

Sudan Medical Specialization Board (Smsb)
Council of Oral and Maxillofacial Surgery

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DISCLAIMER

I hereby declare that this thesis submitted for the MD degree at Sudan Medical Specialization Board is my own work and effort and that it has not been submitted anywhere for any award. Where other sources of information have been used they have been acknowledged.

Candidate name: Mohammed Hassan Ibrahim Aljezooli

Date: September 2012

DEDICATION

the memory of my father..

Hassan Ibrahim Aljezooli ...

For planting the seeds of self-dependence and thirst for success inside me

To my mother.. Hayat Makawi..

For her great sacrifices, warmth and

Devotion for our family...

To my wife Amal... for her love, understanding

and patience with my absence....

To Talia and Hassan .. my reasons for being

To my sisters. Intesar, Eshraga. Najla and Mai.. For their unlimited support when needed..

To my friends ...with my love.

ACKNOWLEDGEMENT

No accomplishment is ever complete without expressing appreciation and gratitude to the teacher who inspires us to achieve our potential, to the mentor who leads the way and to the friend who extends a helping hand. Indeed, their price-less contributions pave the way for us to succeed”

No words could express my gratitude for my supervisor Mr. Abdul Aal Mohamed Saied. I would like to thank him for his inspiration, insight, humor and support during this study. His love and defense of our specialty was a strong motivation for me to be under his supervision in this study.

My thanks also extend to medical students and medical colleagues for their participation in this study in spite of their work load.

I would like also to thank my friends for their strong support and encouragement.

ABBREVIATIONS

OMFS: Oral and Maxillofacial surgery

GMP: General Medical Practitioner

MD: Medical Degree

DD: Dental Degree

OMF: Oral and Maxillofacial

IAOMS: International Association of Oral and Maxillofacial Surgeons

ADA: American Dental Association

AAOMS: American Association of Oral and Maxillofacial Surgeons

ABSTRACT

Background: Oral and maxillofacial surgery (OMFS) is a relatively recent specialty in Sudan. Despite its great contribution in health services, difficulties are experienced due to the lack of knowledge of the healthcare professionals and medical students as well as the public concerning the scope of OMFS.

Objective

General objectives:

- a) To assess the awareness of the healthcare professional, medical students and dental students about the scope of OMFS.
- b) To bridge the gap of knowledge between the medical profession and the specialty of OMF.

Specific objective:

1. To increase the knowledge of the medical professionals by establishing OMFS departments in general hospitals.
2. To address medical schools to include a module of OMFS in the undergraduate curriculum.
3. To include lectures and shifts to attend referred clinics and operating sessions at OMFS units for postgraduates.
4. To include OMFS as an elective rotation in the internship period.

Materials and methods: The study was conducted at Khartoum State. A single paper of a questionnaire in English was given to fifty medical specialist, fifty medical residents in different specialties (internal medicine, general surgery, neuro-surgery, ENT surgery, plastic surgery, pediatrics, orthopedics, emergency medicine and obstetrics and gynecology), fifty medical general practitioners (MGP), fifty medical house officers, fifty medical students (final year) and fifty dental students (final year) giving the total number of three hundred responses. Twelve pathological conditions were chosen as follows: 1-simple and complicated tooth extraction 2-facial trauma 3- cysts of the oral and Para oral and head and neck region 4-correction of facial deformity 5-cleft lip and palate 6-oral cancer and head and neck malignancies 7-facial reconstruction 8- facial infections 9-dental implants 10- maxillary sinus tumors 11-tempromandibular joint disorders 12- salivary glands disorders. They were asked to choose the most appropriate specialty to treat the problem. Referral patterns were either to a plastic surgeon, ENT, OMF surgeon, General Surgeon, or other specialty.

Results: The data showed that there was general consensus among healthcare professionals and medical students about the role of OMFS in teeth extraction, dental implants and temporo-mandibular joint disorders. But for the role of OMFS in the treatment of facial trauma, facial infections, cysts of the oral and para oral region, cleft lip and palate, oral cancer and malignancies of the head and neck, facial defects reconstruction, maxillary sinus tumors and salivary glands disorders only 30.8% (the mean) of medical specialists, 47.1% (the mean) of medical residents, 55.3% (the mean) of medical general practitioners, 36% (the mean) of medical house officers and 34.4% (the mean) of medical students selected OMFS to treat these problems. Dental students showed high awareness of the scope of OMFS as 83.2% (the mean) of them selected OMF surgeons to treat the selected disorders.

Conclusion: While the dental students realize the scope of the specialty to a great extent, medical professionals and medical students are not fully aware of services which is supposed to be offered by the specialty to the patients. In order to ensure the proper referral of all patients, the specialty needs to be known by medical professionals and medical students.

Chapter 1

Introduction

Introduction

Oral and Maxillofacial Surgery (OMFS) is a rapidly expanding specialty over the world. The scope and the practice of OMF surgery has dramatically increased over the past several decades. However, the recognition of this specialty and what it can offer to the patients is still unknown to a large number of healthcare professionals and medical students. Studies published showed that there was limited awareness of OMFS among the public and within the medical profession, compared with the closely associated specialties of ear, nose and throat surgery (ENT) and plastic surgery [1-7]. The specialty had a very strong development in the past decades in areas such as treatment of trauma, dentofacial deformities, tumors, temporo-mandibular joint disorders and many completely new methods have been developed such as distraction osteogenesis, implant surgery, tissue engineering, reconstruction, and treatment of sleep apnea [8]. However, it is not clear how this development has been perceived among professionals in the society. Awareness of the scope of OMFS should lead to improved access and efficient delivery of a quality service. The medical colleagues need to have the necessary knowledge to make informed decisions about their patients' management. The scope of OMFS is very large with important linkage to many other disciplines in medicine and dentistry. Therefore it is very important that healthcare professionals should be aware of the existence and importance of the specialty.

Literature Review

Evolvement of omf surgery speciality

The development of oral and maxillofacial surgery into a specialty was aided by international strife in the first half of the century. It is interesting to note that the earliest "oral and maxillofacial surgeons" were all medical doctors, because at that time formal dental education did not exist. However, when formal education in dentistry began in the late 1800s [9], many of these oral and maxillofacial surgeons, realizing the importance of a dental background in the management of their patients, also began to obtain a dental degree [9]. In the World War I (WWI) the main role of the dentists was basic dental care that dentists provided for soldiers in preparation for deployment overseas, in addition they served as assistant medical officers at the front, caring for facial wounds, assisting with the debridement and closure of wounds, administering anesthetics, and sorting casualties. The development of trench warfare during WWI led to an increased incidence of wounds to the head and face, largely because the trenches gave some protection to the trunk and limbs but none to the exposed head [10,11]. An estimated 15% of all soldiers who survived the field and were evacuated for treatment during WWI received facial injuries [10,12]. Most of these patients were infected on arrival to the base hospital and delayed reconstruction was rarely performed and was highly unpredictable [10,13]. Early in the war, British and French soldiers with extensive facial injuries wore masks to hide their deformities [14]. Artists often painted the masks to appear as natural as possible.

Although the Surgeon General's Office investigated the use of masks and even trained technicians to create them, they found that patients actually preferred plastic reconstruction [15].

The complex nature of craniomaxillofacial injuries, which involve the hard and soft tissues of the face, dental structures, eyes and brain, was recognized early in the war by the French and British who established the first plastic and jaw unit at the 83rd General Hospital in Wimereux, France, under the direction of a French-American oral surgeon, Auguste Charles Valadier [14]. The British War Office later commissioned Major (Sir) Harold Delf Gillies to establish the first special center for maxillofacial injuries, initially at Cambridge Military Hospital in Aldershot and later at the Queens Hospital in Sidcup, England. Influenced by Valadier, the French plastic surgeon Hyppolyte Morestin, and the German oral surgeon Hugo Ganzer, Gillies made numerous advances in the surgical treatment of complex facial injuries and created a multidisciplinary unit that involved coordination by a maxillofacial surgeon (Gillies was actually an otolaryngologist), an oral surgeon and an anesthesiologist [10]. It was here that Captain (Sir) William Kelsey Fry, an oral surgeon influenced in part by the Armenian-American dentist Varaztad Kazanjian, laid the foundations of the dental treatment of maxillofacial injuries. On his first meeting with Gillies, Fry suggested, "I'll take the hard tissues. You take the soft." [10,16]. In practice, however, there was necessarily little distinction between the 2 surgeons; each became expert at managing both hard and soft tissue injuries. Their wartime experience provided the material for a classic textbook authored by Gillies titled *Plastic Surgery of the Face* and another by Fry called *The Dental Treatment of Maxillofacial Injuries*. These books outlined the principles of modern plastic and maxillofacial surgery that have been adopted worldwide. Their pioneering spirit, innovative thinking, and surgical excellence propelled them both to knighthood and would later earn Gillies the title of "father of modern plastic surgery." In the United States, Vilray Papin Blair, a general surgeon, was charged with organizing an effective military maxillofacial infrastructure for American troops in World War I. Modeled after Gillies' unit, and under the direction of the Surgeon General, Blair and Robert H. Ivy, a dual-degree oral surgeon, established a unique system of maxillofacial surgery involving general surgeons, oral surgeons, otolaryngologists, ophthalmologists, and neurosurgeons working together in specialized centers to repair and reconstruct the numerous head and neck injuries seen during the war [14]. Because the treatment guidelines for general and maxillofacial wounds differ considerably, it was recognized that patients treated by specially trained surgeons had better outcomes. Patients were transported prone to prevent airway obstruction (later, many patients would receive early tracheostomy); the general rule of aggressive debridement of gunshot wounds was discouraged in head wounds due to the need to preserve tissue; and the principles of early wound repair and stabilization of jaw fractures were emphasized in an effort to prevent infection and optimize

further reconstruction. Once the patient reached the base hospital, the first goal was to achieve correct occlusion and alignment of the jaws [10,17]. Subsequent soft tissue reconstruction using tubed pedicled flaps, as popularized by Gillies, was then performed. This basic organization scheme was further advanced in World War II, the Korean War, and the Vietnam conflict and remains the cornerstone of military maxillofacial surgery today. Indeed, it has been said that the genesis of craniomaxillofacial surgery as practiced throughout the non-Germanic world today has its origins in Aldershot and Sidcup, England [10,18].

In the years after World War II, stimulated by their experience caring for military maxillofacial injuries, oral surgeons began looking beyond exodontia and office procedures to expand their scope of civilian practice. Hospital work was seen as the way to accomplish this. Internships became residencies; exodontists became surgeons. But it was not all that easy. Physician surgical specialists (especially plastic surgeons and otolaryngologists) did not take kindly to the intrusion of dentists into their heretofore exclusive hospital milieu. Efforts were made to severely limit the oral surgeons' ability to admit patients to the do surgery for their patients; for example, patients had to be admitted under the care of a medical doctor; no incisions could be made outside of the oral cavity, fracture treatment was limited to closed reduction of mandibular fracture, and the treatment of oral cancer, salivary gland disorders, and cleft lip were excluded or had to be done in consultation with a plastic surgeon. However, oral surgeons were not about to take all this lying down [19].

It was decided that advanced education and training were the way to overcome the obstacles erected by those opposed to oral surgeons becoming part of the health care team. This approach began to produce noticeable results in the 1960s when residencies were extended from 2 to 3 and finally 4 years. Residents stayed in the hospital at night to be readily available for calls from the emergency department when maxillofacial trauma patients were brought for treatment. Physical diagnosis courses were taken with medical students. Rotations were arranged in anesthesia, internal medicine, general surgery, trauma, and in some hospitals, plastic surgery and/or otolaryngology. Operating room block time for oral surgery was arranged. Some Programs offered the opportunity for participation in research and earning master or doctorate degrees. Patient loads increased greatly, and other hospital departments and administrators began to recognize the value of oral surgery to overall patient care [19].

OMS systems of education and training

Oral and maxillofacial surgery is a unique specialty based on dentistry but requiring extensive surgical training. The specialty has become the referral base for a wide variety of the surgical and pathological problems in the maxillofacial region. Oral and Maxillofacial surgery has a unique position, including the dental and medical professions [20], creating controversy over whether dual medical and dental

qualifications are necessary [21]. While the core of oral and maxillofacial surgery is dento-alveolar, the knowledge of the oro-facial region forms the basis for the wider scope of the modern specialty [22]. It has been reported that oral and maxillofacial surgeons with medical qualifications while maintaining a broad scope tended to have a greater range of procedures within the major groupings [23]. Currently, no consensus has been reached regarding which track, single- or dual-degree, better prepares a resident for oral and maxillofacial surgery (OMS) practice. It is doubtful that such a consensus will ever exist [24]. The defenders of dual-degree thought it is advantageous to the OMS practice because of the following aspects: clinical scope (oncological and reconstructive surgery), access to fellowships and scientific-professionals societies, knowledge/evidence generation, surgical prerogatives, legal support and social acknowledgement [25]. Whether this dual qualification is needed to practice maxillofacial surgery or whether it is used as a "political" weapon to remove the tag of a "dentist" is still under debate [26]. The scope of practice for OMS is not, nor should it ever be, an issue of single or dual degree but must be related to the surgeon being trained to competence in the procedures performed. Future evolution will be based on continual advancements in the specialty and related areas as well as the development of new techniques. While the medical education may improve a core fund of general knowledge, the surgical residency and/or fellowship is the determinant of surgical competence and scope of practice.

According to the British Association of Oral and Maxillofacial Surgeons and the European Association for Cranio-Maxillofacial Surgery, OMFS is a medical specialty and practicing the full scope of the specialty requires training in both medicine and dentistry [10]. While Oral and maxillofacial surgery is defined by the American Dental Association (ADA) and the American Association of Oral and Maxillofacial Surgeons (AAOMS) as the specialty of dentistry that includes the diagnosis, surgical, and adjunctive treatment of diseases, injuries, and defects involving the functional and esthetic aspects of the bone and soft tissues of the oral and maxillofacial region. As a recognized specialty of dentistry, it is regulated by state dental boards [27].

Generally there are 4 basic systems of education and training in OMFS around the world [9]:

- a) That requiring only a dental degree.
- b) That requiring both a dental and medical degree.
- c) That requiring a medical degree and no or minimal dental training.
- d) That requiring a combination of dental and medical education but not degree based (stomatology).

According to the geographic diversity of these educational and training systems, and the motivations behind them, it is helpful to look at what is the current situation in various parts of the world.

For this purpose, one can divide the areas into Europe, Asia, South and Central America, and North America. Africa is not included because it is difficult to obtain information about the educational systems in that part of the world [9].

Europe: The greatest educational diversity in oral and maxillofacial surgery is present in the European region. Here one finds countries where only a dental degree has been required (Denmark, Sweden, The Netherlands), those where a medical degree is required (France), those in which oral and maxillofacial surgeons have either medical or dental degree (Italy, Portugal), those countries with only doubly qualified oral and maxillofacial surgeons (Austria, Belgium), and those that have both doubly and singly (DDS) qualified oral and maxillofacial surgeons (Germany, Spain, the United Kingdom, Greece, Finland, Hungary, Switzerland). Currently, the educational systems in some countries are being modified to include a medical degree in an attempt to comply with the medical directives of the European Union. It is of interest, however, that despite such changes, twelve of the fourteen countries mentioned have dentally trained oral surgeons.

Asia: One finds great similarity in education and training among most of the Asian nations. All programs are dentally based and most involve also doing research and obtaining a PhD or MSc. degree. The main exceptions are India, where only a dental degree is necessary and China which has the stomatology system. Of significance is the fact that these trained oral and maxillofacial surgeons practice the full scope of the specialty similar to what occurs in the European nations that require a medical degree.

South and Central America: In South and Central America, oral and maxillofacial surgery is a dentally based specialty. However, at the present time, there is considerable variation in both the length of clinical training and the scope of practice among the various nations.

North America: In the United States and Canada all training programs are dentally based and, although some oral and maxillofacial surgeons also obtain a medical degree, most have only a DDS degree. However, they all are able to have the same scope of practice. Moreover, in a situation that is unique compared to the European nations in which there are also both dual- and single-degree oral and maxillofacial surgeons, all are united under a single national organization, and many practice together rather than compete against each other. It is evident from this review that currently there is still great diversity in the education and training of the oral and maxillofacial surgeon in various parts of the world. Some of this diversity is because of a continuation of traditional systems began for various reasons many years ago, some is the result of the need to meet competition from other specialties, some is a matter of governmental policies and regulations and some is due to changes brought about by the need to meet the public demand for a more efficient delivery of certain services. Added to this are the pressures placed upon the members of the specialty by various national, regional and

international organizations with their own vested interests in what is the correct educational system. All of these factors have led to competition between the different groups rather than an attempt to achieve a common goal and this has served to significantly delay progress in the specialty [9]. The International Association of Oral and Maxillofacial Surgeons (IAOMS) is commonly described as the “umbrella” organization for the specialty internationally. Almost sixty representative national associations are presently affiliated. This means that any OMF surgeon in one of these countries can become a Fellow of the IAOMS if he or she meets the standards required for specialist practice that exist in that country [28]. IAOMS has developed agreed guidelines on the education and training of OMF surgeons internationally; guidelines which define and consolidate the specialty within surgery in general while preserving its unique dental base. That dental base represents the fundamental strength of oral and maxillofacial surgery when set against the indisputable health care needs for treatment of diseases of the mouth, jaws and face that exist world-wide. There are many parts of the globe, as in Sudan, where populations have little more than access to basic dento-alveolar surgery, where facial trauma is increasing due to road traffic accidents (RTA) and armed conflicted and where congenital facial anomalies or oral cancer remain largely undertreated. Taking this in consideration, International Conference on Oral and Maxillofacial Surgery held in Kyoto, Japan, in 1998 addressed the international imbalance in the provision of oral and maxillofacial surgical healthcare. The Kyoto meeting emphasized that much of the developing world lacks well organized national associations that can support the creation of educational OMFS programs [28]. This is to a large extent due to lack of finance: most of these countries simply do not have the economic resources to support advanced training programs. Information received from various developing nations indicates a need for the establishment of a common core program of training in oral and maxillofacial surgery. The Executive Committee of IAOMS has agreed on a definition of such a core program to include:

1. Dento-alveolar surgery.
2. Trauma of the face and facial skeleton.
3. Inflammatory diseases.
4. Oral pathology including malignancies.
5. Basic reconstructive surgery.
6. Common congenital deformities.

The core program is intended to be cost-effective at all levels. There should be an emphasis on the conservative management of trauma and the use of inexpensive materials. Reconstructive surgery should be limited to the management of jaw ankylosis and training in local tissue flap design. Cleft lip and palate is singled out as the most important congenital deformity in the maxillofacial region for which there is a world health care need.

Omfs in sudan

In Sudan oral and maxillofacial surgery is considered relatively as a new specialty when comparing it with other surgical specialties present to qualify as an oral and maxillofacial surgeon in Sudan, the requirement is to acquire a dental undergraduate degree (BDS) of equivalent followed by a four year program in oral and maxillofacial surgery. The program consists of a hospital based oral and maxillofacial surgical residency accredited by the Sudan Medical Specialization Board (SMSB), a nationally recognized.

The residency spans a minimum of forty eight months of full –time training including

- a) 38 months in oral and maxillofacial surgery.
- b) 2 months in Causality and Emergency (Traumatology).
- c) 2 months in General Surgery.
- d) 2 months in Neurosurgery.
- e) 2 months in Plastic Surgery.
- f) 2 months in ENT (EAR, NOSE AND THROAT) surgery.

The OMS training program in Sudan is similar to the American one in the aspects of the dental degree requirement and the residency span as mentioned before. Oral and maxillofacial surgery is defined by the American Dental Association (ADA) and the American Association of Oral and Maxillofacial Surgeons (AAOMS) as the specialty of dentistry that includes the diagnosis, surgical and adjunctive treatment of diseases, injuries, and defects involving the functional and esthetic aspects of the bone and soft tissues of the oral and maxillofacial region. As a recognized specialty of dentistry, it is regulated by state dental boards [27]. Looking at OMFS training in the United Kingdom., Oral and Maxillofacial Surgery (OMFS) in the UK originated as a branch of surgical dentistry. Since 1984, the Royal College of Surgeons has recognized OMFS as a surgical specialty of medicine. It has become a requirement to hold primary degrees in both medicine and dentistry [29]. Training in oral and maxillofacial surgery in the United Kingdom takes approximately 18 years; comprised of 5 years as a dental undergraduate, 2 years of general dental training during which membership in dental surgery of one of the Royal Surgical Colleges is normally taken, 4 to 5 years as a medical undergraduate, 1 year of preregistration medical and surgical posts, a minimum of 1 year of general surgical training, and finally, 5 years of specialty training as a specialist registrar. During the specialty training, the Surgical Fellowship examination (FRCSMFS) will be taken and following a successful series of RITAs (Record of In-Service Training Assessment), a Certificate of Completion of Specialist Training (CCST) is awarded. Following the award of a CCST, the trainee is then eligible to be appointed as an independent consultant in oral and maxillofacial surgery in the National Health Service (NHS). The UK

seems unique in that OMFS specialists have a broad training, with the ability to then sub-specialize. This includes training in cancer resection and reconstruction, which in many countries is undertaken by surgeons with general surgery and plastics training respectively. The need for dual qualification is related to this breadth of practice, making the OMFS training pathway in the UK longer than in other parts of the world [30]. The dual qualifications followed by five plus long years of higher surgical training before one is independently allowed to practice, are a luxury we can simply not afford in our country. The economic costs involved in undergraduate education and inadequate financial compensations received during training impede such a notion. The American OMFS training programs are expected to meet the same accreditation criteria. The programs can be either 4 or 6 years long. A 4-year program offers a certificate in OMFS training, and the 6-year program integrates a medical degree within the residency. Despite all of the current controversy regarding the proper education and training for the oral and maxillofacial surgeon, and the insistence by some that a medical degree is a necessity, it is evident that the single-degree(DDS) rather than the double-degree (MD-DDS) oral and maxillofacial surgeon will become the dominant specialist in the future. This opinion is based on the following considerations:

- A. The single-degree oral and maxillofacial surgeon provides those services most needed by the public.
- B. The education and training of the single degree oral and maxillofacial surgeon requires the shorter time period.

Thus, they fulfill most of the public needs in a more educationally and economically efficient manner. Moreover, the double-degree (MD-DDS)oral and maxillofacial surgeons will not want to undergo such a long period of education and training to end up doing the same procedures done by most single-degree surgeons, and will therefore want to limit their scope to more major procedures such as oncologic surgery, craniofacial surgery, management of congenital anomalies, and major reconstructive surgery. Because there are fewer patients requiring such operations than those in need of dento-alveolar surgery, dental implants, and orthognathic and temporomandibular joint surgery, fewer double-degree oral and maxillofacial surgeons will be needed [9].

Justification of the Study

The aim of this is study is to assess the perception of oral and maxillofacial surgery (OMFS) scope in Sudan among healthcare providers, medical and dental students. In order for patients to receive the optimum treatment of oral and facial problem, health care providers need to have a good understanding of what OMF surgeons can do. Recognition of the scope of OMFS practice improves referral pattern from medical colleagues and improves the health quality services. Again this study may indirectly turn head toward the OMFS in Sudan which lacks support like other medical specialties.

Objective

General objectives:

- a) To assess the awareness of the healthcare professional medical students and dental students about the scope of OMFS.
- b) To bridge the gap of knowledge between the medical profession and the specialty of OMFS.

Specific objective

1. To increase the knowledge of the medical professionals by establishing OMFS departments in general hospitals.
2. To address medical schools to include a module of OMFS in the undergraduate curriculum.
3. To include lectures and shifts to attend referred clinics and operating sessions at OMFS units for postgraduates.
4. To include OMFS as an elective rotation in the internship period.

Chapter 2

Materials and Methods

Materials and Methods

This is cross sectional study. The survey was done at KHARTOUM State to assess the awareness of OMFS scope among health care professionals, medical and dental students. The study was conducted at Khartoum Teaching Hospital, Alshab Teaching Hospital, Soba Teaching Hospital, Omdurman Teaching Hospital and the Academic Hospital. Medical specialists from private health centers in Khartoum State also participated in this study. The medical students participating in this study were from different universities at Khartoum State (University of Khartoum, University of medical Science and Technology, Alribat University, Alahfad University and Bahri University). The dental students were final year students from University of Khartoum and University of Medical Science and Technology. A methodology used in several studies carried out in Great Britain in 1994 [1] and 2005 [2] in the United States and more recently in Brazil, India and Kuwait [3-26] was used. A single-paper, in English questionnaire was given to 50 medical specialists, 50 medical residents in different specialties (internal medicine, general surgery , neuro- surgery, ENT surgery ,plastic surgery, pediatrics, orthopedics, emergency medicine and obstetrics and gynecology), 50 medical general practitioners (MGP), 50 medical house officers, 50 medical students(final year) and 50 dental students (final year) giving the total number of 300 responses. Twelve surgical conditions were chosen and they were asked to choose the most appropriate specialty to treat the problem. The six groups of people included in this study are those who presently refer patients to OMFS (medical house officers, medical general practitioners, medical residents and medical specialists), those who will make referrals in the future (medical and dental students). Data management and statistical analysis were performed using Statistical analysis for Social Science (SPSS) version16.

Chapter 3

Results

Results

Responses from medical specialists, medical residents at different specialties, general medical doctors, house officers

medical doctors, dental students and medical students are shown in (Tables 1-6) respectively. The summary of percentage of respondents who selected OMF surgeon is given in (Table 7).

Table 1: Medical Specialists Response.

Surgery	Plastic surgeon		OMF surgeon		Ent surgeon		General surgeon		Others	
	NO	%	NO	%	NO	%	NO	%	NO	%
Simple and Complicated Tooth Extraction	1	2	45	90	1	2	0	0	5	10
Facial Trauma	34	78	9	18	0	0	2	4	7	14
Cysts of the Oral, Paraoral and Head and Neck Region	8	16	9	18	5	10	3	6	29	58
Orthognathic Surgery (Correction Of Facial Deformity)	8	16	13	26	0	0	0	0	27	54
Cleft Lip and Palate	40	80	9	18	3	6	1	2	0	0
Oral Cancer And Head and Neck Malignancies (Soft and Hard Tissues)	1	2	15	30	1	2	3	6	33	66
Facial Reconstruction	14	28	3	6	0	0	0	0	32	64
Facial Infections	0	0	6	12	0	0	7	14	35	70
Dental Implants	0	0	46	92	0	0	0	0	4	8
Maxillary Sinus (Tumours)	0	0	18	36	8	16	0	0	26	52
Temporo-Mandibular Joint Disorder(TMJ)	0	0	47	94	1	2	0	0	1	2
Salivary Glands Disorders	6	12	34	68	4	8	3	6	6	12

Table 2: Medical Residents Response.

Surgery	Plastic surgeon		OMF surgeon		Ent surgeon		General surgeon		Others	
	No	%	No	%	No	%	No	%	No	%
Simple and Complicated Tooth Extraction	0	0	45	90	0	0	1	2	5	10
Facial Trauma	25	50	30	60	3	6	2	4	1	2
Cysts of the Oral, Paraoral and Head and Neck Region	6	12	28	56	18	36	9	18	2	4
Orthognathic Surgery (Correction Of Facial Deformity)	24	48	31	62	1	2	2	4	1	2
Cleft Lip and Palate	42	84	11	22	2	4	3	6	0	0
Oral Cancer And Head and Neck Malignancies (Soft and Hard Tissues)	13	26	27	54	20	40	8	16	4	8

Facial Reconstruction	32	64	24	48	3	6	3	6	2	4
Facial Infections	8	16	18	36	2	4	20	40	7	14
Dental Implants	0	0	39	78	0	0	0	0	6	12
Maxillary Sinus (Tumours)	1	2	25	50	28	56	2	4	3	6
Temporo-Mandibular Joint Disorder(TMJ)	1	2	40	80	10	20	1	2	2	4
Salivary Glands Disorders	8	16	17	34	14	28	18	36	2	4

Table 3: General Medical Practitioners Response.

Surgery	Plastic surgeon		OMF surgeon		Ent surgeon		General surgeon		Others	
	NO	%	NO	%	NO	%	NO	%	NO	%
Simple and Complicated Tooth Extraction	0	0	45	90	0	0	1	2	6	12
Facial Trauma	23	46	29	58	2	4	1	2	0	0
Cysts of the Oral, Paraoral and Head and Neck Region	8	16	32	64	8	16	12	24	2	4
Orthognathic Surgery (Correction Of Facial Deformity)	23	46	29	58	1	2	1	2	5	10
Cleft Lip and Palate	31	62	12	24	4	8	5	10	3	6
Oral Cancer And Head and Neck Malignancies (Soft and Hard Tissues)	7	14	34	68	6	12	12	24	5	10
Facial Reconstruction	34	68	19	38	0	0	1	2	1	2
Facial Infections	6	12	20	40	4	8	18	36	4	8
Dental Implants	2	4	42	84	2	4	0	0	4	8
Maxillary Sinus (Tumours)	0	0	42	84	11	22	2	4	1	2
Temporo-Mandibular Joint Disorder(TMJ)	1	2	44	88	3	6	3	6	3	6
Salivary Glands Disorders	5	10	32	64	10	20	7	14	0	0

Table 4: Medical House Officers Response.

Surgery	Plastic surgeon		OMF surgeon		Ent surgeon		General surgeon		Others	
	NO	%	NO	%	NO	%	NO	%	NO	%
Simple and Complicated Tooth Extraction	0	0	41	82	1	2	0	0	9	18
Facial Trauma	19	38	23	46	5	10	7	14	2	4
Cysts of the Oral, Paraoral and Head and Neck Region	5	10	17	34	22	44	9	18	1	2
Orthognathic Surgery (Correction Of Facial Deformity)	29	58	18	36	2	4	1	2	1	2
Cleft Lip and Palate	34	68	8	16	6	12	5	10	2	4
Oral Cancer And Head and Neck Malignancies (Soft and Hard Tissues)	6	12	24	48	14	28	13	26	3	6
Facial Reconstruction	29	58	19	38	2	4	3	6	0	0

Facial Infections	10	20	14	28	9	18	12	24	8	16
Dental Implants	3	6	37	74	1	2	2	4	7	14
Maxillary Sinus (Tumours)	3	6	19	38	28	56	2	4	0	0
Temporo-Mandibular Joint Disorder(TMJ)	3	6	35	70	9	18	4	8	1	2
Salivary Glands Disorders	3	6	20	40	13	26	17	34	0	0

Table 5: Dental Students Response.

Surgery	Plastic surgeon		OMF surgeon		Ent surgeon		General surgeon		Others	
	No	%	No	%	No	%	No	%	No	%
Simple and Complicated Tooth Extraction	1	2	43	86	0	0	0	0	6	12
Facial Trauma	30	60	39	78	2	4	4	8	1	2
Cysts of the Oral, Paraoral and Head and Neck Region	6	12	47	94	10	20	4	8	1	2
Orthognathic Surgery (Correction Of Facial Deformity)	26	52	29	58	2	4	3	6	3	6
Cleft Lip and Palate	30	60	39	78	7	14	3	6	1	2
Oral Cancer And Head and Neck Malignancies (Soft and Hard Tissues)	7	14	46	92	4	8	8	16	2	4
Facial Reconstruction	39	78	32	64	1	2	1	2	0	0
Facial Infections	2	4	39	78	2	4	12	24	4	8
Dental Implants	2	4	45	90	0	0	0	0	6	12
Maxillary Sinus(Tumours)	1	2	44	88	20	40	2	4	1	2
Temporo-Mandibular Joint Disorder(TMJ)	1	2	47	94	2	4	4	8	0	0
Salivary Glands Disorders	0	0	49	98	5	10	3	6	2	4

Table 6: Medical Students Response.

SURGERY	Plastic Surgeon		OMF Surgeon		Ent Surgeon		General Surgeon		Others	
	No	%	No	%	No	%	No	%	No	%
Simple and Complicated Tooth Extraction	2	4	35	70	4	8	5	10	10	20
Facial Trauma	34	68	16	32	6	12	8	16	0	0
Cysts of the Oral, Paraoral and Head and Neck Region	4	8	22	44	15	30	15	30	3	6
Orthognathic Surgery (Correction Of Facial Deformity)	39	78	10	20	1	2	3	6	1	2
Cleft Lip and Palate	31	62	12	24	12	24	0	6	0	0
Oral Cancer And Head and Neck Malignancies (Soft and Hard Tissues)	5	10	24	48	8	16	17	34	8	16
Facial Reconstruction	39	78	11	22	1	2	3	6	2	4

Facial Infections	8	16	17	34	6	12	16	32	10	20
Dental Implants	2	4	26	52	0	0	3	6	15	30
Maxillary Sinus(Tumours)	3	6	26	52	17	34	8	16	1	2
Temporo-Mandibular Joint Disorder(TMJ)	6	12	30	60	5	10	11	22	6	12
Salivary Glands Disorders	2	4	17	34	13	26	20	40	2	4

Table 7: Summary of percentage of people who selected OMF surgeons.

Surgery	Medical specialist	Medical Resident doctors	Medical GP	Medical house officer	Medical student	Dental Student	Average of percentage
Simple & complicated tooth extraction	90	90	90	82	70	86	84.6
Facial trauma	18	60	58	46	32	78	48.7
Cysts Of The Oral, Para oral & head & neck region	18	56	64	34	44	94	51.7
Orthognathic surgery (correction of Facial deformity)	26	62	58	36	20	58	43.6
Cleft lip and palate	18	22	24	16	24	78	30.6
Oral Cancer And head & neck malignancies (soft & hard tissues)	30	54	68	48	48	92	56.6
Facial Reconstruction	6	48	38	38	22	64	36
Facial Infections	12	36	40	28	34	78	36
Dental implants	92	78	84	74	52	90	78.3
Maxillary Sinus (Tumors)	36	50	84	38	52	88	58
Temporo-mandibular joint disorders (TMJ)	94	80	88	70	60	94	81
Salivary Glands Disorders	68	34	64	40	34	98	56.3
The mean of responses	30.8	47.1	55.3	36	34.4	83.2	

Simple and complicated tooth removals

There is general consensus among all respondents upon simple and complicated tooth removal as oral and maxillofacial surgeon duty. Ninety percent of Medical specialists, medical residents and general medical practitioners (GMP) thought OMF surgeons were appropriate option to treat this anomaly, while 82% medical house officers thought it is OMF surgeons concern. Again 70% of medical students and 86% of dental students thought OMF surgeons were appropriate option to treat simple and complicated tooth removal. The aforementioned responses were thought to be influenced by past experience and current practice in Sudan.

Facial trauma

The management of facial trauma is the key to the development and longevity of the specialty of Oral and Maxillofacial Surgery as mentioned earlier in this study. Management of facial trauma has always been one of the surgical subsets in which oral and maxillofacial surgeons have excelled over the years. More particularly, our experience with head and neck anatomy and physiology, dental anatomy and occlusion provides us with unparalleled skills for the management of mandibular and facial fractures. Although treatment of patients with maxillofacial trauma is the main current practice of OMF surgeon in Sudan, only 18% of medical specialists thought its OMF surgeon duty. Sixty percent of medical residents, 58% of general medical

practitioners (GMP), 46% of medical house officers, 32% of medical students and 78% of dental students thought OMF surgeon were appropriate to treat facial fracture. The response of medical residents (60%) and general medical practitioners (GMP), (58%) reflects the possible role of OMF surgery residents who spend 10 months of medical training in changing the perception of the scope of OMF surgery among these respondents. Also ENT surgery and Plastic surgery have span of their residency program in OMF surgery training.

Cysts Of the oral, para oral & head & neck region

For Cysts Of the oral, para oral & head & neck region 16% of medical specialists, 56% of medical residents, 64% of general medical practitioners (GMP) and 34% of medical house officers opted for maxillofacial surgeon to treat the case. Among medical students 44% thought its oral and maxillofacial surgeon work, where 94% of dental students opted for oral and maxillofacial surgeon to treat the problem. Maxillofacial surgeons are performing a considerable number of cases of head and neck surgery in Sudan and in the near future the specialty will be dominant to look after these patients.

Orthognathic surgery (correction of Facial deformity)

Correction of facial deformity by Orthognathic surgery is no longer a unique surgical procedure but routine oral and maxillofacial surgery in which patients reasonably expect a safe predictable outcome. These dento-facial deformities can affect physical and oro-facial functions (breathing, speech and mastication) in several ways. The physical effects of dentofacial deformity are important, but the psychosocial impact of dentofacial deformity on an individual is often paramount. Such deformity can profoundly affect the quality of life and entail life-long adjustment. The combination of surgery and orthodontic treatment makes possible to treat dent-ofacial deformities that previously could not have been corrected orthodontically. For orthognathic surgery (correction of facial deformity) only 26% of medical specialists opted for oral and maxillofacial surgery to perform the surgery. Sixty percent of medical residents. 58% of general medical practitioners (GMP) ,36% of medical house officers have opted for oral and maxillofacial surgeon to treat that anomly. 78% of medical student have opted to plastic surgeon for management of facial deformities, where 58% of dental students thought correction of facial deformity to be treated by an OMF surgeon. This is one area where education of the study groups may improve the visibility of the specialty. In addition public awareness of this scope of OMF surgery may increase the practice of orthognathic surgery and thus its recognition among healthcare professionals. The cost of orthodontic treatment in Sudan as well as mistreated dento-facial deformities by orthodontics alone may also contribute to orthognathic surgery practice scarcity in Sudan.

Cleft lip and palate

For cleft lip and palate surgical repair the respondents except

dental students may be impressed the by both practice and education of this anomaly in Sudan. Only 18% of medical specialists, 22 % of medical residents, 24% of general medical practitioners (GMP), 16% of medical house officers and 24% of medical students have selected OMF surgeon to treat the problem. Dental students guided by their study curriculum and hospital referral clinics attendance, 78% of them have selected OMF surgeons for cleft lip and palate repair

Oral Cancer and head & neck malignancies (soft & hard tissues)

Oral cancer occurs on all sites in the oral cavity, mainly as squamous cell carcinoma. Even though the oral cavity is easily accessible for inspection, more than two-thirds of the lesions are only diagnosed at an advanced stage, which results in a high mortality rate and the need for aggressive treatment in the selection of appropriate specialty for treatment of oral cancer and head and neck malignancies (soft and hard tissues) only 30% of medical specialists have selected oral and maxillofacial surgeon to perform this. Fifty four percent of medical residents, 68% of general medical practitioners (GMP), 48% of medical house officers and 48% of medical students have selected oral and maxillofacial surgeon to treat oral cancer and head and neck malignancies in both hard and soft tissues. The response from dental students, as 92% of them have selected oral and maxillofacial surgeon to treat the problem, is justified due to their study curriculum and clinical rounds at maxillofacial units. Oral cancer cases are done exclusively by the maxillofacial units. Revision of operations lists in hospitals and maxillofacial units in different locations in Sudan will reveal oral and maxillofacial competency in this field. Due to the asymptomatic nature of early oral malignant disease the role of general medical Practitioners in screening and detecting oral malignancies is of paramount importance. Attributed to insufficiency of oral and maxillofacial surgery units in general hospitals in Sudan, patients often consult their general medical practitioner (GMP) with oral lesions. The role of the GMP is therefore crucial in the detection and appropriate referral of suspected oral malignancies. Early referral has a key role in improving survival, rate reducing complications and improving quality of life later on.

Facial reconstruction

Although reconstruction of facial deformities following tumors resections, trauma, infection and congenital anomalies using reconstruction plates and/or local flaps is a routine procedure in oral and maxillofacial surgery in Sudan, only 6% of medical specialists 48% of medical residents, 38% of general medical practitioners, 38% of medical house officers, 22% of medical students and 64% of dental students have selected oral and maxillofacial surgeon as appropriate option to accomplish that surgical procedure. The goals of successful reconstruction are to recreate normal oral function, provide a satisfactory cosmetic result and permit prompt and careful follow up. This can be challenging as oral cavity tumors can extend to involve a number of critical

sites (i.e., mandible, maxillary sinuses, orbit and skull base) and cause significant functional disabilities in terms of airway, speech, swallowing, and/or mastication. A better understanding of normal oral function and anatomy has resulted in the reconstruction of "like with like." The use of adjuvant radiotherapy in the management of advanced oral cavity neoplasms has necessitated the need for distant, well-vascularized tissue for the reliable repair of the post-surgical defect. The evolution of pedicled regional flaps has fulfilled this reconstructive goal.

Facial infections

Regarding management of facial infections, 12% medical specialist thought OMF surgery is appropriate option to handle this problem. Again 36% of medical residents, 40% of general medical practitioners (GMP), 28% of medical house officers, 34% of medical students' and 78% of dental students have selected oral and maxillofacial surgery as an appropriate specialty to treat facial infections. These responses from respondent other than dental students have come although facial infections are some of the oldest disease processes treated by oral and maxillofacial surgeons. These patients commonly present to the office or, in severe cases, to the hospital emergency department. Although the majority of infections can be treated in a non-emergent fashion, early recognition and correct management of severe infections can be lifesaving. Knowledge of the surgical anatomy and path of spread of infections in the head and neck is fundamental in providing correct diagnosis and treatment. The ability of severe infections of the sublingual, submandibular, and Para pharyngeal spaces to cause airway compromise, cavernous sinus thrombosis, and possibility of mediastinal spread of infection has resulted in complications and death, especially in the medically compromised patient who presents late in the disease process. Despite the availability of a wide spectrum of antimicrobial agents and increasing knowledge of microbiology, the treatment of odontogenic infections remains primarily surgical. Removal of the source of infection and establishment of adequate drainage for elimination of the purulent material provide the mainstay treatment.

Dental implants

Predictably, 92% of medical specialists have selected oral and maxillofacial surgeon for dental implant placement.

Again 78% of medical residents, 84% of general medical practitioner (GMP), 74% of medical house officers, 52% of medical students' and 78% of dental students have selected oral and maxillofacial surgery for that duty. The general consensus of all respondents may be influenced by current practice as well as the name (Dental). Although many dentists are now able to place implants, those requiring extensive site developments through use of large autogenous bone grafting from extra oral sites, such as ribs, tibia, and iliac crest, is usually accomplished by OMF surgeons.

Maxillary Sinus (Tumors)

Among medical specialists 36% have selected oral and maxillofacial surgeon for maxillary sinus tumors management. Again 50% of medical residents, 84% of general medical practitioners (GMP), 38% of medical house officers, 52% of medical students' and 90% of dental students have selected oral and maxillofacial surgery. Maxillectomy (resection of maxillary sinus) is a common surgical procedure accomplished by OMFS in Sudan for a list of array of pathological lesions involving the maxillary sinuses.

Temporo-Mandibular Joint disorders (TMJ)

Temporo-mandibular joint area of patient care is the one in which oral and maxillofacial surgery would be expected to dominate. Not in contrary to that prediction 94% of medical specialists have selected oral and maxillofacial surgeon for Temporo-mandibular joint management. Again 80% of medical residents, 88% of general medical practitioners (GMP), 70% of medical house officers, 60% of medical students' and 94% of dental students have selected oral and maxillofacial surgery as an appropriate option for management of (TMJ) disorders.

Salivary glands disorders

Among study group respondent 68% of medical specialists have selected oral and maxillofacial surgeon as an appropriate option to treat salivary glands disorders. 34% of medical residents, 64% of general medical practitioners (GMP), 40% of medical house officers, 34% of medical students' and 98% of dental students have selected oral and maxillofacial surgery as a suitable option.

Chapter 4

Discussion

Discussion

This is the first time a survey of this type has been reported in Sudan. The idea was triggered by the recurrent questions about what we do rather than dento-alveolar surgery by our medical colleagues during medical training span at plastic surgery, general surgery, neurosurgery, ENT surgery and Causality and Emergency (Traumatology). In addition to this late presentation the late attendance of patients with maxillofacial lesions whom had been treated by other specialties also was another stimulant to conduct this survey. In the advanced countries, the awareness of Oral and maxillofacial surgery by both the public and medical specialties has led to rapid development and expansion of Oral and Maxillofacial surgery specialty with management of diverse and complex problems within a well-defined anatomical region. In the developing countries like Sudan, the tendencies are slow and this explains why majority of our patients present at very late stage when only palliative measures are the option. The services of oral and maxillofacial surgery in Sudan are centralized at Khartoum state for the last 40 years. Peripheral hospitals provide OMFS services through outpatient clinics and day-care facilities. The oral and maxillofacial surgery department at Khartoum Teaching Dental Hospital provides all aspects of OMFS and takes referrals from all GPs and dentists in Sudan. OMFS units were founded also at the Military hospital, Police hospital and recently Bahri hospital. Although this survey was done at Khartoum state, the scenario in any part of Sudan would not be different. The specialty is still searching for it's identity rather among the health care providers than among the general public. In all the previous studies, it had been pointed out that lack of publicity by the professional bodies and also by the individual professionals should be the reason. In this survey the study group is limited only for health providers, medical and dental student unlike others studies which included public participants [1-7]. The justification for this is the public literacy level and awareness in Sudan is very diverse in comparison with developed countries. Understanding the attitude and perception of our medical colleagues was found to be more vital than assessing the knowledge of the public. Most of the findings in this study would not surprise older and practicing oral and maxillofacial surgeons. It does bring home a reality- our specialty is not easily recognized by the medical fraternity. We are mainly known as "dentists" to the medicals. In this study it was found that all study groups, except dental students, were not aware about the scope of the specialty and its capabilities.

The study group has represented those who presently refer patients to OMFS (house officers, medical general practitioners, medical residents and medical specialist); those who will make referrals in the future (medical and dental students) so responses may give an excellent clue about the perception of OMFS in Sudan (Figure 1) both recently and in the future. In this study there were general consensus among all participants on the treatment of simple and complicated tooth extraction, dental implants

placement and temporo-mandibular joint disorders by oral and maxillofacial surgeons. The selection of only 3 anomalies from 12 may reflect the low awareness of OMFS scope. These responses suggest that there was a clear division in awareness between conditions relating to the mouth and those outside the mouth in the head and neck region, despite the latter being well within the scope of OMFS. It is disheartening to see that the medical students and professionals look at OMFS still as dentists who work around the tooth. Medical professionals do not completely understand the scope and expertise of the specialty. The present survey demonstrated that regarding facial trauma there is lack of awareness among medical students and colleagues. Within the specialty of oral and maxillofacial surgery, the management of facial trauma occupies a central role. Delay and misdiagnosis in the referral of patient with maxillofacial trauma will lead to a lot of complications which can compromise the patient's life. Like any other soft tissue. Facial soft tissues injury is being managed primarily by oral and maxillofacial surgeons but in spite of this happening for long time in Sudan, the medical professionals expect OMFS to treat only dental problems and unjustifiable interferences take place. With respect to pathologic conditions as Cysts of the oral, para-oral and head and neck region, Oral Cancer and head & neck malignancies (soft & hard tissues ,maxillary sinus tumors and salivary glands disorders, the responses, except that of dental students, had shown other than OMFS selections. The most alarming response in my point is that of oral cancer. Previous studies have shown that general medical practitioners are more likely to see patients at risk for oral cancer than their dental counter parts [30,31]. This is typically applied in Sudan due to OMFS services centralization in Khartoum state. The importance of general medical practitioners knowing how to perform examinations of the oral cavity for oral cancer detection should not be underestimated as a lack of knowledge in this area can contribute to delayed or in appropriate referrals, late detection of these malignancies and hence a poorer prognosis [31]. Unlike other malignancies where invasive tests may be required for detection, oral cancer can often be initially detected by visual examination of the oral cavity. In order to confidently examine the oral cavity general medical practitioners must have an understanding of what is considered normal and hence what is abnormal and needs referral elsewhere. Knowledge of potential risk factor scan allow the targeted monitoring of patients at greater risk than others and an awareness of signs and symptoms will allow practitioners to rapidly identify possible malignant disease.

Correction of dentofacial deformities is being performed by maxillofacial surgeons in Sudan. Still, the medical professionals believe that those procedures are being done by plastic surgery. Orthognathic surgery practice in Sudan is scarce which may be attributed to high cost of the prior orthodontic treatment or wrong assessment of the cases by orthodontist. Regarding cleft lip and palate repair the responses again apart from dental students preferred plastic surgeons to treat the problem. The responses were similar to those of previous studies assessing OMFS awareness.

In this survey facial reconstruction was selected as plastic surgeon duty from the respondents though all reconstruction options have been practiced by OMF surgeons in Sudan.

Both soft and hard tissue reconstruction due to trauma or pathological lesions are routine procedures in operation lists of maxillofacial surgery.

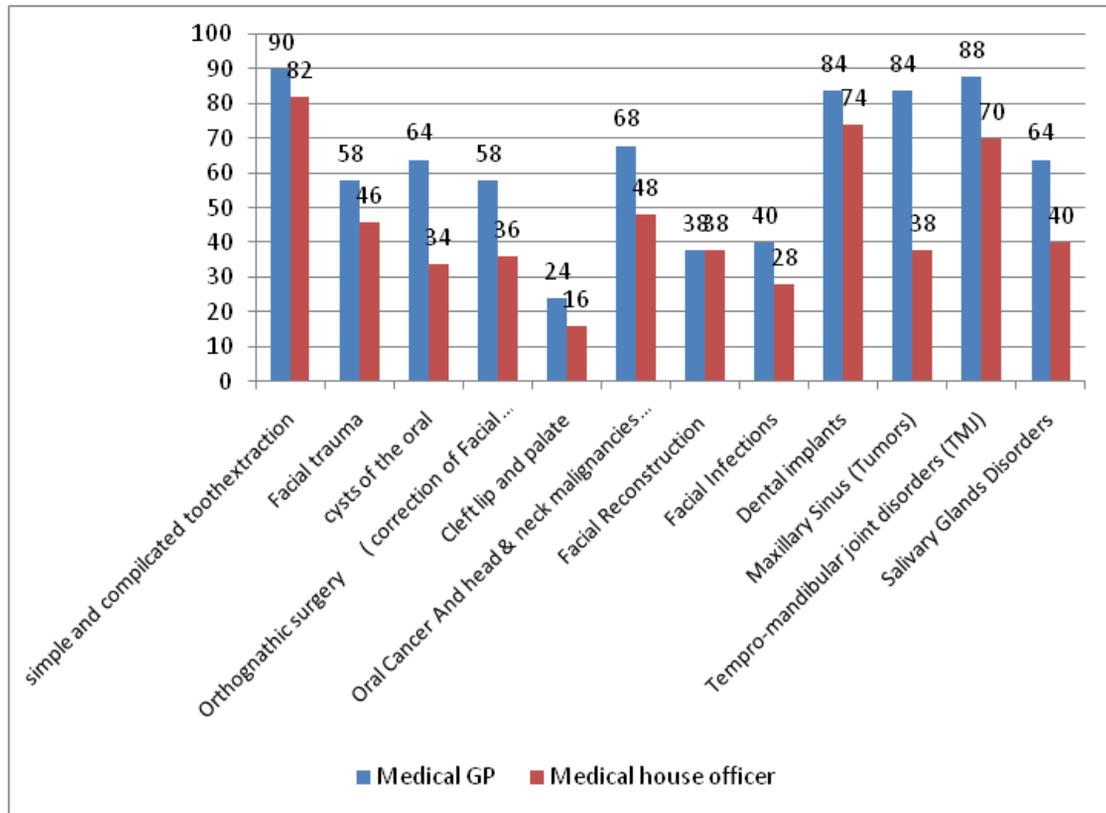


Figure 2: Comparison between medical general practitioners and medical house officers responses in assessing OMFS scope in Sudan.

Dental infections have become the most common etiology of deep neck and facial infections in the Western world, involving the masticator, parapharyngeal, and submandibular spaces. More than 50% of patients presenting with infection involving the spaces have an odontogenic etiology, placing oral and maxillofacial surgeons as a preferred provider of surgical care for this group. In spite of this fact, in our survey the option of OMF surgeon to treat facial infections is not the first one. Overall, the dental students seem to have better appreciation and knowledge of the clinical expertise of the specialty. A stronger understanding of the dental students' perception of OMS provides an opportunity for the faculties to better educate students and, ultimately, strengthen the specialty [6]. Lower responses from dental students were noticed regarding orthognathic surgery and facial reconstruction. This reduced level of awareness could be elevated by revision of dental student curriculum of oral and maxillofacial surgery in Sudanese dental faculties. Assessing the awareness of Oral and Maxillofacial Surgery among the public, healthcare providers and medical students is not new and many studies were published giving the information about perception of OMFS scope. The previous studies showed the recognition of the scope of the

OMFS is not clear to the public and health care provider [1-8]. And these results were similar to this survey results. The most annoying responses were that of medical specialist as their reduced level of awareness about OMFS scope could limit the promotion specialty. They have educational duties and supervising medical students, medical general practitioners and registrars but the responses from the medical residents (registrars), the future specialist, may give a good sign for the future perception of this specialty (Figure 2). Ameerally et al. [1] stated that if patients are to receive the optimal treatment for oral and facial problems, dental and medical practitioners need to have a better understanding of what our specialty has to offer. OMFS has a long and complicated Latin name, and health coordinators have to be informed of the importance of this specialty in the management of complex and diverse problems within a well-defined anatomical area. These authors suggested changing to a much simpler name such as 'Oral and Facial Surgery', and also advocated a better system of education for both the public and professionals, including medical and dental students. In this survey the public were not included and changing the name alone without expanding the current service in Sudan will offer no help. Hunter et al.

[2] demonstrated that, not surprisingly, most professionals, dental and medical students have heard of OMFS, but only a few realize the full scope of the specialty. They attribute this to a lack of publicity in the media, along with the fact that OMFS is grounded in dentistry rather than medicine.

There is also a tremendous overlap between the specialties otolaryngology, plastic surgery and OMFS with no definite procedure specific to each specialty. This is similar to this study but again the exclusion of the public from this study has created the difference.

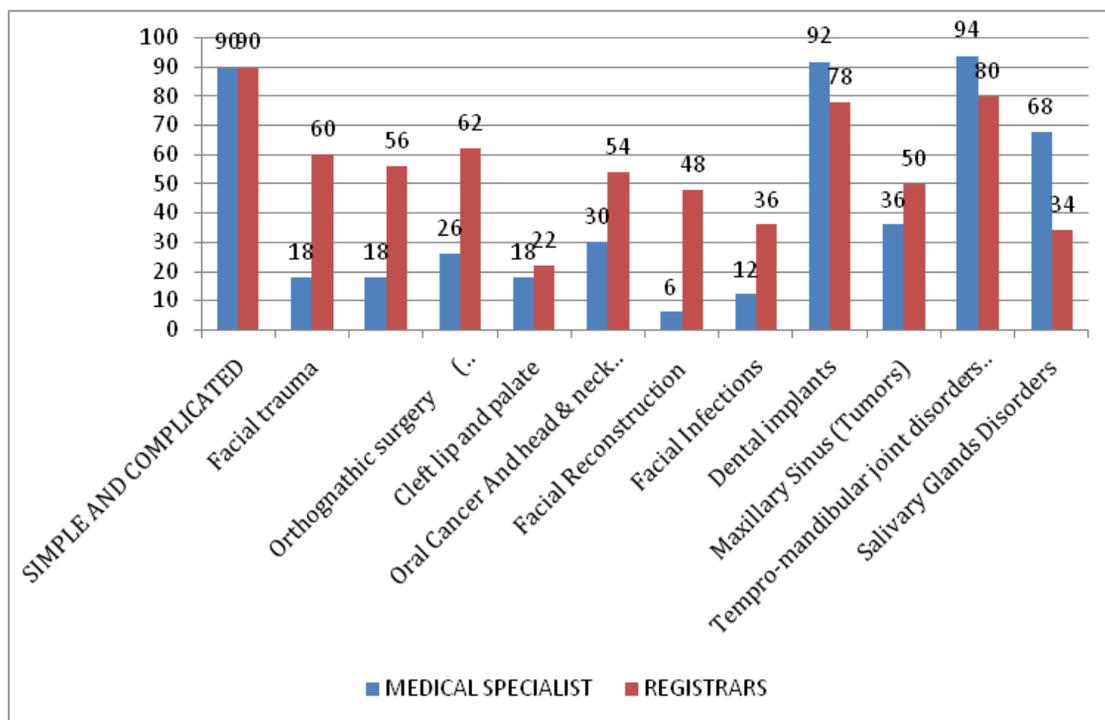


Figure 2: Comparison between medical specialist and registrars responses in assessing OMFS scope in Sudan.

Ifeacho et al.[3], 10 years later, compared their results with those of Ameerally et al., and noticed that recognition of OMFS among the general public and health professionals had increased (21– 34%), but that the specialty had improved only marginally. Their results suggest that there was a clear division in awareness between conditions relating to the mouth and those outside the mouth in the head and neck region, despite the latter being well within the scope of OMFS. The need for publicity is underscored by the authors, particularly on account of the unusual name, which lay people do not understand or easily remember. This again is similar to these study findings Rocha et al. [4]. Investigated recognition of the scope of OMFS among dental students, medical students, dentists and doctors. A good level of knowledge of the scope of OMFS was found. In order to ensure the correct referral of all patients, the specialty needs to broaden its horizons. Greater progress needs to be made in the education of medical and dental students, as well as the general public, if the specialty of OMFS is to be practiced to its full potential. In this survey the recognition of OMFS scope was good among dental students only. Also the participants including both medical residents and specialist unlike the upper mentioned study.

Subhashraj and Subramaniam [5] evaluated awareness of OMFS scope among dental students, dental professionals, medical professionals and paramedical in India. A good level of awareness to some extent was found among dental students and professionals while medical professionals and paramedical were not fully aware of the scope of OMFS. Jarosz et al. [6] analyzed a population of dental students' perceptions of OMS as a specialty with respect to treatment rendered, referral patterns, and a general opinion of the specialty as a whole. They found significant associations between the stage of dental education and student perceptions of OMS were determined. In this study all the participated dental students were final year students. Looking to their good level of awareness of OMFS scope may support Jarosz et al. [6] findings.

Herlin et al [33]. Investigated the perception of OMFS specialty in the general public and among regular correspondents (general practitioners and dental practitioners) in France. Several fields of expertise were identified in maxillofacial surgery, in particular traumatology, surgery for facial birth defects, and orthognathic surgery. Moreover, dental practitioners were found to be the most regular correspondents of maxillofacial surgeons compared

with general practitioners. Compared with Anglo-Saxon and Brazilian peers, French recognition of maxillofacial surgery was better. Despite encouraging results, maxillofacial surgery remains a somewhat obscure specialty for health care workers and the general public. Better awareness is necessary for this specialty to become the reference in facial surgery. Although the end result is similar but there is no comparison between the two studies circumstances.

Krishna reddy et al. [26] again in a recent study had evaluated awareness in India. The study was carried among medical, dental undergraduate students, medical and dental practitioners, and lay persons. While trauma and facial deformity correction were recognized to be mainly treated by maxillofacial surgeons, the other maxillofacial problems were poorly recognized to be treated by OMFS. This study is the most similar study to this one but it differed in public inclusion as well as facial trauma correction responses. Haron Im et al. [8] evaluated the Perception of oral and maxillofacial surgery by medical and dental health care professionals in Kuwait. Both medical and dental professionals agreed on referring most cases involving the maxillofacial region to OMFS, however in cleft lip and palate, the results varied widely, with dentists leaning towards referral to OMFS and physicians towards plastic surgeons. Trauma cases in the maxillofacial region were generally referred to OMFS with some differences between the professionals regarding some midface fractures. Regarding oral and maxillofacial pathology both categories preferred referring to OMFS however in cases such as malignancies of the tongue, cancer of the lip, lump in the neck and salivary gland removal referral to medical specialist was preferred. There was agreement that cosmetic procedures should be treated by plastic surgeons except for dento-facial deformities. Although a recently introduced specialty, they thought OMFS has already established itself well in Kuwait. The responses were similar to this study. From revision of several mentioned studies conducted to assess the level of awareness of OMFS scope as there was almost a general agreement that this specialty and what it offer to the patients is a mystery to our medical colleagues in accordance to this study. Although dental students' perception of OMFS was high, they showed reduced level of awareness regarding the role of OMFS in orthognathic surgery and facial reconstruction. Unless there are ability to raise the awareness of the specialty among medical colleagues and medical students, OMFS will continue to encounter resistance to the implementation, development and maintenance of the scope of practice. Again the recognition of OMFS scope by medical colleagues will improve the quality of the health services in Sudan by right referral of the patients. Raising the level of awareness about OMFS scope should play a basic role in teaching and training under graduate and postgraduate medical students. At the present time they depend on ENT and plastic surgeons to gain knowledge experience in head and neck surgery.

OMFS trainees and consultants can raise the profile of the specialty by active participation in hospital clinical

meetings, and by presenting patients to illustrate the range and complexity of treatment. The OMFS residents could play a leading role in the specialty promotion during their medical rotation by participation in all activities and cases presentation and reflecting OMFS options of surgical procedure done by others (eg. cleft lip and palate, neck dissection and parotid surgery). Trainees on other surgical specialties could benefit from exposure to OMS, and this could be incorporated into their structured training programs. Changing the name of our specialty, as suggested in some studies [26,2], to a simpler one may contribute to promote the specialty but in Sudan further efforts should be done. Expanding the services necessitate establishment of OFMS unit in general hospitals over Sudan.

Conclusion

The present study has confirmed that awareness of the scope of oral and maxillofacial surgery among health care providers and medical students in Sudan is low regarding procedures rather than tooth extraction, dental implants and tempro-mandibular disorders. It also revealed the lack of recognition of the medical professionals about the competence of OMF surgeons to treat cleft lip and palate cases, facial reconstruction, orthognathic surgery for correction of facial deformities, maxillary sinus tumors and salivary glands disorders and head and neck surgery in general. Despite the good level of recognition of OMFS scope among dental students they have shown less awareness of OMFS role in facial reconstruction and orthognathic surgery. The methodology used in this study will enable future comparisons of the development of the scope of OMFS over time in the country but can also serve as an instrument for regional and international comparison. This study showed that it is very important to promote the specialty among healthcare professionals and medical students. Better awareness is necessary for this specialty to become the reference in Maxillofacial and Head and Neck surgery.

Limitations

There are limitations that must be acknowledged in this study. The first limitation of this study was that the questionnaire required time and concentration to complete made it difficult for several respondents due to high workloads. However by attending most of the interviews there was always an opportunity to clarify questions for the participants. The second limitation was the study area which was confined to Khartoum State. It is important to note that oral and maxillofacial surgery full services are centralized in Khartoum State. Therefore, the study does represent the whole country. Finally the small size sample may compromise this study. Time and budget constrains have limited the scope of this study, yet it does present valuable insight on perception of OMFS scope among health care providers, medical and dental students in Sudan (Figure 3) to be used in future researches.

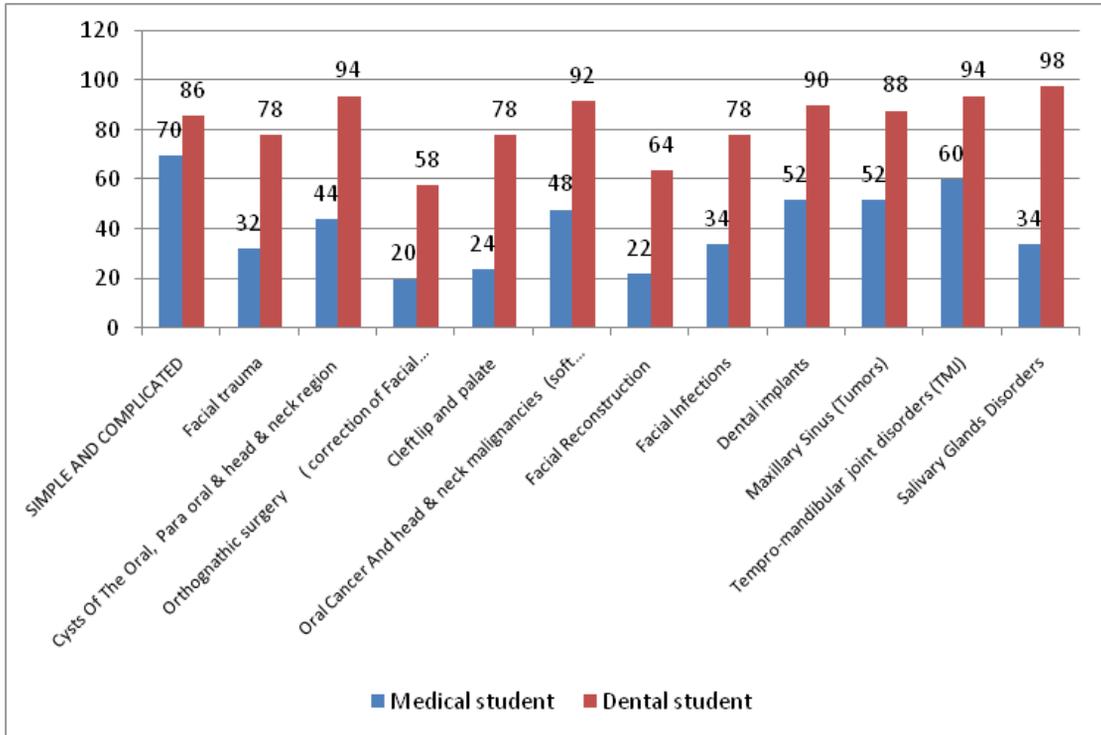


Figure 3: Comparison between medical students and dental students responses in assessing OMFS scope in Sudan.

Recommendations

This study revealed the urgent need for the following points:-

To establish OMFS units in the general hospitals all over the country.

To incorporate a module of OMFS and oral medicine in the curriculum of the undergraduate and postgraduate levels of medical education.

To use the media (TV, Radio, Papers) to educate the public to be aware about OMFS scope and the services delivered to patients.

The administration of curative medicine should pay attention to OMFS.

Para medical staff like medical assistants, lab technician and nurses should be oriented about OMFS role in primary healthcare.

Early referral of patients is mandatory this could be achieved by vocational training of Medical professionals in (OMFS).

Further study is required to assess public awareness about this specialty.

Health care professional should deal with OMFS as surgical sub- specialty and not as an odd specialty.

Appendix

I agree to share this information for research purpose.

Signature.....

Position.....

Please tick the specialty which you think is appropriate to treat the problem

References

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