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Perceptions of South African plastic surgeons regarding academic education in the field of cleft lip and palate

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ABSTRACT

Background: Historically, South African plastic surgeons (PSs) have been managing cleft lip/palate (CLP) and craniofacial anomalies (CA). PS lead CL/P teams globally where the need arises. The complex, lengthy nature of CL/P management requires holistic services and collaboration between disciplines. Academic education should provide in-depth knowledge, interdisciplinary participation, and clinical exposure to field experts. **Objectives:** An investigation into exposure and knowledge of South African PS regarding management of CL/P. An opinion from practicing PS about academic educational needs for working with CL/P patients. **Methods:** Online survey and telephone interviews (a structured questionnaire) investigating opinions of PS in CL/P to determine satisfaction with the adequacy of academic education and perceived needs. **Results:** The questionnaire was completed by 41% of practicing PS from Medpages health-care provider database. Most respondents (63.3%) were between 30 and 49. Of them, 74% showed good general knowledge of CL/P. However, 76.5% acknowledged limited clinical training and exposure in this field, preventing them from adequate services provision to CL/P patients. Only 41% offered primary and/or secondary treatment to CL/P patients and 40% had participated in interdisciplinary teams. All agreed on the need for a dedicated training program(s) in CL/P management. The majority recommended subspeciality training through a clinical fellowship or a degree course. **Conclusion:** PS postgraduate academic training and clinical exposure are limited in the CL/P field. An educational strategy should be established to meet the needs of PS providing CL/P care. Part-time clinical fellowship and/or degree courses would prepare them adequately for a career managing CL/P and CA patients.

Key words: Cleft palate, craniofacial anomalies, education, plastic surgeon

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INTRODUCTION

Cleft lip/palate (CL/P) represents the largest group of CA with oral structure involvement.[1] On average, it affects about 0.3 per 1000 live births, which means that about 300 babies, with different racial and geographical backgrounds, are born with orofacial clefts in South Africa annually.[2] Surgical care for orofacial clefts and CA frequently consists of primary, secondary, and revision surgeries.[3] Researchers reported that patients with bilateral and unilateral CL/P had, on average, 10 and 9,4 surgical procedures, respectively.[4] As a result, management of orofacial clefts contributes to the global cost of the disease, making many patients unable to access adequate surgical care.[5] A shortage of human resources for surgical care, and inadequate surgical capacity and finance in developing countries (including South Africa), have been reported in the literature.[6] CL/P surgery has been identified as one of the essential surgeries that need to be performed consistently worldwide.[7] Plastic surgery has evolved to contribute in many complex areas previously managed by other specialties, like facial cleft/craniofacial anomalies (FC/CA).[8] As stated by Rocha *et al.*,[9] medical professionals prefer that plastic surgeon (PS) manage such anomalies. One of plastic surgery's greatest innovators, Paul Tessier, originally described craniofacial reconstruction techniques that created the new subspeciality of craniofacial surgery.[10] Since late 1960, PS has played a significant role in caring for children born with CL/P.[11]

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To provide adequate care, these surgeons need to be trained to manage both hard- and soft-tissue conditions to achieve optimal functionality and an esthetically balanced and symmetrical result.[12,13]

One of the earliest attempts to assess the exposure of medical and dental students to CL/P treatment was made using a questionnaire.[14] The main finding was that students lacked clinical exposure and basic theoretic education. Spriestersbach *et al*.[15] acknowledge the effects of limited training in CL/P management and advise that a clinician with little training should not manage individuals with CL/P.

The nature of these anomalies, which are not singular or consistent entities, combined with other challenging health issues,[16] makes it more challenging to handle such patients because a single discipline cannot make all treatment decisions.[17] Close collaboration between different disciplines is an integral part of the interdisciplinary team approach to managing patients and has been advocated by medical practitioners.[18] Therefore, practitioners involved in CL/P should be educated in their field and in the treatment provided by other disciplines involved in interdisciplinary care.[19] As a result, the training and development of an efficient interdisciplinary team member should be based on a pedagogical model for successful skills transfer and cooperation within the team model.[20] Not only is academic education essential for an interdisciplinary team member, but it must also be combined with research to monitor and improve treatment outcomes.[21]

The value of treatment management relies on the training and exposure the student receives at university and the knowledge acquired throughout the practitioner's career. Therefore, feedback on the education acquired and further training needs is necessary to provide a foundation for improving educational courses, which will lead to the provision of better health services.[22]

Objectives

Measure the perceptions of PS regarding their academic exposure and training satisfaction in the management of CL/P.

Obtain opinions from PS about the adequacy of academic education and needs in CL/P care.

METHODS

Ethical permission was obtained from the Humanities and Social Sciences Research Ethics Committee of the University of KwaZulu-Natal. The research survey was completed by South African PS who consented to participate in the study, using an online questionnaire to investigate the academic education provided on CL/P care. A quantitative research method, using a 54-item structured questionnaire, was developed. Qualtrics Research Suite survey software was used to capture and analyze the data. The questionnaire was designed in consultation with a PS surgeon expert in CL/P to collect the quantitative data using a Likert-type scale, which was explained telephonically to each practitioner. Consent for participation was obtained from each respondent before they completed the questionnaire. The data were collected either online or during a telephone interview, according to the participant's preference.

Questionnaire design

The questionnaire consisted of a statement of consent to participate, followed by four sections: The first determined whether the participants were accepted for the inclusion in the study as PS practitioners in South Africa. The second section collected their level of knowledge and experience. In the third section, participants were questioned to determine their needs and preferences regarding further education. The last section collected demographic data, including title, gender, age, degree(s), and location by region.

Selection of participants

A random sample of PS was obtained from the Medpages active practitioners database list.[23] The sample was randomly selected from the list using Microsoft Excel (2013). Regarding sample size, the authors used the literature information to guide the response rate.[24] This was reviewed to account for a possible sampling error of 15%, on the advice of a statistician.

Before distribution, the questionnaire was piloted by a convenience sample of practitioners. They were invited to complete the questionnaire, which was subsequently revised, based on their responses, to ensure appropriate data capturing. The researcher then approached the Association of Plastic Reconstuctive and Aesthetic Surgeons of Southern Africa to distribute the survey by email. Initially, the questionnaires were to be distributed by the Qualtrics online survey platform twice during the first week, then weekly afterward. This was ultimately not necessary, since the targeted participant number was achieved by randomly contacting 60 PS on the Medpages database.

Data analysis

The data were captured using Excel 2013. This was later converted into Stata 15 s (string) format (StataCorp LLC, College Station, Texas, United States). The analysis undertaken was descriptive summary statistics presenting frequencies and associated percentages. No additional analytical tools were used because no hypothesis was being tested.

RESULTS

The questionnaire was completed by 41% ($n = 59$) of the PS listed in the Medpages database, representing most South African provinces, with the highest participation from Gauteng (30.5%), Western Cape (28.8%), KwaZulu-Natal (15.3%), and Mpumalanga (8.5%). According to age, the participants' distribution showed that 63.3% were aged between 30 and 49 years, 33.3% between 50 and 65 years, and the rest were older than 65. When asked general questions about the incidence and distribution of FC/CA, only 74% showed good general knowledge. Regarding CL/P academic education, the participants indicated that, during their postgraduate studies, 76.7% had very little exposure in clinical experience, while 73.3% had limited participation in CL/P interdisciplinary, and 70% had very limited discussion meetings. A total of 75% gained some knowledge from textbooks and lectures (didactic input) [Figure 1].

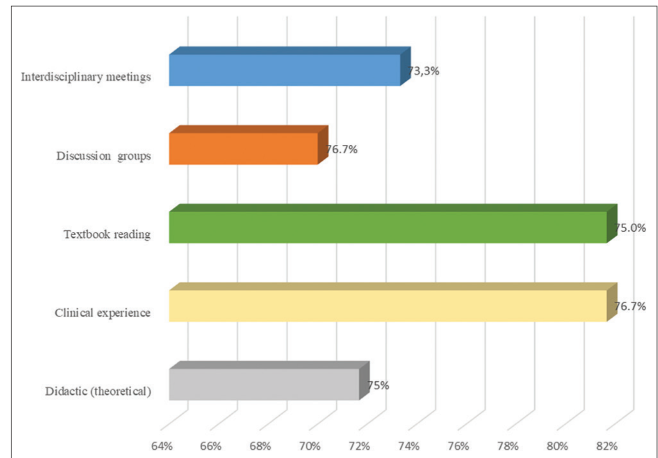

Figure 1: Plastic surgeons postgraduate programme includes very little exposure to the following in the management of cleft lip/palate

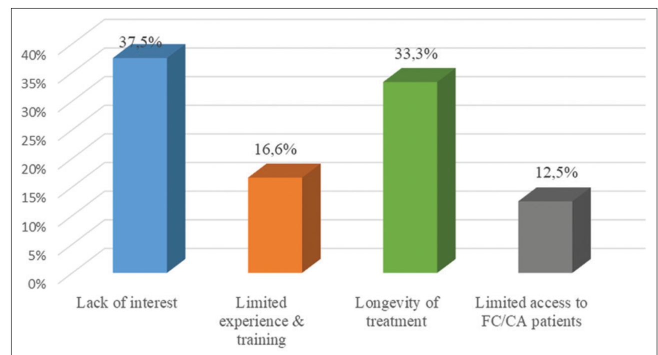

Figure 2: Reasons preventing plastic surgeons from treating cleft lip/palate patients adequately

Regarding services to CL/P patients, 59% of the professionals did not offer surgical treatment for either group. When asked to name the factors which prevented them from treating CL/P patients, 16.6% acknowledged that it was due to their limited clinical experience and training, 33.3% mentioned the long duration of the treatment, 37.5% cited lack of interest, and 12.5% mentioned the limited access to interdisciplinary care. A few said that they received very few referrals [Figure 2]. All the respondents agreed on the need for dedicated academic training programmes for CL/P management. Of the respondents, 39.7% proposed a nondegree clinical fellowship, while 21.6% suggested degree courses, and the rest recommended continuing professional education [Table 1]. For degree and nondegree clinical fellowship courses, the respondents indicated that admission requirements should include at least one professional degree. A total of 96.7% said that registration as a health professional was essential, whereas 51.7% placed emphasis on years of clinical experience and 5% suggested writing an admission examination [Figure 3]. When the participants were asked about their motives for enrolling in such a program, 47.3% identified interest and passion, 17.5% liked the idea of joining an interdisciplinary team, 14.9% mentioned alleviating community needs, 10.5% wanted to get a degree, and only 9.7% wished to improve their income [Figure 4]. The participants had various views on the essential

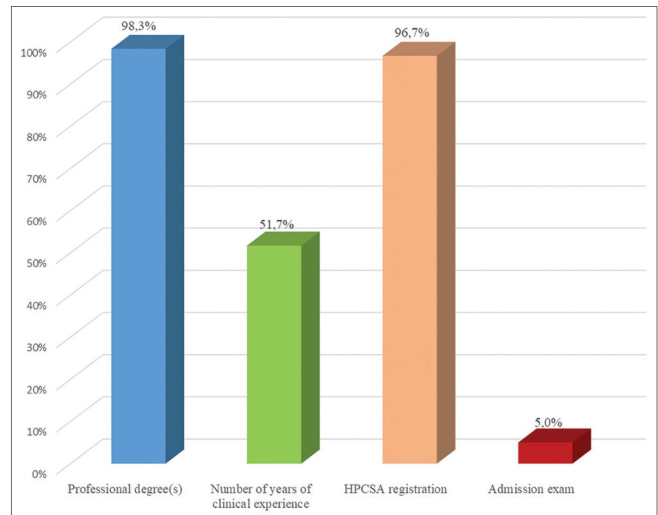

Figure 3: Admission requirements

aspects of the training programme(s), but most agreed that discussions, lectures, and keeping a logbook are crucial. Assignments were valued by 71.7%, whereas 66.7% recommended clinical research [Table 2]. Regarding the form of evaluation, 79.7% recommended keeping a logbook of clinical hours, 69% suggested a written/oral examination, 60.3% indicated assignments, and 36.2% proposed publication in a scientific journal as an important evaluation method.

DISCUSSION

To our knowledge, no survey has been undertaken in South Africa to investigate the opinion of PS about academic education in the field of FC/CA. However, such surveys have been conducted among other specialties in other parts of the world,[14,25] indicating the relevance of this study. Other studies of health professionals used samples from the national database for professionals.[25,26] In this investigation, participants were obtained from a list of active PS practitioners in a privately managed Medpages healthcare database, which is updated regularly to provide a true reflection of the views of current practising PS.[27] The sample was randomly selected from the Medpages list. It included practitioners from different locations and places of employment to obtain a broader sample and get general opinions from all clinicians.

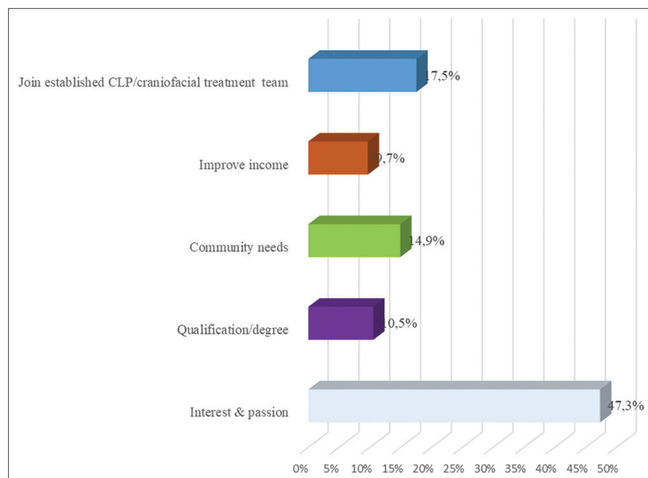

Figure 4: Motivation for enrolling in a cleft lip/palate postgraduate course

Table 1: Types of course recommended

Degree course, (diploma master's and fellowship certification	21.6%
Non-degree course and/or Clinical fellowship training	39.7%
CPD courses	38.8%

Table 2: Recommended learning activities

Lectures	90%
Discussions	95%
Logbook/clinical hours form	80%
Clinical research	66.7%
Journal discussions	71.7%
Textbook reviews	63.3%

It is recognized in the literature that it is challenging to get reasonable response rates in surveys of medical practitioners.[28] Some researchers have used email or postal questionnaires, and others have used incentives to improve the response rate.[29] In this investigation, the 41% response rate was achieved using both online survey and telephonic interviews. This provided statistically significant data collection and a wide distribution not limited by email access, in line with recommendations by Flanigan *et al*.[30]

In agreement with the findings of other disciplines regarding CL/P academic education,[31,32] this study found a limited emphasis on clinical training and interdisciplinary exposure during academic education graduate programmes, meaning that students might graduate with limited education in the CL/P field.[33] The survey also revealed a strong desire among South African PS for professional development and the need for a dedicated educational programme(s) in CL/P patient care.

CL/P programmes are available in different parts of first world countries as a subspeciality obtained by completing a fellowship.[34] In parts of developing countries, CL/P education provided by international organizations provides a visiting scholars' programme and local profession training through participation in a charity mission for CL/P treatment to bring interdisciplinary team care to their countries.[35] However, of the South African PS participants, 39.6% proposed a nondegree clinical fellowship, and 21.5% suggested degree courses, with 38% recommending participation in charity missions as training objectives. The rest recommended continuing education courses. Regarding the length of such programmes, the respondents were equally divided between 1 and 2 years, partially in line with the minimum 12-month fellowship recommended by Silvestre *et al*. and other researches.[36-38] Most respondents suggested that the training emphasise discussions and clinical contact, with evaluation through formal examinations and a logbook recording clinical hours.

The current educational model for surgeons in South Africa was developed in cooperation with the Colleges of Medicine of South Africa (CMSA) in 1955. The CMSA is primarily a professional examining body that oversees

postgraduate training indirectly, accredited by the Health Professions Council of South Africa (HPCSA). General surgeons may choose to spend a further 2 years training in subspeciality licenced units. The subspeciality certificate training requires a minimum of 2 years and ends with an examination conducted under the auspices of the CMSA and organized by the appropriate specialist society. When the candidates qualify, their subspeciality is then registered with the HPCSA.[34] This model is already in place, and it may be possible to extend it to the CL/P/CA field by introducing a PS surgeon's subspeciality certification program under the auspices of the CMSA.

All the respondents indicated that training must include interdisciplinary team participation to produce surgeons capable of providing holistic and effective care for those affected with CL/P. This is in agreement with recommendations in other studies.[36] Such comprehensive training can only be offered by an interdisciplinary CL/P centre where experts in the field perform a high volume of craniofacial surgical procedures.[39] Egro *et al*.[40] stated that candidate selection criteria should include professional degrees, the number of years qualified, and possibly even an admission examination. However, the respondents did not consider other requirements such as research experience and publications for candidate selection. This contrasts with Grewal *et al*.,[41] who state that scientific publication is a good indicator of those willing to provide fellowship, mentoring and education. The respondents in this survey recommend that the selected candidates demonstrate interest and passion and plan to join an established craniofacial team.

CONCLUSION

There is a need to establish an educational strategy for PS in CL/P surgery to ensure that they are competent and provide interdisciplinary services for CL/P patients. This study revealed that many practitioners are enthusiastic and willing to enroll in a hybrid education including a fellowship or a subspeciality clinical training programme, to prepare them to deliver the best clinical care in CL/P management. This investigation also provided information about candidate selection criteria, education objectives, and evaluation of such program(s). Our findings are that to offer such education program(s), South African PS, academicians, professional societies, and international organizations need to collaborate to maintain and develop craniofacial centers where a high volume of CL/P surgical procedures are performed and where enough experts are employed. All of this will provide adequate training to equip candidates to provide ideal and comprehensive CL/P patient services and to undertake initiatives in forming and leading an interdisciplinary team for CL/P care.

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Conflicts of interest

There are no conflicts of interest.

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