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A Core Curriculum for Postgraduate Program in Nonsurgical Aesthetics: A Cross-sectional Delphi Study

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Abstract

Background: The desire for portraying a young and beautiful face and body is driving people to seek aesthetic treatment and accelerating the exponential growth of nonsurgical aesthetic (NSA) procedures. Unfortunately, despite impressive advances, NSA is yet to have a formal clinical education program.

Objectives: This study aimed to identify the content and structure of an evidence-based postgraduate curriculum in NSA.

Methods: The Delphi questionnaire was developed after a comprehensive literature review and a focus group discussion. The questionnaire was emailed to 40 experts and 20 trainee physicians worldwide through the online survey platform and was asked to assign a rating on a 4-point Likert scale. A “1” represents a strong disagreement about integrating a topic in the NSA curriculum, and a “4” indicates a firm agreement. A pre-fixed percentage agreement of 80% and Cronbach’s $\alpha = 0.90$ was established to represent a consensus for the current study.

Results: The response rate for the Delphi study was 90.0%, 88.8%, and 90% in the first, second, and third rounds, respectively. The experts and trainee physicians agreed with all the proposed topics ($\geq 80\%$) and considered them critical for the proposed NSA curriculum. The mean score for each was ≥ 3 , and Cronbach’s α value for the Delphi was 0.94, confirming internal consistency and reliability.

Conclusions: The consensus demonstrates significant advances toward developing an evidence-based curriculum for a postgraduate program in NSA, which is essential to support the growing demand for trained aesthetic physicians.

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The urge for portraying a young, beautiful face and body is driving people to aesthetic clinics and fueling the exponential growth of nonsurgical aesthetic (NSA) procedures globally. According to a 2020 survey by the International Society of Aesthetic Plastic Surgeons (ISAPS), NSA procedures grew by 5.7% in 2020, totaling 14.4 million procedures worldwide despite the global pandemic.¹ The increasing affluence and changing attitude toward life and living in society are driving such phenomenal growth and consequently accelerating the demand for qualified physicians with NSA expertise. This rapid growth in aesthetic

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procedures warrants comprehensive training and education for residents in order to ensure quality care and maintenance of patient safety standards.² Unfortunately, the NSA lacks a formal clinical education program despite impressive growth. Therefore, it is crucial to recognize and address the gaps in training and education to optimize patient outcomes.³ A global-needs assessment survey of aesthetic physicians has established the need for a standardized curriculum for education and training in NSA procedures. To promote safe and optimal clinical outcomes, the authors recommended urgent attention from the policymakers and academic institutions for designing a bespoke clinical training course in NSA to train future physicians.^{4,5}

There are several steps involved in curriculum design and development. The critical step in designing and developing any authentic evidence-based curriculum is assessing the need by identifying the gap between current and desired clinical practice and determining the new curriculum topics. Subsequently, content mapping is essential to align with the learning outcomes, appropriate teaching and learning methods, and assessment strategies.

The curriculum must be comprehensive to address the need of patients and practitioners. It is essential to develop a curriculum that ensures patients' safety, patient care, professionalism, and procedural skills without compromising trainees' learning experience.^{3,6} Traditionally, postgraduate medical education and training curriculum is designed and developed by program leads and validated by experts from the same institution.^{7,8} Trainee physicians are critical stakeholders and are often ignored in the curriculum development process. However, it is recommended to consult stakeholders such as educationalists, trainees, non-expert members of the society, and other support functions, thereby assuring the development of an equitable, versatile curriculum and following the patients' current needs with the ability to evolve to accommodate future needs of the patients. Additionally, a curriculum must facilitate excellence by providing enough opportunity for continuous assessment and trainers' feedback to trainees. Therefore, the current study uses a modified Delphi technique to identify the content and structure of an evidence-based postgraduate NSA curriculum.

METHODS

Study Design

This study uses a cross-sectional survey design. Therefore, it is vital to consult a group of recognized subject matter experts and trainee physicians to gather their opinions and develop a consensus among stakeholders, such as program directors, educators, and trainee physicians. Hence, a modified Delphi technique was used for consensus

building among global experts who actively deliver training and education for NSA procedures.

Expert Panel

The authors constituted a globally recognized expert panel to participate in the consensus-building process. Participation in the study was optional; however, it has been demonstrated that the physicians who volunteer to serve on expert panels are often reflective of their peers.⁹ All the invited experts had over 20 years of experience in NSA practice, training, and education and are also active members of aesthetic plastic surgery, dermatological, and aesthetic medicine societies such as the American Society of Aesthetic Plastic Surgery (ASAPS), American Academy of Dermatology (AAD), American Society of Dermatological Surgery (ASDS), Australian Society of Aesthetic Plastic Surgery (ASAPS), Australian Society of Cosmetic Dermatology (ASCD), British Association of Aesthetic Plastic Surgeons (BAAPS), Indian Association of Aesthetic Plastic Surgeons (IAAPS), Brazilian Society of Dermatology, Chinese Association of Plastics and Aesthetics, Indian Association of Dermatologists, Venereologists and Leprologists (IADVL), and several regional scientific forums (Table 1). Moreover, the selection was further reinforced by their ongoing contribution to academics, clinical research, and lectures at key scientific congresses. Furthermore, the authors invited a group of trainee physicians (≤ 3 years of experience in NSA) to participate in the focus group discussions (FGDs) along with experts and in the final round of the Delphi process.

Questionnaire Development

After a comprehensive literature review, the questionnaire development process was initiated by organizing 2 facilitated FGDs with NSA experts ($n = 6$) and trainee physicians ($n = 6$). First, the focus groups identified critical themes for inclusion in a future NSA curriculum. Next, the FGD had an in-depth discussion of the themes and grouped them under appropriate headings such as Basic Science, Clinical Science, Professionalism, Ethics, Regulations, Research, and Critical Thinking, encompassing the broad learning objectives for developing knowledge and skills, and attitude. After the FGD, the author (N.K.) asked each participant to suggest any other topic for inclusion in the master list. It is essential to respect the views of each member of the FGD and, subsequently, prepare an exhaustive list of topics for the Delphi round.

Subsequently, a survey questionnaire was developed based on the themes and topics generated during FGD (Supplemental Material). The questionnaire was sent through an e-mail to 40 experts and 20 trainee physicians

Table 1. Geographical Distribution of Expert Panel

| Country | Speciality | Invitation sent | Response received |
|----------------------|------------------------|-----------------|-------------------|
| Argentina | Plastic surgeon | 1 | 1 |
| Australia | Plastic surgeon | 2 | 1 |
| | Dermatologist | 1 | 1 |
| Belgium | Dermatologist | 2 | 1 |
| Brazil | Dermatologist | 2 | 2 |
| | Plastic surgeon | 1 | 1 |
| Canada | Plastic surgeon | 1 | 1 |
| | Oculoplastic surgeon | 1 | 1 |
| Colombia | Facial plastic surgeon | 1 | 1 |
| Germany | Dermatologist | 2 | 2 |
| China | Plastic surgeon | 3 | 2 |
| France | Plastic surgeon | 2 | 2 |
| Japan | Plastic surgeon | 1 | 1 |
| Italy | Maxillofacial surgeon | 1 | 1 |
| India | Plastic surgeon | 2 | 1 |
| | Dermatologist | 2 | 2 |
| Malaysia | Plastic surgeon | 1 | 1 |
| Poland | Dermatologist | 1 | 1 |
| Russia | Dermatologist | 2 | 2 |
| Singapore | Plastic surgeon | 1 | 1 |
| Switzerland | Aesthetic physician | 1 | 1 |
| Saudi Arabia | Plastic surgeon | 2 | 2 |
| South Africa | Dermatologist | 2 | 1 |
| United Arab Emirates | Dermatologist | 2 | 2 |
| United Kingdom | Aesthetic physician | 2 | 2 |
| United States | Dermatologist | 1 | 1 |
| | Plastic surgeon | 1 | 1 |

across the globe using an online survey platform www.surveymonkey.net (Palo Alto, CA) between January 2020 and May 2020. A reminder was sent to all who did not respond after 45 days. The expert members were asked to attribute a rating to each employing a 4-point Likert scale, where “1” represents strongly disagree with the integration of the topic in the NSA curriculum and “4” represents strongly agree. Experts were requested to provide suggestions in the comment box which can be included in the subsequent round.

Determination of Consensus

There is no definite rule regarding the number of cycles for questionnaire administration. However, the process stops once the desired agreement between the experts is reached. Besides, there is no definite recommendation for delineating the agreement during the modified Delphi process. A pre-fixed percentage agreement of 80% and Cronbach's $\alpha = 0.90$ were established to represent a consensus for the present study.^{10,11}

Data Collection and Analysis

Delphi Round 1

Following the questionnaire development, an e-mail invitation was sent to the panel members requesting them to rate the appropriate topics for inclusion in the NSA core curriculum. Experts were also asked to suggest any other topic that they felt relevant and should be included in subsequent rounds.

Delphi Round 2

Scores from the first round were analyzed, and items that $\geq 80\%$ of experts rated as essential were suitable to be included in the NSA curriculum. Subsequently, the survey questionnaire was modified, and items with substantial consensus were removed to reduce the number of questions. This exercise reduces the “participants’ fatigue” and increases the response rate.¹² Finally, the experts were requested to review their decision or explain the rationale for the difference of opinion. Round 2 offers the experts another chance for rethinking and modifying their opinion.

Delphi Round 3

After analyzing the consensus scores from the first and second rounds, the final list of the items was presented to trainee physicians for external validation.

Statistical Analysis

IBM SPSS Statistics for Mac, Version 27.0, was used for statistical analysis (IBM Corp. Armonk, NY). Each topic’s relevance was determined by calculating the mean score and percentage agreement between the panel members, and internal reliability was determined by calculating Cronbach’s α .¹³

RESULTS

In the first Delphi round, the response rate was 90.0% ($n = 36$), the second round had an overall response rate of 88.8% ($n = 32$), and finally, the third round’s (trainee physicians) response was 90% ($n = 18$). The experts’ panel agreed ($\geq 80\%$) on all the proposed topics and found them essential for the NSA curriculum. The mean score for each topic was ≥ 3 , and Cronbach’s α value was 0.94 for the Delphi, confirming internal consistency and reliability. The external validation demonstrated that experts and trainee physicians are in 100% agreement with the inclusion of the proposed topics in the NSA curriculum. A summary of the final consensus outcome is listed in [Tables 2-5](#).

DISCUSSION

As far as the authors could ascertain, this is the first evidence-based “Core Curriculum” for NSA based on

consensus, independent of what is currently embedded in some of the core specialty training. The modified Delphi technique is a proven methodology and is frequently used in medical education research for competency and curriculum development. It attempts to determine “the extent of agreement (consensus measurement) and to resolve disagreement (consensus development)” in the case of inconclusive or inconsistent data on a specific subject.¹⁴ The Delphi approach is formed as an efficient tool to systematically gather the views of experts to reach a consensus on issues without any prejudice. Moreover, using an online questionnaire offers flexibility to approach experts across large geographies, and the encrypted construct offers panel members the chance to express their views relentlessly. Finally, the Cronbach α value of 0.94 implies that the experts’ panel had sufficient members to reach an agreement.

The curriculum is often created in an institutional context by academics who may have some knowledge in the field of study and may not necessarily have sufficient experience in teaching and learning strategies in a clinical setting. The proposed curriculum is based on the FGD with experts and trainee physicians followed by 3 rounds of Delphi, which has provided enough opportunity to survey respondents for thinking and reflecting to make decisions and achieve consensus.

The expert panel suggested including cadaver-based clinical anatomy teaching in the future curriculum. This is supported by the growing body of evidence, indicating that the aesthetic workforce comprises healthcare practitioners with diverse clinical backgrounds with a significant degree of heterogeneity in the intricate facial anatomy knowledge.^{10,15,16} This not only impacts the pretreatment evaluation but also adds to devastating complications, some of which may result in permanent disability or disfigurement. As a result, it is critical to be trained on potential risks associated with NSA procedures. Furthermore, they also recognized the significance of pretreatment caution, diagnosis, and managing possible adverse effects. The expert panel unanimously suggested including aseptic technique, risk and benefit assessment of the treatments, diagnosis, management, and prevention of any potential complications, as well as proper documentation for subsequent referrals.

The expert panel recommended including all the proposed topics in the Delphi round 1 concerning basic and clinical sciences in the curriculum. In addition to the listed topics, the experts suggested the inclusion of anatomy and physiology of hair in the basic science section, including cell-based therapies (platelet-rich plasma [PRP] and stem cells) and the treatment of axillary hyperhidrosis in the clinical science section. Although the majority ($\geq 80\%$) of survey participants agreed on the need to include nonsurgical aesthetic procedures of the male and female genitalia; however, the review of evidence on its safety is highly controversial.¹⁷⁻¹⁹

Table 2. Core Curriculum for Nonsurgical Aesthetics—Basic Science

| Basic science | | | | |
|---------------|--|------------|-------------|-----------|
| Sl. No. | Topics | Mean score | % Agreement | Consensus |
| A01 | Anatomy, physiology, and aging of the skin and soft tissue | | | |
| | Skin microbiology and its importance to asepsis in nonsurgical procedures | 3.64 | 100% | Yes |
| | Relevant dermatological conditions/diseases such as acne, melasma, rosacea, herpes, dyschromia | 3.41 | 100% | Yes |
| | Anatomy and physiology of hair | 3.35 | 100% | Yes |
| | Prevention and treatment options for common skin conditions | 3.52 | 100% | Yes |
| A02 | Clinical anatomy of the face and other areas of aesthetic interest | | | |
| | Topographical features and aesthetic zones | 3.11 | 100% | Yes |
| | Musculoskeletal anatomy | 3.17 | 100% | Yes |
| | Neurovascular anatomy | 3.11 | 100% | Yes |
| | Fat morphology | 3.11 | 100% | Yes |
| | Recognition of the danger zones and related risk areas | 3.11 | 100% | Yes |
| A03 | Pathophysiology of aging | | | |
| | Biology of aging and its impact on the progression, prognosis, and prevention | 3.21 | 100% | Yes |
| | The dynamics of the aging process | 3.21 | 100% | Yes |
| | Effect of personal, interpersonal, and societal factors on aging | 3.31 | 100% | Yes |
| | Ethnic differences in aging | 3.09 | 100% | Yes |
| A04 | Concepts, attitudes, and changing trends of beauty | | | |
| | Neurobiology of aesthetic appreciation | 3.12 | 100% | Yes |
| | Appreciation of beauty through art | 3.06 | 87% | Yes |
| | Cultural and regional concepts and preferences of beauty | 3.12 | 100% | Yes |
| | The motivation for aesthetic procedures | 3.12 | 100% | Yes |
| A05 | Pharmacology of botulinum toxin, soft-tissue fillers, and bio stimulators | | | |
| | The science behind the threads | 3.18 | 100% | Yes |
| | Overview of pivotal-trial data and real-world evidence | 3.12 | 100% | Yes |
| A06 | Principles of energy-based and radiofrequency-based devices | | | |
| | Laser | 3.25 | 100% | Yes |
| | Intense pulsed light (IPL) | 3.18 | 100% | Yes |
| | The light-emitting diode (LIPLLED) | 3.06 | 100% | Yes |
| | Other Energy-based treatments such as radiofrequency (RF), skin tightening (monopolar, bipolar, tripolar RF, and HIFU) | 3.12 | 100% | Yes |
| | Body contouring devices (cryolipolysis, radiofrequency) | 3.18 | 100% | Yes |
| | Overview of pivotal-trial data and real-world evidence | 3.12 | 100% | Yes |
| A07 | Chemical peels and dermabrasion | 3.18 | 90% | Yes |

Table 2. Continued

| Basic science | | | | |
|---------------|---|------------|-------------|-----------|
| Sl. No. | Topics | Mean score | % Agreement | Consensus |
| A08 | Micro-needling and scar revisions | 3.18 | 90% | Yes |
| A09 | Introduction to cell-based therapy and regenerative aesthetics | 3.12 | 90% | Yes |
| A10 | Dermatological formulations for essential skincare, anti-aging, stimulation, and lightening | 3.18 | 93% | Yes |
| A11 | Management of high-risk groups such as those with mental health conditions | | | |
| | The psychological condition of dysmorphia | 3.06 | 100% | Yes |
| | Condition of monosymptomatic hyper-chondriac psychosis | 3.06 | 100% | Yes |
| | Psychosexual impacts of body image disorder | 3.06 | 85% | Yes |
| | Appropriate screening tools to recognize risk group | 3.18 | 100% | Yes |
| A12 | Empathy in aesthetic practices | | | |
| | Role of empathy in aesthetic practices | 3.18 | 100% | Yes |
| | Neurobiology of empathy | 3.12 | 82% | Yes |
| | Empathy as practice | 3.12 | 100% | Yes |

HIFU, high intensity focused ultrasound.

Moreover, they also recommended the inclusion of research methods and critical thinking. Evidence-based medicine (EBM) supports the practice of clinical decision making anchored on the best available scientific evidence. Likewise, asking the right clinical questions, ascertaining the evidence, critically appraising and employing it, all are essential skills for future physicians.²⁰ It is crucial to develop future physicians' critical thinking and research skills to promote inquiry-based learning, to promote the practice of EBM, and to generate real-world evidence.

The expert panel recognized the importance of shared decision making and the role of empathy in aesthetic practices and also recommended including it in the curriculum. The rapid expansion of the internet and smartphones has played an enormous role in empowering patients and minimizing the information asymmetry between physicians and patients. Patients are actively willing to participate in the decision-making process concerning their health and well-being. Therefore, physicians must adjust to the changing environment and develop shared decision-making skills. Empathy is critical for the harmonious physician-patient relationship, increased patient satisfaction, and compliance to treatment plan resulting in improved patient outcomes. A curriculum aimed at reinforcing empathy in trainee physicians is urgently needed.^{21,22} Literature suggests that training and education can improve empathy and compassion in physicians.²³

Furthermore, the experts' panel unanimously recommended including practice development, professional and ethical marketing, and interpersonal communication skills in the NSA curriculum. Evidence suggests that

miscommunication leads to poor clinical outcomes. Hence, developing effective communication skills in physicians is now a global priority, and medical schools are putting significant resources behind it.²⁴

In recent years, cell-based therapies such as PRP and stem cells are gaining popularity as the "next big thing" in the scientific community, public, and mainstream media. A recent survey highlights the ethically unacceptable practice in the cell-therapy advertisement. Those aesthetic practitioners should have a thorough understanding of the principles and procedures of the cell-based practice and underpinning regulations.²⁵ Several over-the-counter cosmetics and anti-aging products claim to contain stem cells in their scientifically unproven direct-to-consumer marketing messages to allure the public. Most of such claims are unsubstantiated and based on anecdotal evidence. However, early evidence suggests the potential therapeutic benefit of embryonic and adult stem cells.²⁶ The experts' panel recognized its emergence and recommended the inclusion of regulations about cell-based therapies in the NSA curriculum so that trainees can be sensitized around the ethics and need for scientific evidence. Interestingly, the American Society of Plastic Surgeons (ASPS) and the American Society of Aesthetic Plastic Surgeons (ASAPS) raised their concerns on stem cell-based aesthetic procedures' safety and efficacy.²⁷

Although the NSA curriculum is visible within the 4 distinct core competencies, ie, plastic surgery, dermatology, facial plastic surgery, and oculoplastic surgery, and has embraced the concept of EBM in many countries,

Table 3. Core Curriculum for Nonsurgical Aesthetics—Clinical Science

| Clinical science | | | | |
|------------------|--|------------|-------------|-----------|
| Sl. No. | Topics | Mean score | % Agreement | Consensus |
| B01 | Nonsurgical aesthetics principles including aseptic technique and instrument preparation | 3.53 | 100% | Yes |
| B02 | Patient consultation, assessment, and preparation | 3.43 | 100% | Yes |
| B03 | Shared decision making | | | |
| | Formulate a management plan for the optimal clinical outcome | 3.53 | 100% | Yes |
| | Realistic expectation setting | 3.53 | 100% | Yes |
| | Assessments of risks and benefits of the treatment plan | 3.46 | 100% | Yes |
| B04 | Informed consent to include alternative therapies in case of an emergency | 3.53 | 100% | Yes |
| B05 | Anesthesia and pain control management | 3.46 | 100% | Yes |
| B06 | Emergency preparedness | 3.53 | 100% | Yes |
| B07 | General theory, diagnosis, management, and prevention of complications | 3.59 | 100% | Yes |
| B08 | Nonsurgical aesthetics procedures of the face and neck (knowledge and technical skills) | | | |
| | Application of botulinum toxin | 3.40 | 100% | Yes |
| | Application of soft-tissue fillers and bio-stimulatory agents | 3.40 | 100% | Yes |
| | Application of laser for skin resurfacing including fractionated CO ₂ , erbium, NdYAG laser (hair removal), energy-based devices for skin-tightening-HIFU, RF skin-tightening, cryolipolysis for the management of sub-mental fat | 3.40 | 100% | Yes |
| | Application of platelet-rich plasma therapy | 3.40 | 100% | Yes |
| | Use of threads for facial rejuvenation | 3.31 | 92% | Yes |
| | Chemical peel for facial rejuvenation | 3.31 | 100% | Yes |
| | Micro-needling for refinement of mature scar | 3.31 | 100% | Yes |
| | Dermabrasion techniques for aesthetic enhancement | 3.31 | 100% | Yes |
| B09 | Nonsurgical aesthetics procedures of the limb and torso (knowledge and technical skills) | | | |
| | Application of soft-tissue fillers and bio-stimulatory agents | 3.31 | 100% | Yes |
| | Application of botulinum toxin and other treatment modalities for the management of axillary hyperhidrosis | 3.46 | 100% | Yes |
| | Application of laser for skin resurfacing including fractionated CO ₂ , erbium, NdYAG (hair removal) | 3.40 | 100% | Yes |
| | Body contouring procedures (cryolipolysis, radiofrequency) | 3.40 | 100% | Yes |
| B10 | Nonsurgical aesthetics procedures of the male and female genitalia (knowledge and technical skills) | | | |
| | Anatomy of male and female genitalia | 3.40 | 100% | Yes |
| | Nonsurgical vulvovaginal and penile rejuvenation | 3.11 | 82% | Yes |

HIFU, high intensity focused ultrasound; Nd-YAG, neodymium-doped yttrium aluminum garnet; RF, radiofrequency.

including the United States and the United Kingdom, the work presented here is more elaborate with detailed breakdown and themed under 6 domains as described above. Furthermore, current core competencies are not designed to serve or support the healthcare practitioners

with a non-specialty background in standardizing their NSA training based on patient-centricity and procedural safety. Moreover, there is a lack of widespread collaboration among the specialties to achieve standardized and unified competency, which we endeavor to attain.

Table 4. Core Curriculum for Nonsurgical Aesthetics—Professionalism, Regulation, and Compliance

| Professionalism, regulations, and compliance | | | | |
|--|---|------------|-------------|-----------|
| Sl. No. | Topics | Mean score | % Agreement | Consensus |
| C01 | Medical records keeping clinical photography informed consent and photographic reproduction | 3.46 | 100% | Yes |
| C02 | Regulatory issues including local healthcare compliance requirements | 3.40 | 100% | Yes |
| C03 | Regulation of cell therapies and advanced therapies medicinal products (ATMP) | 3.40 | 100% | Yes |
| C04 | Professional, ethical standards including physician/patient relationship and responsibility | 3.46 | 100% | Yes |
| C05 | Practice development | | | |
| | Leadership and team-based practice | 3.46 | 100% | Yes |
| | Interpersonal and communication skills | 3.40 | 100% | Yes |
| | Organizational management | 3.59 | 100% | Yes |
| | Digital marketing (websites, blogs, reviews, search engine optimization) | 3.28 | 100% | Yes |
| | Social media and e-mail marketing | 3.28 | 100% | Yes |
| C06 | Medical ethics | | | |
| | Respect for patients' autonomy | 3.81 | 100% | Yes |
| | Nonmaleficence | 3.68 | 100% | Yes |
| | Principle of beneficence and justice | 3.75 | 100% | Yes |

Table 5. Core Curriculum for Nonsurgical Aesthetics—Research Methods and Critical Thinking

| Introduction to research methods and critical thinking | | | | |
|--|---|------------|-------------|-----------|
| Sl. No. | Topics | Mean score | % Agreement | Consensus |
| D01 | An effective literature search in the knowledge domain | 3.40 | 100% | Yes |
| D02 | Principles of narrative synthesis, systematic reviews, and meta-analysis | 3.28 | 100% | Yes |
| D03 | Ethical issues related to clinical research | 3.34 | 100% | Yes |
| D04 | Epidemiological and statistical concepts related to research | 3.00 | 100% | Yes |
| D05 | Formulate research questions, hypotheses and generate real-world evidence | 3.28 | 100% | Yes |
| D06 | Dissemination of research findings | 3.53 | 100% | Yes |

The present study enables creating an evidence-based curriculum in NSA education to support the development of trainee physicians' knowledge, skills, and attitudes as per predefined learning objectives. The curriculum is comprehensive and encompasses basic and clinical science, practice development, regulatory guidelines, interpersonal skills, and empathy in clinical practice. Moreover, the proposed curriculum is not prescriptive; instead, it can be a blueprint for the program directors to develop a structured, evidence-based postgraduate course in NSA. The authors believe that this first step toward the standardization of

curriculum will be a "giant leap" in establishing an evidence-based curriculum in NSA education.²⁸

The present research can be used as a template for course design and implementation by academic and clinical program directors. For the health regulators and professional statutory regulatory bodies, this is evidence to consider and argument for creating a new specialist training pathway in NSA, a step that is long overdue to mitigate the growing concern of patient safety. Moreover, creating a specialist training pathway will add to the supply of adequately trained competent physicians to meet the growing demand.

Limitations

Like any other research, the current study has several limitations. Firstly, we assumed that one could be deemed an expert based on their year of clinical experience without any established evidence. However, the clinical expertise and skills required to construct a robust clinical education curriculum are distinct. Nevertheless, our expert panel possessed diverse clinical experience together with trainee physicians representing a wide geographical area to reduce any selection bias which is inherent to Delphi study. They expressed their views openly and contributed to the consensus-building process. The divergent nature of the panel strengthened the findings as each member brought their expertise and contributed to the process. Secondly, the current study only included experts and trainee physicians in the consensus-building process; however, the authors would recommend soliciting inputs from the patients as well during the implementation of the curriculum.²⁹

CONCLUSIONS

This Delphi study paved the way for creating an NSA postgraduate program. In addition, this consensus exemplifies a significant step forward in developing an evidence-based curriculum for NSA education, which is critical to support the growing demand for qualified aesthetic physicians.

Supplemental Material

This article contains supplemental material located online at www.asjopenforum.com.

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