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## The Patterns of Professional Identity Development among Medical Graduates of a SPICES Curriculum

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### ABSTRACT

**Objective:** This paper describes the patterns of professional identity development (PID) among medical graduates of a SPICES (i.e., Student-centred/teacher-centred; Problem-based/information gathering; Integrated/discipline-based; Community based; Elective/uniform; and Systematic/apprenticeship-based) curriculum implemented by the School of Medical Sciences, Universiti Sains Malaysia (USM). **Methods:** The phenomenological study design evaluated 50 medical graduates of USM who underwent housemanship at government hospitals in the Peninsular of Malaysia. Focus group interviews (FGI) were conducted to explore and capture the experience of the participants in relation to PID during medical training. Eight FGI sessions were conducted at a specific place as agreed by both researchers and participants. A thematic analysis technique assisted by Atlas.ti software was used to analyse the qualitative data. **Results:** The thematic analysis revealed that there were two themes: self-development and professional development. The self-development theme was represented by four categories: self-confidence, internal and external motivation, communication skills, and problem solving. The professional development theme was represented by five categories: social adjustment, leadership skills and management, team work, hands-on skills, and creativity. **Conclusion:** The formation of professional identity among USM medical graduates was related to self-development and professional development. This suggests that the USM medical curriculum is vital in shaping professionalism attributes among its medical graduates that are balanced among knowledge, skills, behaviours and values. Producing balanced medical graduates will ensure the highest quality of healthcare services provided to the country. The implications of this study and recommendations are discussed.

**Keywords:** *Professional identity development (PID), Medical graduates, SPICES medical curriculum*

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### INTRODUCTION

The main agenda of higher education institutions is to produce high-class graduates who have adequate knowledge and skills in order to meet the national

mission (1). For that reason, a broad holistic and integrated curriculum has been developed in the higher education setting (2). One of the components that should be seriously considered to be incorporated in curriculum design is professional identity.

Many theories and principles have been discussed in the literature to understand the concept of professional identity development (PID), particularly in higher education settings (3). Professional identity is developed by a complex interaction of many elements, such as knowledge, skills, human values and subject content (4). In a higher education system, PID is regarded as an on-going process of understanding and reinterpretation of knowledge in order to produce highly competent workers (4).

In medical education, teaching medical professionalism is a fundamental component of medical education, and the main objective is to ensure that students can understand the nature of their future work and its obligations, as well as internalise the value system of the medical profession (5, 6). Therefore, medical education is not only about acquiring an appropriate level of knowledge and developing relevant skills, but it also requires students to develop their professional identity (7). The way in which medical students develop their professional identity has important implications for their own well-being and for the relationships they form with their fellow workers and patients (8). Thus, aside from imparting the knowledge and skills necessary for the practise of medicine, medical schools must also ensure that their curriculum will enhance in students the ability to think, act and feel like a physician (5). Because PID is influenced by multiple factors such as the nature of the profession, authenticity of learning experience, and alignment between university and work roles (3, 9), in addition to embedding professional identity in formal academic activities, it should also be integrated in non-academic activities such as extracurricular programmes to foster and facilitate professional identity formation (10, 11).

Recent trends in medical education focus on identity formation, which has led medical education professionals to guide medical students to develop their professional identity (12, 13). Consequently, many approaches, methods, and activities have

been combined into a single, holistic and integrated curriculum. However, this curriculum needs to be examined to ensure its effectiveness in shaping professional identity during medical training. Harden et al. (2) have incorporated their SPICES model (i.e., Student-centred/teacher-centred; Problem-based/information gathering; Integrated/discipline-based; Community based; Elective/uniform; and Systematic/apprenticeship-based) into the medical curriculum. Since its inception, the USM medical school has incorporated the SPICES model in its medical training curriculum in order to produce competent doctors. Although the SPICES curriculum has been implemented for the last few decades, no study explores the consequences of the SPICES curriculum on its medical graduates. Therefore, this study aimed to explore patterns of PID among medical graduates of a SPICES curriculum implemented by the USM medical school.

## METHODOLOGY

### Research Design

A phenomenological study design was carried out to explore PID dimensions among medical graduates. The study participants were selected by the purposive sampling technique based on the following criteria: (i) completed medical training at USM; and (ii) undergoing housemanship at government hospitals in the Peninsula of Malaysia. The estimated sample size based on achieving a data saturation point was a maximum of 60 house officers. Ethical approval was sought and obtained from the Human Ethics Committee of USM prior to data collection.

### Data Collection

Focus group interview (FGI), a qualitative data collection method, was performed to gather the experience of house officers related to PID during their undergraduate medical training. FGI is a way of collecting

data that essentially involve the engagement of a small number of people in an informal group discussion that focus around a particular topic or a set of issues (14). The interviews were conducted in hotels near the workplace of the participants from April 2015 to February 2016. Data collection ceased once the data saturation point was attained at the 5<sup>th</sup> interview. The interviews were audio recorded after getting permission from the participants and then transcribed verbatim. Each transcript was labelled with a specific code. For instance, in the code GR1-2/5/2015, GR1 means group interview 1, and 2/5/2015 is the date of the group interview conducted, which was on the 2<sup>nd</sup> May 2015. To ensure the credibility, transferability, confirmability and dependability of the qualitative data, several strategies such as triangulation, member checking, thick description and an audit trail were implemented.

### Data Analysis

The transcripts were analysed by thematic analysis to generate insights and meaningful ideas that emerged from the data (15). This analysis is appropriate to construct and incorporate the personal meaning of participants on dimensions of PID that were developed as a result of the five-year undergraduate medical training in USM. This analysis involved three steps: (i) the audio records were transcribed verbatim by the researcher; (ii) the transcripts were repeatedly read and examined to identify terminologies, concepts and ideas that were related to the study objectives; and (iii) the relevant concepts generated from the second step were then clustered into specific categories and themes. The three steps were repeated until no new themes or categories emerged (16).

## RESULT

Data collection was ceased after eight FGI sessions because the data saturation

point was achieved. A total of 50 house officers participated, and their profiles are summarised in Table 1.

Data analysis generated two themes and nine categories. The themes were self-development and professional development. The nine categories were self-confidence, internal and external motivation, communication skills, problem solving, social adjustment, leadership skills and management, team work, hands-on skills, and creativity. Each theme and its categories are further described in the subsequent subsections.

**Table 1:** Participant profiles

Item		Number of participants	Total
Gender	Male	20	50
	Female	30	
Ethnic group	Malay	30	50
	Chinese	10	
	Indians	10	

### Theme 1: Self-development

Self-development occurs over the course of the entire life of a person (6, 17). Positive self-development for medical students is crucial in order to become a good doctor. This study reveals self-development comprises four categories: self-confidence, internal and external motivation, communication skills, and problem solving.

#### Category 1: Self-confidence

All of the participants admitted the significance of the self-confidence component in their PID. Data showed that they strongly agreed that Problem Based Learning (PBL), a SPICES medical curriculum component, had contributed to the knowledge and skills that helped them during the housemanship (HO) period. For instance,, several participants remarked about self-confidence:

“...during the HO, we have to present cases to the specialist...and the skill of the presentation has always been practised in...so PBL has helped us to be more confident...” GR2/2/7/2015

“...presenting a case in PBL, for example, is an opportunity to cultivate the students’ self-confidence. Since we have been familiarised with a problem during PBL sessions, it is easier to handle a similar problem that we have received in the real situation...” GR1/5/5/2015

### **Category 2: Internal and external motivation**

Internal motivation occurs when someone engages in a behaviour due to his/her own internal desire to gain something that is personally rewarding (18). Extrinsic motivation occurs when someone is motivated by external factors to put efforts into earning rewards or avoiding punishment (18). Both types of motivation are crucial elements of PID. Several participants shared their insights on this element:

“...on the student oriented orientation, almost activities, such as discussions and presentations as well are conducted by the group members (students)...meaning that we actively involved ourselves during the study; supporting each other is our practise...this has led to a motivation zone...” GR520/1/2016

### **Category 3: Communication skills**

In the medical context, communication is considered a two-way interaction between doctors and patients. This skill is vital in shaping PID among doctors. For instance, several participants from different interview sessions echoed this element:

“...in the Community and Family Case Study (CFCS) programme, we focus on disease; we know the CFCS programme is conducted in the sub-urban population...so we

didn’t understand their language, values, etc. However, after a certain period, we were able to understand many things more easily...so we knew the patient’s background and how to deal with them properly...this experience we got from the CFCS activities was conducted in pre-clinical years of the study...finally it helps us in communicating better with a real patient in clinical years...” GR4/10/12/2015

“...we organised many activities during the CFCS programme, many people came to see us...we conducted interviews with them to know the back-ground, customs... people discuss with us many things that related to their health...so directly and indirectly we developed a high capacity of communications especially with the clients...” GR2/2/7/2015

“I agree that CFCS has provided us the skills to identify the peoples’ problems, and we are also suggesting some prevention measures to reduce those problems. Besides that, we also develop positive communication skills with them...this situation helped me on how to effectively interact with real patients during the HO...” GR3/10/9/2015

### **Category 4: Problem solving**

Developing problem-solving skills is a crucial element of PID to ensure that medical schools produce competent future doctors who will be able to treat patients with the highest standard of care. The majority of the participants shared similar insights on this element. For example:

“In the PBL session, we were given a problem to be solved; we must know the issues in detail by analysing them; we discuss what should we do, how to explore the problems there, such as diagnosing disease professionally... so we learn about how to solve a problem in reality...” GR1/1/5/2015

“...CFCS programme has exposed the students to problems that occur in a real situation, whereby we have to manage many issues such as administration and academic issues, so by doing so we try to solve problems properly...” GR3/10/9/2015

## Theme 2: Professional Development

Professional development refers to the activities that are performed by individuals to improve or sustain their professional credentials through seminars, coursework, informal education, attachments and conferences (19). In this study, five elements of professional development emerged: social adjustment, leadership skills and management, teamwork, hands-on skills, and creativity.

### Category 5: Social adjustment

Social adjustment refers to the efforts of an individual to handle societal expectations in relation to standards, values, norms and needs in order to be accepted. In this study, it refers to efforts by the participants to understand the languages, values and emotions of their patients. The results showed that the participants gained meaningful skills related to social adjustment. The following comment reflected the element of social adjustment:

“...medical curriculum helped me a lot in order to understand the reality of the locals, for example, by joining CFCS and PBL programme, making us understand a variety of people in terms of languages, terminologies, culture, etc...CFCS programme also brought me closer to real society or patients that we will meet in the future...” GR5/20/1/2016

This element was further supported by another comment:

“...I very much agreed that specific activity in the curriculum has led me to improve my knowledge and

experience of the local society such as food, language etc..all these are crucial for us to be a good doctor in the future...” GR3/10/9/2015

### Category 6: Leaderships skills and management

Leadership is the ability of an individual or organisation to lead or guide people towards common goals and visions; it is an important attribute of medical professionalism in Malaysia (20). The elements related to leadership were frequently echoed by majority of the participants. For example:

“For example, I am a chairman of a committee, my team has organised many programmers. A few sub-committees have been set-up to facilitate the activities... this committee was setup based on the commitment and interest of the members...so, from this I learn how to organise it properly...” GR4/10/12/2015

“...before being an HO, we learned many related aspects in USM. For instance, students were given a specific task in PBL, so we have to conduct the task given properly by discussing it with the group members; here we learn about managing, and this situation will enhance other aspects as well...” GR3/10/9/2015

### Category 7: Teamwork

It is obvious that teamwork is an important attribute of medical professionalism that every doctor must develop and nurture regardless of the healthcare setting across the globe (20). Teamwork enables doctors to work collaboratively and eventually leads to improvement in the quality of patient care. This concept was echoed by the participants as follows:

“We are sure that we cannot do the best thing if we are alone; we must commit and work together in conducting activities such as PBL or CFCS and...” GR1/1/5/2015

“Collaboration is a vital element to ensure the effectiveness of an activity...that is why as a doctor, we practise this skill at all times... many jobs can be done well if you have good teamwork, this element is obvious in all activities we conduct...” GR2/2/7/2015

### **Category 8: Hands-on skills**

Hands-on skills refer to theory and practise being integrated in a syllabus. In USM, the integrated approach has been incorporated since the inception of its medical school. The importance of this insight was shared by the participants as follows:

“...in my point of view USM has been practising a good syllabus. For example, learning a topic of disease in PBL, we must think to solve the issue; we learn this in the pre-clinical year, which is Year 2 and 3, when in Year 4 and 5 (clinical year) it helps us in understanding the similar disease in reality...” GR3/10/9/2015

“...the benefit of the integrated system is significant...we learn basic science subjects in Year 1 and 2, meaning that after completing two years of the study, we possess a strong knowledge in science, so this will help us to easily capturing the clinical subjects...” GR5/20/1/2016

“...when being a doctor, we see various backgrounds of the patients in terms of educational level, socio-economic status and age... so experiences that were gained during the CFCS programme help a lot as we already understood the same characteristics of the patients’ background during CFCS. During the class sessions, honestly students only focus on how to pass the examination, not how to be a good doctor. While during the HO, yes we think about how to be a good doctor...” GR4/10/12/2015

### **Category 9: Creativity**

In general, creativity is the ability to go beyond traditional or common ideas, rules, patterns, relationships, or the likes and come up with meaningful new ideas, forms, methods, and interpretations. In the medical context, creativity is essential for doctors to create better solutions to improve the quality of patient care. Thus, promoting and nurturing relevant abilities related to creativity is an important aspect to ensure that doctors are able to effectively work with adversity and diversity in healthcare. This element was supported by the following statements:

“...sometimes the students should be more creative in conducting whatever activities or programmes. Lecturers only post ideas in general; then our responsibility is to define those ideas specifically, so we need to be a creator in certain time...” GR4/10/12/2015

“...in many activities students must be thinkers; we need to seriously think on how to organise a programme properly with minimum guidance from lecturers...” GR5/20/1/2016

## **DISCUSSION**

This paper examined the dimensions of PID as medical doctors among graduates of a SPICES medical curriculum implemented by the USM medical school. Two major themes emerged: self-development and professional development. As previously mentioned, self-development was represented by self-confidence, internal and external motivation, communication skills and problem-solving skills, while professional development was represented by social adjustment, leadership skills and management, teamwork, hands-on skills, and creativity. These findings are aligned with the medical professionalism attributes reported by studies done in the United States (21), Canada (22), United Kingdom (23), Middle East (24, 25), China (26),

Taiwan (27), Japan (28), Malaysia (20), Iran (29) and Uganda (30). The elements of PID are discussed in the subsequent paragraphs.

The self-development concept in the medical context refers to the gradual process by which a student acquires specific knowledge and skills during medical training to enable them becoming a good doctor. This study clearly suggests the five-year SPICES medical curriculum has nurtured important professional identity of good doctors in its medical graduates – self-confidence, internal and external motivation, communication skills, and problem-solving skills. Communication skills have been highlighted by several studies (20, 31) as an important competency of interprofessional collaborative practise for doctors to work effectively with other health professionals, patients and families (20, 32, 33). Other studies have shown that high competency in communication promotes professional behaviour during healthcare service delivery (32, 34). Furthermore, this skill increases the coping reservoir of future doctors (35, 36) to buffer the high level of psychological distress during housemanship training (37), as well as during medical training (38–40). Considering its important roles, communication skills must be continuously emphasised during medical training (41). Problem-solving skills are another important competency for becoming good doctors, ensuring that theory and practical skills are integrated to provide the highest quality of patient care to society. Developing self-confidence and regulation of self-motivation via internal and external factors are as important as communication skills and problem-solving skills in becoming better doctors. In fact, a recent study highlighted that self-confidence and self-motivation are important elements of medical professionalism in Malaysia to ensure excellence and commitment to professional development (20). These elements were developed most likely due to the exposure to problem-based learning (PBL), self-directed learning, and community-based learning during medical training. Shedding light on the outcomes of PBL on PID, van Berkel

et al. (2010) reported that PBL has favourable impacts on medical graduates' diagnostic reasoning skills, clinical skills, problem-solving skills, and academic skills, such as research and paper presentations (42). The implication of this study is that there may be a substantial relationship between the SPICES medical curriculum and PID of medical graduates in becoming good doctors.

The elements of PID that emerged from this study were social adjustment, leadership skills and management, teamwork, hands-on skills, and creativity. Previous studies demonstrated similar findings in which professional inclusivity strongly contributed to the development of identity as medical professionals and indeed must be embraced by medical students prior to graduation (43–46). Social adjustment is an exertion by an individual to work within the ethics and desires of a culture in order to be acknowledged, leadership is about the ability to influence people towards achieving shared goals, and management is the ability to effectively use available resources to fulfil the objectives of an organisation. Reflecting on the nature of healthcare organisation cultures and norms, these three skills are seen to be vital for healthcare leaders, including doctors, to bring about positive change and increase the success of healthcare delivery and implementation (47). In addition, those who excel in these elements have high potential to become good leaders who drive change that benefits healthcare organisations (47, 48). For example, previous studies showed that the leadership and management skills of physicians play an essential role in delivering high quality service to the clients (47, 48). Consistent with recent findings, appropriate management and use of health resources is part of medical professionalism attributes (20, 49). On top of that, adding positive values such as teamwork, high technical skills and creativity will further enhance the leadership quality of physicians, thus enabling innovation in medical field benefiting healthcare organisation and clients (47, 48).

Therefore, nurturing PID among future doctors is an important agenda to strengthen the field and ensure that the highest quality of healthcare services is provided. Failure to inculcate positive professional identity among future doctors will ultimately lead to unwanted consequences to the wellbeing of the population and eventually weaken the medical field.

Lastly, considering the results, several recommendations can be suggested: (i) a quantitative approach study that involves a broader population is recommended; (ii) the USM medical curriculum should be revisited in order to enhance components of professional identity in the medical curriculum; (iii) medical students should be adequately exposed to the patterns of PID to become good medical doctors; (iv) a specific study should be carried out on a specific group of medical students in the early phase of training to explore their PID, and the obtained results can be compared with those of this study; and (v) medical schools are strongly encouraged to organise non-formal or informal educational activities to promote PID among medical students.

## CONCLUSION

Professional identity development of USM medical graduates is related to self-development and professional development. This development suggests that the USM medical curriculum is vital in shaping professionalism attributes balanced among knowledge, skills, behaviours and values in its medical graduates. Producing balanced medical graduates will ensure the highest quality of healthcare services provided to the country. The implications of this study and recommendations were discussed.

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Sains Malaysia, Kubang Kerian, Kelantan, Malaysia. The authors are significantly responsible for planning the study, collecting data, analysing and interpreting the data, and reporting and writing the text.

## CONFLICT OF INTEREST

The authors are responsible for the content and writing of the article.

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