

Supplementary 1: COREQ (Consolidated criteria for reporting qualitative research) Checklist

A checklist of items that should be included in reports of qualitative research. You must report the page number in your manuscript where you consider each of the items listed in this checklist. If you have not included this information, either revise your manuscript accordingly before submitting or note N/A.

Topic	Item No.	Guide Questions/Description	Reported on Line No.
Domain 1: Research team and reflexivity			
<i>Personal characteristics</i>			
Interviewer/facilitator	1	Which author/s conducted the interview or focus group?	
Credentials	2	What were the researcher's credentials? E.g. PhD, MD	
Occupation	3	What was their occupation at the time of the study?	
Gender	4	Was the researcher male or female?	
Experience and training	5	What experience or training did the researcher have?	
<i>Relationship with participants</i>			
Relationship established	6	Was a relationship established prior to study commencement?	
Participant knowledge of the interviewer	7	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	
Interviewer characteristics	8	What characteristics were reported about the interviewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	
Domain 2: Study design			
<i>Theoretical framework</i>			
Methodological orientation and Theory	9	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	
<i>Participant selection</i>			
Sampling	10	How were participants selected? e.g. purposive, convenience, consecutive, snowball	
Method of approach	11	How were participants approached? e.g. face-to-face, telephone, mail, email	
Sample size	12	How many participants were in the study?	
Non-participation	13	How many people refused to participate or dropped out? Reasons?	
<i>Setting</i>			
Setting of data collection	14	Where was the data collected? e.g. home, clinic, workplace	
Presence of non-participants	15	Was anyone else present besides the participants and researchers?	
Description of sample	16	What are the important characteristics of the sample? e.g. demographic data, date	
<i>Data collection</i>			
Interview guide	17	Were questions, prompts, guides provided by the authors? Was it pilot tested?	
Repeat interviews	18	Were repeat interviews carried out? If yes, how many?	
Audio/visual recording	19	Did the research use audio or visual recording to collect the data?	
Field notes	20	Were field notes made during and/or after the interview or focus group?	
Duration	21	What was the duration of the interviews or focus group?	
Data saturation	22	Was data saturation discussed?	
Transcripts returned	23	Were transcripts returned to participants for comment and/or	

Topic	Item No.	Guide Questions/Description	Reported on Line No.
		correction?	
Domain 3: analysis and findings			
<i>Data analysis</i>			
Number of data coders	24	How many data coders coded the data?	
Description of the coding tree	25	Did authors provide a description of the coding tree?	
Derivation of themes	26	Were themes identified in advance or derived from the data?	
Software	27	What software, if applicable, was used to manage the data?	
Participant checking	28	Did participants provide feedback on the findings?	
<i>Reporting</i>			
Quotations presented	29	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	
Data and findings consistent	30	Was there consistency between the data presented and the findings?	
Clarity of major themes	31	Were major themes clearly presented in the findings?	
Clarity of minor themes	32	Is there a description of diverse cases or discussion of minor themes?	

Developed from: Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

Once you have completed this checklist, please save a copy and upload it as part of your submission. DO NOT include this checklist as part of the main manuscript document. It must be uploaded as a separate file.

Supplementary 2: English version interview guide: *concerns and untoward consequences of introducing the NLE*

Dear Colleague,

I have indicated to you that I am supporting the Federal Ministry of Health to conduct a research project on the impacts of introducing a national licensing examination on the health workforce education and practice.

This interview aims to obtain your ideas, experiences, and opinions regarding the untoward consequences of introducing the NLE to the anesthesia education program.

The information obtained will only be used for research purposes and will remain confidential and your anonymity will remain protected at all times.

This interview will take about 30 to 60 minutes to complete.

Do you have any questions before we start the interview?

May I audio-record the interview, as it would help me to listen to it again later and to make a transcript of the interview for data analysis purposes?

You have already read through the information booklet and listened to my presentation on it.

SECTION ONE: BASIC INFORMATION

I would like to start with some basic demographic questions about yourself

1. Sex: _____
2. Profession: _____
3. Institution name: _____
4. Department (if applicable): _____
5. Current position: _____
6. How long have you been working in this teaching institution? _____

SECTION TWO: MAIN INTERVIEW

Area	Interview Questions and Probes
A1. Curriculum	<p>1. What, if any, undesired changes have been made to the competencies, content, and delivery of the anesthesia curriculum due to the NLE?</p> <p><u>Probes:</u></p> <ul style="list-style-type: none"> ▪ What unwanted changes have been made to the anesthesia program competencies and outcomes? ▪ What untoward changes have been made to the different contents of the anesthesia curriculum (e.g. basic sciences, social and population health, clinical and professional)? ▪ How does the NLE negatively affect the teaching and learning activities across the classroom, skill labs, and clinical teaching areas? <p>2. How, if any, did the introduction of the NLE affect the relationship between the different departments/ units involved in teaching the anesthesia students negatively?</p>
A2. Assessment	<p>3. How does the introduction of the NLE affect the school's/department's assessment policy and practices negatively?</p> <p><u>Probes:</u></p> <ul style="list-style-type: none"> ▪ Are there untoward changes in the department's assessment policy? Can you explain them? ▪ What unwanted changes, if any, in students' formative and summative assessments have happened due to the NLE?
A3. Students	<p>4. What, if any, negative changes have been made in the student selection, admission, and support systems as a direct result of introducing the NLE?</p> <p><u>Probes:</u></p> <ul style="list-style-type: none"> ▪ Any untoward changes made to the number and diversity of students? ▪ Any untoward influences on student behaviors, motivation and study approaches?
A4. Academic staffs	<p>5. What, if any, unwanted changes have been made on staff composition and conduct due to the introduction of the NLE?</p> <p><u>Probes:</u></p> <ul style="list-style-type: none"> ▪ How the number and diversity of anesthesia instructors affected? ▪ How the role and conduct of anesthesia instructors changed negatively?
A5. Educational resources	<p>6. What, if any, unwanted changes have been made regarding the educational resources as a result of the NLE?</p>
A6. Quality assurance (QA)	<p>7. What, if any, undesired changes have been made to the institutional quality assurance system as a direct result of introducing the NLE?</p> <p><u>Probes:</u></p> <ul style="list-style-type: none"> ▪ What untoward changes have been regarding the involvement of different stakeholders in the QA process?

Area	Interview Questions and Probes
	<ul style="list-style-type: none"> ▪ How does the emphasis given to QA affected (e.g. resource allocation, structural modification, etc.)?
A7. Governance and administration	<p>8. How does the introduction of the NLE affect institutional governance and administration negatively?</p> <p><u>Probes:</u></p> <ul style="list-style-type: none"> ▪ What undesired governance changes have been made affecting the performance of the anesthesia department/ school? ▪ What unwanted changes occurred on budget allocation to the department? ▪ Any undesired changes on the administrative structure and support to the department?

I would like to thank you for your time and participation in this study.

Supplementary 3: English version focus group guide: *the concerns and untoward consequences of introducing the NLE*

FOCUS GROUP STRUCTURE

Dear Colleagues,

I have indicated to you that I am supporting the Federal Ministry of Health to conduct a research project on the impacts of introducing a national licensing examination on the health workforce education and practice.

This focus group aims to obtain your ideas, experiences, and opinions regarding the untoward changes made to the anesthesia education program as a direct result of introducing the national licensing examination.

The information obtained will only be used for research purposes and will remain confidential and your anonymity will remain protected at all times.

This focus group will take about 90 to 100 minutes to complete.

May I audio-record the discussion, as it would help me to listen to it again later and to make a transcript of the interview for data analysis purposes?

You have already read through the information booklet and listened to my presentation on it.

SECTION ONE: INTRODUCTION TO THE FOCUS GROUP

Instruction to the moderator (after receiving consent)

- Introduce yourself and provide a brief introduction about the study using the letter of information and the brief note indicated on the previous page
 - Provide a brief explanation of how the focus group will be conducted, including the audio recording of conversations.
 - Explain the following ground rules of focus groups
- Ground rules**
- Inform the ground rules to participants by saying:

1. "As there are no wrong or right responses to discussion questions, all of your ideas and thoughts are respected and no criticism is allowed."
 2. "As you all have different backgrounds and experiences, please share your views even if they might differ from others."
 3. "Each one of you will have an equal opportunity to speak as I am interested in hearing the thoughts of you all. Thus, if any one of you is speaking too much, I may give the chance to others to speak. And, if you are not talking a lot, I may ask you to speak. The aim is to allow an individual of you to share your different unique experiences."
 4. "Please don't assume that you have to respond to me during our discussion. Feel free to respond to what your colleague has said, whether you agree or disagree, or if you want to give an example."
 5. I'm here to listen, ask questions, and ensure that everyone has an opportunity to speak.
- As part of the preparation for the focus group, ask participants to silence their cell phones.
 - Moderator asks participants to introduce themselves by saying. "Now, let's start. Let's go around the table one by one and learn more about each other. Tell us about your:
 1. Sex: _____
 2. Where do you work/ study: _____
 3. When did you take the NLE? (for graduates) _____

SECTION TWO: MAIN FOCUS GROUP

Area	Focus group questions and probes	Time
Perception towards NLE (introduction)	1. How do you see the relevance of NLE in anesthesia education? <u>Probes:</u> <ul style="list-style-type: none"> ▪ What do you think the purposes of NLE are? ▪ What do you think the disadvantages of NLE? 	10 minutes
A1. Curriculum	2. What, if any, unwanted changes have been made to the competencies, content, and delivery of the anesthesia curriculum due to the NLE? <u>Probes:</u> <ul style="list-style-type: none"> ▪ What untoward changes have been made to the learning activities employed in the anesthesia program? ▪ What irrelevant changes on elements (if any) of the curriculum content (basic sciences, public health, clinical science, and professional courses) have been made due to NLE, and why? ▪ What unwanted changes in the teaching skills of instructors have been made? 3. How does the NLE affect the relationship between the different departments/ units involved in teaching the anesthesia students negatively? (within the institution and across the nation)	15 minutes
A2. Assessment	4. How does the introduction of the NLE impact the school's/ department's assessment policy negatively? <u>Probes:</u> <ul style="list-style-type: none"> ▪ What unwanted changes happened regarding students' assessment to support their learning (formative) and decision (summative) in the classroom, simulated and clinical areas? 	10 minutes
A3. Students	5. What, if any, untoward changes have been made in the student selection, admission, and support systems as a result of introducing the NLE? <u>Probes:</u> <ul style="list-style-type: none"> ▪ How the number and quality of students is changed negatively due to the NLE? ▪ What, if any, undesired changes happened in your behaviors, motivation or study approaches as a student? 	15 minutes
A4. Academic staffs	6. What, if any, undesirable changes have been made on staff composition, role, and conduct? <u>Probes:</u> <ul style="list-style-type: none"> ▪ How does the NLE negatively affect the role, conduct, and performance of anesthesia instructors (in planning, facilitating, assessing, and evaluating learning)? 	10 minutes

Area	Focus group questions and probes	Time
A5. Educational resources	7. What, if any, untoward changes have been made regarding the educational resources required for the classroom, skill lab, clinical area, and community-based teaching as a result of the NLE?	
A6. Quality assurance	1. What, if any, undesired changes have been made to the institutional quality assurance system as a direct result of introducing the NLE? <u>Probes:</u> <ul style="list-style-type: none"> ▪ What untoward changes have been regarding the involvement of students in the QA process? ▪ How does the emphasis given to QA affected (e.g. resource allocation, structural modification, etc.)? 	10 minutes
A7. Governance and administration	2. How does the introduction of the NLE affect institutional governance and administration negatively? <u>Probes:</u> <ul style="list-style-type: none"> ▪ What undesired governance changes have been made affecting the performance of the anesthesia department/ school? ▪ What unwanted changes occurred on budget allocation to the department? ▪ Any undesired changes on the administrative structure and support to the department? 	10 minutes
Way forward	3. What do you want to see changed about NLE?	10 minutes

I would like to thank you for your time and participation in this study.

Supplementary 4: Coding tree: *the concerns and untoward consequences of introducing the NLE*

Table 1: Concerns and untoward consequences of the anesthetist NLE: categories, sub-categories and codes

Central category	Sub-category	Codes
(a) Exam management (concerns)	(1) Contested exam validity	Exam content, teaching content, scope of practice, exam emphasis, exam design, examinee performance, alignment/ congruence
	(2) Perceived exam unfairness	Learning environment disparity, uneven faculty involvement in NLE, inequal remediation, covid-19, political instability
	(3) Lack of consistent consequence	Variable NLE enforcement, rising unemployment rates, low program self-review performance
(b) Educational management (untoward effects)	(4) Focused teaching and learning to pass the exam	Disrupted assessment, disrupted learning and teaching, emphasis on theory
	(5) Faculty overload and dissatisfaction	Heightened accountability, uncompensated workload, demotivation and resistance, deprived personal development opportunities
	(6) Educational reforms lack sustainability	Poor system support, individualized reform, desperation, inadequate understanding of the NLE data, blame-shifting,
(c) Student behavior (untoward effects)	(7) Harmful psychosocial effect	Stress, work overload, exhaustion, substance abuse, diminished productivity, family expectations, economic dependence
	(8) Growing cheating behaviors	Cheating, faith, faculty encouragement, security