاسئلة بوضع أشارة على الرقم الدال على مدى موافقتك على العبارات التالية مع العلم بأن الطاقم:

يعني الفريق المكون من طبيب الاسنان المشرف والطالب الذي يقدم العلاج لك

الإجابة من صفر إلى 4
4 يعني موافقتك بشدة والرضا الكامل
3 توافق
2 إذا كنت غير متأكد أو شعورك حيادي
1 لا توافق
صفر يعني لا توافق كلياً وعدم الرضا كلياً

اوافق بشدة	اوافق	حيادي/غير متاكد	لا اوافق	لا اوافق نهائيا	السؤال
4	3	2	1	0	1- كان من الممكن اختيار طريقة علاج افضل لمعالجة مشكلة أسناني في عيادات طب الاسنان / جامعة القدس
4	3	2	1	0	2- يتم الكشف على المرضى بحرص شديد في عيادة كلية طب الاسنان في جامعة القدس
4	3	2	1	0	3- الالم الذي ممكن ان اتعرض له قد يكون سببا في تجنبي الذهاب الى عيادة طب الاسنان
4	3	2	1	0	4- عادة ما يضطر المرضى للانتظار لفترات طويلة في عيادات الاسنان التابعة لجامعة القدس
4	3	2	1	0	5- يتم التعامل مع المرضى باحترام في عيادات كلية طب الاسنان \جامعة القدس
4	3	2	1	0	6- احد الاسباب التي دفعتني للعلاج في عيادات الاسنان الخاصة بجامعة القدس قلة اطباء الاسنان في منطقتي السكنية
4	3	2	1	0	7- يجب بذل المزيد من الجهد للحد من نسبة الالم التي يشعر بها المرضى الذين يتلقون العلاج في عيادات طب الاسنان \ جامعة القدس
4	3	2	1	0	8- يسهل الوصول الى موقع عيادات طب الاسنان في جامعة القدس
4	3	2	1	0	9- يحاول طاقم طب الاسنان في جامعة القدس تجنيب مرضاهم دفع نفقات جانبية و ليست بالضرورية
4	3	2	1	0	10- طاقم طب الاسنان في جامعة القدس ليسوا دقيقين كما ينبغي في تقديم العلاج

4	3	2	1	0	11- اتلقى العلاج في عيادات الاسنان التابعة لجامعة القدس في كل زيارة على يد نفس الطاقم
4	3	2	1	0	12- مواقيت العمل في عيادات طب الاسنان \جامعة القدس مناسبة لمعظم المرضى
4	3	2	1	0	13- يقوم طاقم كلية طب الاسنان بشرح خطة العلاج قبل البدء بالعلاج
4	3	2	1	0	14- يقوم طاقم كلية طب الاسنان بتوضيح التكلفة المادية للمرضى قبل البدء بالعلاج
4	3	2	1	0	15- على طاقم كلية طب الاسنان بذل المزيد من الجهد لتقليل المشاكل السنية عند المرضى ....
4	3	2	1	0	16- عيادة طب الاسنان التابعة لجامعة القدس حديثة جدا و عصرية
4	3	2	1	0	17- بالنسبة لي الشعور بالالم ليس بالامر المقلق لدى ذهابي لتلقي العلاج السني في عيادة طب الاسنان التابعة لجامعة القدس
4	3	2	1	0	18- من السهل الحصول على مواصلات عامة للوصول إلى عيادات طب الأسنان في جامعة القدس
4	3	2	1	0	19- هناك اشارت ارشادية في الطريق للوصول إلى عيادات طب الاسنان التابعة لجامعة القدس
4	3	2	1	0	20- هناك اشارت داخل عيادات طب الاسنان التابعة لجامعة القدس
4	3	2	1	0	21- يعطيني طاقم كلية طب الاسنان في جامعة القدس الفرصة للكلام عن مشكلتي
4	3	2	1	0	22- يتفحص طاقم كلية طب الاسنان في جامعة القدس كل مشاكلي الصحية بعناية
4	3	2	1	0	23- يستعمل طاقم كلية طب الاسنان في جامعة القدس الكمامة و الكفوف الطبية طوال فترة العلاج
4	3	2	1	0	24- اشعر ان عيادات طب الاسنان نظيفة و الادوات معقمة
4	3	2	1	0	25- موظف الاستقبال يعامل المرضي بلطف

4	3	2	1	0	26- موظف الاستقبال يجيب على استفسارات المرضي
4	3	2	1	0	27- هناك اماكن مخصصة للانتظار
4	3	2	1	0	28- اماكن الانتظار مريحة و ملائمة

29 انصح الأخرين بالعلاج في هذا عيادات طب الاسنان التابعة لجامعة القدس☐ نعم ☐ لا

30. أرجو تقييم جودة الخدمات في عيادات كلية طب الأسنان جامعة القدس 1 2 3 4 5 6 7 8 9 10 (10 ممتاز 0 سيئ جدا)

Annex 3

Graduate Questionnaire

جودة الخدمات المقدمه من كلية طب الأسنان جامعة القدس

يقوم طارق رابي/ طالب ماجستير في السياسات و الادارة الصحية بعمل دراسة تقييم جودة الخدمات التعليميه لطلاب كلية طب الأسنان وجودة الخدمات المقدمه للمرضى . أنت مدعو للمشاركه في هذه الدراسة.المشاركه هي غير اجباريه بل هي طوعية، وسواء وافقت على المشاركه أم لا ، سيبقى ذلك قراراً شخصياً لا يناقش مع اي شخص أخر.

سيتم حفظ كل المعلومات التي سنحصل عليها بشكل سري للغاية لا يمكن لأحد الاطلاع عليها . كل المعلومات ستحول لرموز ولن يذكر اسمك ، . إذا كان عندك أي إستفسار نحن على إستعداد للإجابة. شكرا لكم

طارق رابي

0522444133

0 Very poorly 1 poorly 2 well 3 Very well   Gender   M   F

How well prepared do you feel to:
General patient management

1. Take and interpret medical, social, and dental history	0	1	2	3
2. Communicate effectively with patients.	0	1	2	3
3. Discuss treatment plans and get informed consent .	0	1	2	3
4. Discuss fees and payment options with patients .	0	1	2	3
5. Develop a sequential treatment plan.	0	1	2	3
6. Interpret tests and history to make a diagnosis.	0	1	2	3
7. Identify and address patients' chief complaints.	0	1	2	3

Practice management

1. Maintain accurate confidential patient records	0	1	2	3
2. Communicate effectively with practice staff	0	1	2	3
3. Communicate effectively with colleagues	0	1	2	3

4. Manage dental staff   0   1   2   3

5. Deal with finances of your clinic   0   1   2   3

6. Select and monitor infection control procedures   0   1   2   3

7. Prevent dental workplace hazards   0   1   2   3
8. Write laboratory prescriptions and evaluate laboratory work   0   1   2   3

9. Critically evaluate dental literature to informed dental practice and policy 0   1   2   3

10. Apply evidence-based dentistry   0   1   2   3

Periodontology and dental public health
11. Treat early periodontal treatment   0   1   2   3

12. Perform deep scaling, root planning   0   1   2   3

13. Perform periodontal surgery for home care   0   1   2   3

14. Perform periodontal surgery for crown lengthening   0   1   2   3

15. Perform oral hygiene instruction and diet analysis   0   1   2   3

16. Provide and monitor preventive treatment   0   1   2   3

Conservative dentistry
17. Restore teeth with amalgam restorations   0   1   2   3

18. Restore teeth with resin composite restorations   0   1   2   3

19. Perform root surface restorations   0   1   2   3

20. Perform single-root canal treatment   0   1   2   3

21. Perform multi-root canal treatment   0   1   2   3

22. Restore teeth with single crowns   0   1   2   3

23. Restore teeth with post-and-core crowns   0   1   2   3

Oral rehabilitation
24. Replace teeth with partial dentures   0   1   2   3

25. Replace teeth with complete dentures	0	1	2	3
26. Replace teeth with implants (prosthetics)	0	1	2	3
27. Replace teeth with conventional bridges	0	1	2	3
28. Replace teeth with resin-bonded bridges	0	1	2	3
29. Restore an occlusal vertical dimension	0	1	2	3

Orthodontics

30. Perform orthodontic treatment planning	0	1	2	3
31. Perform space maintenance/regaining	0	1	2	3
32. Perform minor tooth movement	0	1	2	3
33. Perform full-arch alignment	0	1	2	3

Managing children and special needs patients

34. Manage anxious dental patients	0	1	2	3
35. Manage child patients	0	1	2	3
36. Manage elderly patients	0	1	2	3
37. Manage medically compromised patients	0	1	2	3
38. Manage mentally or physically disabled patients	0	1	2	3
39. Recognize, report, and follow up neglect and abuse cases	0	1	2	3

Oral and maxillofacial surgery

40. Manage acute pain/infection	0	1	2	3
41. Perform simple extraction	0	1	2	3
42. Extract impacted third molars	0	1	2	3
43. Manage complications of oral surgery	0	1	2	3
44. Manage chronic orofacial pain	0	1	2	3
45. Identify and manage oral pathology	0	1	2	3

46. Perform soft-tissue biopsies   0   1   2   3

47. Manage trauma to dentofacial complex   0   1   2   3

Local anesthesia

48. Administer local anesthetics (LA)   0   1   2   3

49. Prevent and manage LA complications   0   1   2   3

Drug and emergency management

50. Prescribe drugs   0   1   2   3

51. Manage medical emergencies   0   1   2   3

52. Prevent and manage dental emergencies   0   1   2   3

53. You have received adequate clinical training   1 2 3 4 5

54. Your teachers were fair   1 2 3 4 5

55. The faculty teachers delivered a good education to you   1 2 3 4 5

56. your satisfaction with the education and services you received while being a student

         1 2 3 4 5 6 7 8 9 10

57. *Compared to your colleagues who graduated from other faculties you consider yourself
                ☐   ☐   ☐
  (theoretical wise)   Better   Same level   below their level

58. *Compared to your colleagues who graduated from other faculties you consider yourself
                ☐   ☐   ☐
  (clinical wise)   Better   Same level   below their level

59. *Do you believe graduates from other faculties received better education   ☐Yes ☐No

60. *Do you believe graduates from other faculties received better clinical training☐Yes☐No

61. *It is easier for graduate from other faculties to find job☐   Y☐   N☐   Not necessarily

62. *From 1to 10 how do you rate the quality of services at Al-Quds University dental clinics

    1 2 3 4 5 6 7 8 9 10   (1 is bad 10 is excellent)

Annex 4

Student questionnaires

يقوم طارق رابي/ طالب ماجستير في السياسات و الادارة الصحية بعمل دراسة تقييم جودة الخدمات التعليميه لطلاب كلية طب الأسنان وجودة الخدمات المقدمه للمرضى . أنت مدعو للمشاركه في هذه الدراسة.المشاركه هي غير اجباريه بل هي طوعية، وسواء وافقت على المشاركه أم لا ، سيبقى ذلك قراراً شخصياً لا يناقش مع اي شخص أخر.

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طارق رابي

0522444133

في حالة موافقتك على المشاركة في الدراسة أرجو تعبئة المعلومات التالية:

الجنس ☐ ذكر ☐ أنثى

السنة الدراسية ☐ 4 ☐ 5

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Please indicate whether you **Strongly Agree**, **Agree**, are **Unsure**, **Disagree** or **Strongly Disagree** with the statements below. It is about how YOU perceive the course.

Please tick the appropriate box.

		4 Strongly Agree	3 Agree	2 Uncertain	1 Disagree	0 Strongly Disagree
1	I am encouraged to participate in class	☐	☐	☐	☐	☐
2	The teachers are knowledgeable	☐	☐	☐	☐	☐
3	There is a good support system for students who get stressed	☐	☐	☐	☐	☐
4	I am too tired to enjoy the course	☐	☐	☐	☐	☐
5	Learning strategies which worked for me before continue to work for me now	☐	☐	☐	☐	☐
6	The teachers are patient with patients	☐	☐	☐	☐	☐
7	The teaching is often stimulating	☐	☐	☐	☐	☐
8	The teachers ridicule the students	☐	☐	☐	☐	☐
9	The teachers are authoritarian	☐	☐	☐	☐	☐
10	I am confident about my passing this year	☐	☐	☐	☐	☐
11	The atmosphere is relaxed during the ward teaching	☐	☐	☐	☐	☐
12	This school is well timetabled	☐	☐	☐	☐	☐
13	The teaching is student centred	☐	☐	☐	☐	☐
14	I am rarely bored on this course	☐	☐	☐	☐	☐
15	I have good friends in this school	☐	☐	☐	☐	☐
16	The teaching helps to develop my competence	☐	☐	☐	☐	☐
17	Cheating is a problem in this school	☐	☐	☐	☐	☐
18	The teachers have good communications skills with patients	☐	☐	☐	☐	☐
19	My social life is good	☐	☐	☐	☐	☐
20	The teaching is well focused	☐	☐	☐	☐	☐
21	I feel I am being well prepared for my profession	☐	☐	☐	☐	☐

		Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
22	The teaching helps to develop my confidence	☐	☐	☐	☐	☐
23	The atmosphere is relaxed during lectures	☐	☐	☐	☐	☐
24	The teaching time is put to good use	☐	☐	☐	☐	☐
25	The teaching over-emphasises factual learning	☐	☐	☐	☐	☐
26	Last Year's work has been a good preparation for this year's work	☐	☐	☐	☐	☐
27	I am able to memorise all I need	☐	☐	☐	☐	☐
28	I seldom feel lonely	☐	☐	☐	☐	☐
29	The teachers are good at providing feedback to students	☐	☐	☐	☐	☐
30	There are opportunities for me to develop interpersonal skills	☐	☐	☐	☐	☐
31	I have learned a lot about empathy in my profession	☐	☐	☐	☐	☐
32	The teachers provide constructive criticism here	☐	☐	☐	☐	☐
33	I feel comfortable in class socially	☐	☐	☐	☐	☐
34	The atmosphere is relaxed during seminars/tutorials	☐	☐	☐	☐	☐
35	I find the experience disappointing	☐	☐	☐	☐	☐
36	I am able to concentrate well	☐	☐	☐	☐	☐
37	The teachers give clear examples	☐	☐	☐	☐	☐
38	I am clear about the learning objectives of the course	☐	☐	☐	☐	☐
39	The teachers get angry in class	☐	☐	☐	☐	☐
40	The teachers are well prepared for their classes	☐	☐	☐	☐	☐
41	My problem solving skills are being well developed here	☐	☐	☐	☐	☐
42	The enjoyment outweighs the stress of the course	☐	☐	☐	☐	☐

43	The atmosphere motivates me as a learner	☐	☐	☐	☐	☐
44	The teaching encourages me to be an active learner	☐	☐	☐	☐	☐
45	Much of what I have to learn seems relevant to a career in healthcare	☐	☐	☐	☐	☐
46	My accommodation is pleasant	☐	☐	☐	☐	☐
47	Long term learning is emphasised over short term learning	☐	☐	☐	☐	☐
48	The teaching is too teacher-centred	☐	☐	☐	☐	☐
49	I feel able to ask the questions I want	☐	☐	☐	☐	☐
50	The students irritate the teachers	☐	☐	☐	☐	☐

Annex 5

Experts that evaluated questionnaires

Dr. Motasem Hamdan – Al Quds University

Dr Nuha Al Sharif – Al Quds University

Dr Khuloud Khayyat Dajani - Al Quds University

Dr Osama Abu Gharbiyeh – Dean Faculty of Dentistry Arab American University

Dr. Mahmoud Abu Taa – Head of department Surgery and Periodontology Arab American University