THE ROLE OF
COMMUNITY AND FAMILY CASE STUDY (CFCS) PROGRAMME
ON USM MEDICAL STUDENTS' PROFESSIONAL IDENTITY DEVELOPMENT:
A QUALITATIVE STUDY

by

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ABBREVIATIONS

CFCS	Community and Family Case Study
CBME	Community-based Medical Education
PID	Professional Identity Development
USM	Universiti Sains Malaysia
MOHE	Ministry of Higher Education
MQA	Malaysian Qualification Agency
SPICES	S – Student Oriented, P – Problem Based Learning, I – Integrated, C – Community-based, E – Electives, S – Systematic
MQF	Malaysian Qualification Framework
MQA	Malaysian Qualification Agency
FGD	Focused Group Discussion
SR	Student's Reflection

PERANAN PROGRAM KAJIAN KOMUNITI DAN KES KELUARGA (KKKK) KE ATAS PEMBANGUNAN IDENTITI PROFESIONAL DI KALANGAN PELAJAR PERUBATAN USM: SEBUAH KAJIAN KUALITATIF

ABSTRAK

LATAR BELAKANG: Semenjak penubuhan pusat pengajian sains perubatan USM, program Kajian Komuniti dan Kes Keluarga (KKKK) diperkenalkan selari untuk menggalakkan pembangunan identiti profesional ke atas pelajar perubatan sepanjang pengajian mereka.

TUJUAN: Kajian ini bertujuan untuk meneroka pembangunan identiti profesional pelajar perubatan semasa menjalani program KKKK.

KAEDAH: Pendekatan kajian kualitatif yang menggunakan jenis fenomenologi telah dijalankan. Pengumpulan data dilaksanakan melalui kaedah Perbincangan Kumpulan Berfokus (PKB) dan analisis dokumen. Kaedah variasi maksima dalam persampelan bertujuan telah digunakan dalam pemilihan peserta PKB. Empat sesi PKB (21 orang peserta) telah dijalankan dan dihentikan selepas data mencapai tahap tepu. Selain itu, 116 catatan diari reflektif pelajar telah dianalisa menggunakan kaedah analisis bertema

dalam berbentukan perisian Atlas.ti. Pelbagai langkah telah diambil bagi memastikan ketelitian data kajian kualitatif.

Keputusan: Berdasarkan analisis tematik, penyelidik telah mengenal pastiempat identiti, iaitu identiti peribadi, identiti peranan, identiti sosial dan identiti penyelidikan yang menyumbang kepada pembangunan identiti pelajar perubatan. Kajian ini menunjukkan bahawa pelajar menerima pelbagai kemahiran semasa program KKKK yang menyumbang kepada pembangunan empat identiti profesional tersebut. Selain itu, dapatan menunjukkan bahawa pelajar membangunkan identiti peribadi mereka melalui kemahiran pembelajaran, kemahiran insaniah dan nilai-nilai peribadi. Manakala identiti peranan telah dibangunkan melalui pendedahan kepada penjagaan pesakit semasa program KKKK. Pelajar juga menerangkan bahawa program KKKK telah memupuk kesedaran masyarakat dalam membangunkan identiti sosial mereka. Seterusny juga menunjukkan bahawa identiti penyelidikan pelajar telah dibangunkan melalui penggunaan epidemiologi dan kaedah penyelidikan yang telah digunakan semasa aktiviti penyelidikan dalam program KKKK ini.

KESIMPULAN: Hasil kajian menunjukkan bahawa program KKKK di USM telah menyediakan pengalaman kontekstual untuk menggalakkan pembangunan identiti profesional pelajar perubatan semasa pengajian mereka. Di samping itu, program KKKK di USM adalah unik dalam membangunkan kemahiran penyelidikan untuk pelajar. Oleh kerana itu, pusat pengajian perlu mengekalkan dan memperkasa program pendidikan perubatan yang bertapak di komuniti sebagai satu pendekatan untuk menggalakkan pembangunan identiti profesional pelajar perubatan secara berterusan.

THE ROLE OF COMMUNITY AND FAMILY CASE STUDY (CFCS) PROGRAMME ON USM MEDICAL STUDENTS' PROFESSIONAL IDENTITY DEVELOPMENT: A QUALITATIVE STUDY

ABSTRACT

BACKGROUND: Since the inception of USM medical school, the Community and Family Case Study (CFCS) programme was tailored to promote professional identity development of medical students during medical training.

OBJECTIVE: This study was conducted to explore medical students' professional identity development during CFCS programme.

METHODOLOGY: A qualitative design using phenomenological approach was conducted. Data were collected by focused group discussion (FGD) and document analysis. Maximal variation of purposive sampling was applied in sampling of FGD participants. FGD session was stopped once saturation was data achieved. Four FGDs (21 participants) were performed and 116 student reflection documents were analysed by thematic analysis using Atlas.ti software. Various measures were incorporated to ensure the rigour of qualitative results.

RESULTS: Based on the thematic analysis, we identified that personal identity, role identity, social identity, and research identity contribute to the development of medical students PID. The findings described that students' gained multiple skills during the CFCS programme that contribute to the development of these four professional identities. This study showed that students developed their personal identity through sharpening their leaning skills, soft skills and personal values. While students' role identity was developed through exposure to patient care during CFCS programme. Students also describe that the CFCS programme had fostered community awareness in developing their social identity. This study also showed that students' research identity was developed through the use of epidemiology and research methods which were applied during research activities in the CFCS programme.

CONCLUSION: This study demonstrated that the USM CFCS programme provides contextual experience for promoting the development of professional identity of medical students during medical training. In addition, the USM CFCS programme is unique in developing the research skills for the students. From that notion, medical schools need to maintain and enhance the community-based medical education as an approach to promote professional identity development of their students.

CHAPTER 1

INTRODUCTION

1.1 Background of the study

Personal identity exists in context of social and cultural role that usually takes more than one identity (e.g. a mother, a daughter, a teacher, a doctor). Professional identity is a complex structure that the individual uses to link their motivations and competencies to their career role, the development of professional values, actions, and aspirations, and an ongoing process of self-reflection on the identity of the individual (Wilson *et al.*, 2013). It is a continuous process through daily life experiences, including micro and macro-level (Stets and Burke, 2000).

Professional identity development (PID) plays a crucial role in the transition from medical student to doctor (Tan, 2014b). Medical students' identities are conceptualised as both socially constructed and deeply personal, whereby they developed their medical professional identity through formal, non-formal and hidden curriculum (Frost and Regehr, 2013). Upon entering medical or health sciences school, baseline professional identity (i.e. gender, profession, previous work experience in health sector, understanding of team working, knowledge of profession and cognitive flexibility) were found to be significant predictor to develop their professional identity (Adams *et al.*, 2006). Students who enter medical schools with pre-existing identity which was built up through

their life experience (Tan, 2014b) and medical school acts as a processor to produce doctors with a standard professional identity which resulted in professional behaviour (Yusoff, 2009).

One of the factors that contribute to medical students' PID is role model (Joubert *et al.*, 2006). Medical students expressed their anxiety to become a doctor after observed unethical practices by doctors such as patients' confidentiality and patients' autonomy issues (Hebert *et al.*, 1992; Joubert *et al.*, 2006). Malaysian media reported the issues of unethical doctors for example, greedy doctors who dupe patients to undergo unnecessary procedures and tests (Stanley, 2013). In addition to unethical conduct, information technology advancement has led to emerging issues in social media, for example, organ donation through Facebook (Palmdoc, 2015). Furthermore, complaints and query of doctor's credibility in handling basic cases such as prescribing wrong dose of paracetamol, and managing potassium correction for hypokaleamic patients (Forum, 2015).

Besides that, the President of Malaysian Medical Association (MMA) had addressed some issues regarding confidentiality of patients' medical record and the trends of government doctors migrating to general practitioners (Hari and Krishnan, 2014). These are among professionalism issues which reflect the products of medical schools. On the other hand, Maley (2009) also discovered that the graduates who have not experienced in community-based programme do not practice in rural area compared to those had experienced in community-based programme (Maley *et al.*, 2009). As a consequence, there is a

misdistribution of doctors working in urban and remote. In Malaysia, this a major issue being discussed (Latifa M. Hameed, 2014). There is a marked misdistribution of Malaysian doctors between rural and urban area, in terms of private and government doctors. For instance, doctors' distribution in hospitals is skewed towards the higher level of urbanisation states such as Kuala Lumpur, Selangor, Penang and Johor. While there is a lower distribution of doctors in lower urbanisation states such especially in Sabah, Sarawak and Pahang (Latifa M. Hameed, 2014). The population to doctors' ratio seems imbalance and skewed to urban states. These results clearly indicates that there is inequality of population-doctors' ratio in Malaysia, which may reflect how effective does the community programmes can produce graduates who may sacrifice to serve in remote area.

Furthermore, poor community education resulted in abundant of patients in outpatient clinic at tertiary centre, whereas patients can actually get comprehensive healthcare at community health clinics (MMA, 2014). This reflected that effective community education has not yet able to produce a desired public attitude towards healthcare services. Thus community-based programmes in medical schools should have a role to tackle these issue. Therefore, this study explored medical students' PID through community based education in the School of Medical Sciences, Universiti Sains Malaysia (USM).

1.2 Benefits of the study

By exploring students' experience of CFCS programme, this study is crucial in order to generate rich data regarding students' perspective on the role of CFCS programme in forming their professional identity which is one of the requirement listed in the Malaysian Qualification Framework of learning outcome domains for higher education. Furthermore, it may generate other evidence that cannot be evaluated from quantitative survey. Therefore, it may trigger further evaluation to the community-based programmes as the evidence for a better CFCS programme implementation and to fulfil the Malaysian Qualification Framework of learning outcome domains for higher education. Furthermore, Focused Group Discussion (FGD) can be used as a source for questionnaire development for measuring medical students' PID in CFCS programme.

1.3 Context of the study

1.3.1 The School of Medical Sciences, Universiti Sains Malaysia

This study was conducted in the School of Medical Sciences, Universiti Sains Malaysia (USM). The school was established in June 1979. In concordance to the school mission and vision (USM, 2015a), the undergraduate course is structured according to a multi-disciplinary approach with to the holistic approach to a patient's medical problems in relation to his/her family and community. The subjects involved in this study were from the MD old phase 3

programme (USM, 2015b). The undergraduate curriculum has been approved by the Ministry of Higher Education (MOHE) Malaysia and accredited by Malaysian Qualification Agency (MQA).

1.3.2 The Community and Family Case Study (CFCS) Programme

The Community and Family Case Study (CFCS) Programme is a major programme that is included in the USM Medical School SPICES curriculum (Harden, 2005; Zabidi-Hussin, 2006). The Malaysian Qualification Framework (MQF) (Framework, 2008) illustrated eight domains of quality for higher education institutions in Malaysia (figure 1.1). These domains act as USM's benchmarking and all programmes implemented in the USM Medical School should be aligned with the domains.

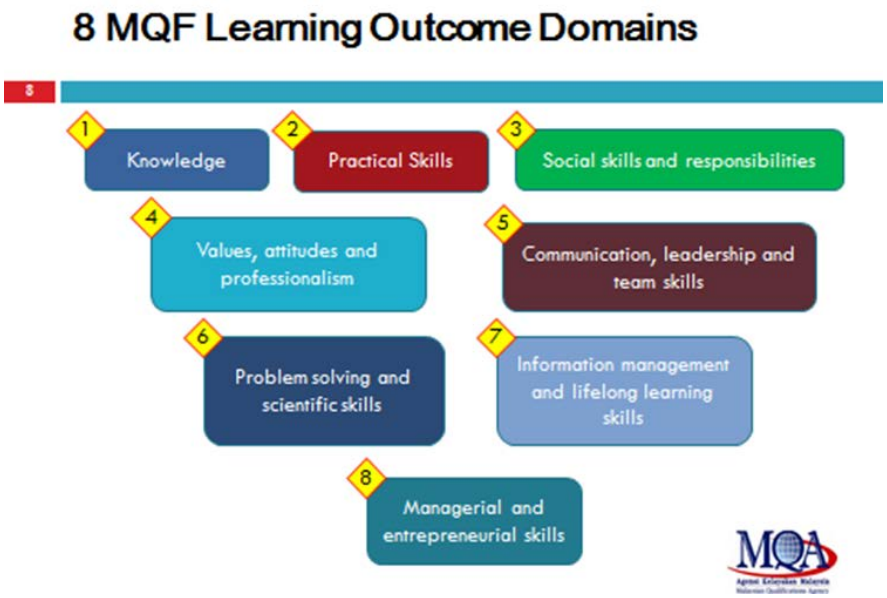

Figure 1.1 Malaysian Qualification Framework (MQF) Learning Outcome Domains for higher education by the Malaysian Qualification Agency (MQA, 2016)

The CFCS programme was implemented in USM Medical School since 1981 whereby the programme has been expanded over time (Zabidi-Hussin, 2006). The programme is aimed to prepare students' to become community doctors (Taib and Mohd Fakri, 2014). It is compulsory on all medical students during their second phase (second and third academic year) and third phase (fourth and fifth academic year). Satisfactory performance in CFCS is a prerequisite to sit for the professional 2 and professional 3 examination (Zabidi-Hussin, 2006). Medical students are allocated at certain district area during their second and third year for a community research and intervention programme.

The CFCS programme is divided into CFCS Phase II and CFCS Phase III:

- CFCS Phase II: Year 2 and year 3
- CFCS Phase III: Year 4

During CFCS phase II programme, students are required to interview, observe and understand application of epidemiology and risk factors thus relate all these experiences with the principle of public health in the community (School of Medical Sciences, 2010a; Taib and Mohd Fakri, 2014). Students need to stay with the villagers as their 'adopted family' for the total of 5 weeks during the second phase. They are divided into a few group (18-25 students per group) in different villages respectively (Zabidi-Hussin, 2006). Subsequently, students are supplemented with public health and epidemiological related lectures,

Problem Based Learning, and bioethics and communication skills training (Zabidi-Hussin, 2006).

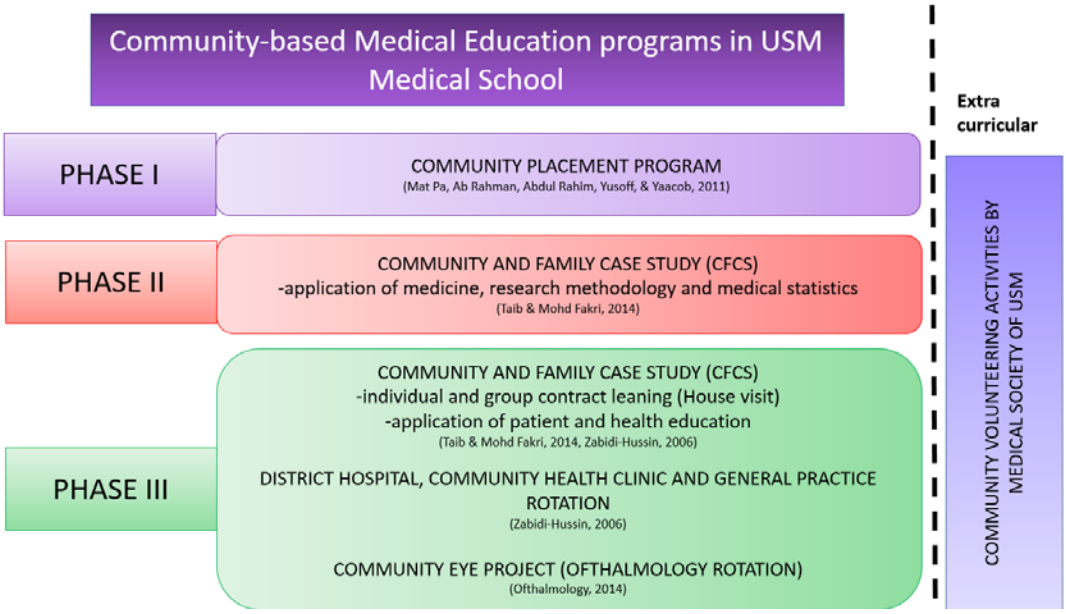

Figure 1.2 The Community-based Medical Education (CBME) in USM M.D curriculum.

While in phase III, the programme is more self-directed learning whereby students are required to have a learning contract (Zabidi-Hussin, 2006) for individual and group project . For individual projects, students are required to choose one patient in the community, and also a group of patients for froup projects. Patient(s) is/are chosen based on the following criteria (1) low socioeconomic background, (2) interesting and challenging to students, (3) chronic in nature and (4) living within reasonable distance from USM hospital (maximum 20 kilometres) (School of Medical Sciences, 2010a).They need to follow their objectives which has been stated in their learning contract and

subsequently they need to present with evidence for both cases. Students need to set their goals, plan and manage the individual and group case(s) through home visits (School of Medical Sciences, 2010b)

Other than the CFCS programme, students are also allocated at district hospitals and community health clinics in Kelantan during their Public Health Posting and Family Medicine Posting (Figure 1.2). They are required to observe and perform clinical procedures in district hospital and primary care setting. Other than that, students are also involved in the community eye screening during community eye service (Ofthalmology, 2014). In this one programme, students apply their skills of eye screening and made referrals to primary, secondary or tertiary centre when necessary.

1.4 Objective of the study

To explore medical students' professional identity development during Community and Family Case Study (CFCS) programme

1.5 Research questions

What are the dimensions of medical students' PID through the CFCS programme?

1.6 Operational definition

1.6.1 Professional identity

Professional identity is a result of a person's professional self-concept that results from a developmental process based on specific competencies required in the profession (role identity), in conjunction with their social environment (social identity) and their own self-concept (personal identity) (Stets and Burke, 2000).

1.6.2 Community-based Medical Education (CBME)

CBME is defined as an approach towards a medical curriculum which involved learning through experience that allows the interaction among medical students and the community (Harden, 2005).

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Researchers and educators keep on debating on relevant pedagogical strategies for students' Professional Identity Development (PID) and teaching professionalism (Stephenson *et al.*, 2001; Goldie, 2012; Trede, 2012; Frost and Regehr, 2013; Tan, 2014a). Stephenson stated 5 major areas deserving special attention in medical students' professional development (Stephenson *et al.*, 2001):

- student selection
- the informal curriculum
- teachers as good role model
- diversity and cultural aspects of medical practice
- teamwork in primary and secondary health care

Concerning on these areas, Community-based Medical Education (CBME) programme can be a part diversity of cultural aspects in medical practice as well as teamwork in primary and secondary healthcare.

CBME programme is essential in producing health professionals who can suit into the community (Salam, 2009). This can be achieved through an effective learning activities in community settings which can provide valuable experience to medical students, in parallel with good mentorship (Mennin and Petroni-Mennin, 2006). Medical students reflected their professional identities are formed in different angles, including exposure to various experiences, e.g. exposure to patients and community (Wong and Trollope-Kumar, 2014), and previous experience as health professionals (McLean *et al.*, 2015). Besides that, role models plays a major role in shaping students identity, whereby students tend to duplicate similar practices as they observed during their daily activities (Tan, 2014a) and clinical training (Haidet and Stein, 2006). Another essential elements involved in forming students' professional identity is the curriculum. Formal and hidden curriculum play a major role in shaping medical students' professional identity (Wong and Trollope-Kumar, 2014) through students' interaction with other professionals whereby learners developed positive state of mind and practical competence throughout their experiences (Dornan *et al.*, 2007).

Therefore, CBME as a formal curriculum may have a major influence on medical students' PID by providing an environment for them (Frost and Regehr, 2013). Furthermore, there are some aspects of hidden curriculum in CBME, which can be explained from literature shown the impacts of CBME programme (refer to conceptual framework, figure 2.4).

2.2 Community-based Medical Education (CBME)

Community-based Medical Education (CBME) can be a significant biological, social and psychological relationship among medical students, clinicians, communities, health services, governments and universities (Worley, 2002). The definition of serving learning and community-based medical education are overlapped (Hunt *et al.*, 2011). It was described as community-campus collaboration (Seifer, 1998b), whereby students learn and acquire professional competencies in a community setting, including basic clinical, research and communication skills, which can provide contextual learning that enabling trainees to provide care in local communities (Seifer, 1998b; Kennedy, 2006; Mennin and Petroni-Mennin, 2006; Hunt *et al.*, 2011; Mariam *et al.*, 2014; Okayama, 2014).

Generally, CBME emphasizes students in developing their personal attributes, interactional abilities, and application of knowledge. Literatures stated there are wide range of CBME goals; preparing students by sensitizing them to health problems in real community settings, develop interest among students to work in primary care, practice multi-disciplinary clerkship, and understanding bio psychosocial aspect of patients' illness, particularly in rural and underserved area (Seifer, 1998b). In addition, institutions also aim to develop a beneficial links between the university programme and community-based organization (Seifer, 1998b; Boyle *et al.*, 2009), and inter-professional collaboration

(Goodrow *et al.,* 2001). On the other hand, long-term aim of CBME programme is to tackle the shortage of doctors in rural area (Worley *et al.*, 2006). Concerning social accountability with diverse social and cultural needs as well as resource constraints, CBME was embedded in the curriculum to improve community health (Lam and Lam, 2009; Strasser, 2010).

2.2.1 Various approaches to Community-based Medical Education (CBME)

Various approaches to CBME had been identified, particularly in rural and remote settings (Maley *et al.*, 2009) which rely on the curriculum goals. The implementation of CBME generally based on the taxonomy of CBME which can be classified based on three approaches: service-oriented programme, research oriented programme and/or training-focused programme (Magzoub and Schmidt, 2000) (Table 2.2.1). Different institutions have different focus on their CBME programme, whereby majority of CBME programme focused on service-oriented programme and training-focused programme. Based on the most prominent approaches analysed, the author classified the USM CBME programme, specifically the CFCS programme under research-oriented.

The undergraduate medical curriculum in the University of Dundee implemented community based learning in 1995 as spiral approach (Harden *et al.*, 1997; Maley *et al.*, 2009). During phase 1, medical students are introduced to patients in the community emphasizing on their communication skills. While phase 2 students had a weekly general practitioner attachment and meeting with

the members of the department of General Practitioner, whereby students observe common illnesses in primary care and how to manage patient in primary care. After that, students learned patients' continuum of care between community and hospital during their community hospital attachment in phase 3.

Table 2.2.1 Distribution of CBME Programmes [adapted from (Magzoub and Schmidt, 2000)]

Community Development Programs	Health-Intervention Programs	Community- Based Research	Health- Facility-Based Research	Primary-Care-Oriented Training	Community Exposure
CBE program Faculty of Medicine, University of Gezira, Sudan	Community-based Education and Service Program (COBES) Faculty of Health Sciences, Nigeria	Community and Family Case Study (CFCS) Universiti Sains Malaysia, Malaysia	The Family Study University of Newcastle, UK	Chulalonkom University, Yhailand	Community-based Teaching Project University of Wales, UK
CBE program Faculty of Medicine, Suez Canal University, Egypt	Community-based Medical Education and Service Program (CBMESP) Bayero University, Nigeria	Family and Community Health Program Sultan Qaboos University, Sultanate of Oman		Beer Sheeva Experiment Ben Grion University of the Negev, Israel	Mental Health in the Community University of Liverpool, UK
CBE program Faculty of Health Sciences, Aga Khan University, Pakistan	Community-based Medical Education Program University of Maiduguri, Nigeria	Community-oriented Primary Care University of North Carolina, USA		The General Integrated Medical Program (GIMP) Univerisdad Autonoma, Mexico	
CBE program Cristian Medical College, India	Rural Comprehensive Health Program Obafemi Awolo University, Nigeria	University of Newcastle Medical School, Australia		The Upper Pemninsula Medical Education Program (UPMEP) Michigan State University, USA	
Institute of Medicine Tribhuvan University, Nepal	Institute of Health Sciences University of Philippines, The Philippines	CBE program Gadjah Mada University, Indonesia		Family Practice Preceptorship Program University of Limburg, The Netherlands	
Primary care curriculum University of New Mexico Medical School, USA	Area Health Education Centre (AHEC) Morehouse School of Medicine, Georgia, USA	Community-based project in rural Internships B.J. Medical College, India		Faculty of Health Sciences Linkoping University, Sweden	
	University Centre for Health Sciences, Yaounde, Cameroon			Minado State University College of Medicine, The Philippines	
				Public Sector Medicine Program (PSMP) University of South Florida, College of Medicine, USA	
				Institute of Clinical Medicine University of Tromso School of Medicine, Norway	

On the other hand, the medical undergraduate curriculum at the University College London Medical School (UCLMS) specifically allocated their CBME programme during General Medicine block (O'Sullivan *et al.*, 2000). The students are placed in different community firms for 5 week, where they attached to one specific practice in a small group. Students' activities include case clerking and presentation, one-to-one or one-to-two surgical teaching and practice, seminars and lectures.

In Japan, the Faculty of Medicine, Saga University, has implemented one week placement of medical students in a clinic followed by another week in community-based hospital (Kikukawa *et al.*, 2014). Students observe clinical practices such as outpatient and inpatient management and house visits. On top of that, students also got the opportunity to practice history taking. After finished their first week at respective clinics, students need to discuss their views as an addition to refine their goals for the following week. Finally the group members discussed with their teachers what they had learned after finishing the second week. This activity allows reflective-learning and sharing of different experience among the group members. Similar approach was implemented in Tokushima University, which was during the first-year to sixth-year medical course (Tani *et al.*, 2014). In their setting, lectures regarding community medical services such as medical insurance, nursing care system and the role of community hospitals and clinics were delivered. In addition, students were also oriented and informed the purpose of their visit.

As community per se is not an educational setting, developing a partnership between educational institution and community representative is essential (Majoor and Initiative, 2004). The Rural Medical Education programme of the State University of New York Upstate Medical University offered their students to undergo their 36 weeks clinical training in rural communities. Students spent their clinical training mostly with family physicians who act as their teaching supervisors. In addition, they visited community agencies, conduct community projects, and case presentation during

monthly faculty site visits (Smucny *et al.*, 2005). As supplementation to these activities, the Building Partnership Programme by the University of Queensland organized classroom-based teaching sessions and web-based resources, which are implemented throughout their four-year medical course (Boyle *et al.*, 2009). On top of that, technical working group of CBME programme for the medical schools in Africa that engaged in Medical Education Partnership Initiatives reported that in the early years of training, many African Medical School CBME rotation focused on conducting needs assessments and designing interventions to address community health problems (Mariam *et al.*, 2014).

Similarly in Malaysia, the School of Medical Sciences, Universiti Sains Malaysia implemented Community and Family Case Study Programme for their second and third year medical students (Taib and Mohd Fakri, 2014), whereby students are required to interview, observe and understand application of epidemiology, understanding the risk factors thus relate all these experiences with the principle of public health in the community. During the fourth year, students are required to have a learning contract for individual and group project. For individual project, students are required to choose a patient with chronic disease in the community and they need to follow their objectives which has been stated in their learning contract and subsequently they need to present with the project evidence. Regarding the group project, the groups are given certain amount of budget, and they need to set their goals, plan and manage a community project. Here, students made their own initiatives to collaborate with other institutions or community and health organizations to run the programme.

On the other hand, the Health Professions Schools in Service to the Nation (HPSISN) in collaboration with 17 health profession schools in United States, had implemented service-learning programme , whereby students applied team-based learning as a strategy to determine their service learning projects and their activities to the target population (Seifer, 1998b). They emphasis on reciprocal learning, citizenship skills and social change, reflective practice, and addressing community needs.

Community Partnership Programme was initiated by the Division of Health Sciences at East Tennessee State University to encompass interprofessional and interdisciplinary collaboration of college of medicine, nursing, and public and allied health (Goodrow *et al.*, 2001). Each college determined their own curricular goals. Students and from all three courses were team-taught and they spend one day a week to the rural communities during the first two years of the curriculum. It emphasizes on inquiry-based learning approach during field trips, population-based research, intervention projects, project evaluation and clinical rotation. Nursing and medical students had an early exposure to clinical skills and practice that emphasis on rural experience, collaborative interdisciplinary and interprofessional health profession education, while public and allied health students were focused in health administration, environmental health, health education, communicative disorders and physical therapy.

Another collaboration was demonstrated between the University of New South Wales, and the Greater Murray Area Health Service and Commonwealth Department of Health and Aged Care. They had established the Greater Murray Clinical School (GMCS), whereby the fourth year medical students come to the GMCS for three years community-based clinical training (Delaney *et al.*, 2002). Students follow their patients in the rural health care system for continuity of care, through the GCMS learning model. Students are required to fulfil a logbook of their patients and a reflective journal for feedback and reflections of their performance. The school implemented the programme based on adult learning principle, whereby it emphases more on student-centred learning and web-based learning in community context. As a supplementation to patient-centred learning, they integrated formal teaching sessions such as weekly thematic tutorials and bedside teaching (Sturmberg *et al.*, 2003).

2.2.2 Impacts of CBME on medical students

Evaluating any educational approach to curriculum is a challenging responsibility after designing and implementing the curriculum, which involves multidimensional process and products (Sturmberg *et al.*, 2003). An extensive literature search conducted by Hunt concluded mixed-method evaluations are likely the best way assessing CBME (Hunt *et al.*, 2011). A mixed method was used in evaluating CBME programme in the Faculty of Medicine, Saga University; pre and post-self-evaluation questionnaires as quantitative method and open-ended questionnaire (after programme) as qualitative method (Kikukawa *et al.*, 2014). Students gained four major perspective from the

programme experiences: inter-professional cooperation, trust based relationships, roles of community hospitals and clinics, and patient-centred medicine. Other themes extracted from the evaluation are competency in general practice, professionalism, medical management, communication skills, common diseases and long term care.

The University College London Medical School examined the students' perceptions of the advantages and disadvantages of a community-based firm were compared with their experiences of hospital-based firms, by a qualitative study using semi-structured individual interview and focused group (O'Sullivan *et al.*, 2000). Students perceived that CBME programme provided them to learn about psychosocial issues in medicine, increase their awareness of patient autonomy and improve their communication skills. On the other hand, students perceived clinical skills acquisition were equally learned in both hospital and community based setting. While in the University of Washington, an evaluation using data from student logbook records demonstrated that medical students at community practices saw a higher mean of patients and did more clinical procedures, while students at residencies gained more exposure on patients' health maintenance and pregnancy care (Seifer, 1998a).

Another qualitative study by The Building Partnership Programme in the University of Queensland Medical Programme demonstrates that students gained varieties of valuable experiences including students gained knowledge, confidence, developed own interest and soft skills (Boyle *et al.*, 2009).

Furthermore, some students pursue their contribution to the society by registered as volunteers for organizations.

On the other hand, the Community Partnership Programme of East Tennessee State University evaluated their students' attrition data throughout the programme, which involved three courses (nursing, medicine, and public and allied health)(Goodrow *et al.*, 2001). Public and allied health students who left the programme were because conflicted campus schedule, and community experiences were too much in nature. Nursing students did so for academic reasons; poor performance of in-campus courses. While medical students left the programme due to curricular content dissatisfaction, reluctant to spend quite a long period being in the community and concerned over their academic performance. As a result of interprofessional collaboration programme, nursing students perceived their medical colleague gaining greater respect for the nursing profession and nursing's role in their working environment. Furthermore, the institution also examined the impact of medical students' carrier choices who completed the Community Partnership Programme, which they found that majority selected family medicine residencies.

The Tokushima University CBME programme evaluated their medical students' attitude towards community medicine in remote area by using serial of questionnaires throughout their six-year programme (Tani *et al.*, 2014). They found that the students gain interest, sense of fulfilment and passion in community medicine. In contrast, the students perceived that they gain more

knowledge and understanding of community health and medicine during their lectures, not from CBME programme. As a result, their students in the developed their interest to be a generalist and specialist in community medicine.

The Rural Medical Education Programme (RMED) used different evaluation tools to achieve each their evaluation objectives. By using the data obtained from American Medical Association to compare their graduates practice distributions, they found that more graduates who underwent RMED programme practiced in rural area than non-RMED graduates (Maley *et al.*, 2009). Mailed questionnaires method were used to determine the importance of RMED programme in subsequent choice of geographic practice location. Most of the former RMED were satisfied with their location and believed that such programme was important in helping them choose a location. Semi-structured interviews with hospital administrators involved in RMED programme were conducted, and they responded that it helped them to recruit physicians and benefitted their medical staffs. By using data provided by the university's student affair office, the analysis showed that RMED students achieved higher academic performance than those non-RMED. Finders University also encountered that the academic performance of medical students in rural primary care was significantly the best, followed by secondary and tertiary placement. They determined the impact of CBME programme to their academic standards by comparing academic performance of students learning in primary, secondary and tertiary care setting (Worley *et al.*, 2006).

On the other hand, the four-year pilot Cambridge Community-based Clinical Course (attachment with general practice) of the Cambridge Medical School audiotaped their students' view on their course content and educational impact during regular debriefing sessions, which act as their evaluation tools (Oswald *et al.*, 2001). The students perceived the palm-top record method was helpful in reflecting their clinical experience and identifying patients during their teaching session. Furthermore, students got the opportunity to reflect on patients' illnesses and to form a close relationship with patients. Besides that, students also coped better with organization and the uncertainty, after they went through the difficulties in general practice. They also encountered students whom underwent the programme demonstrated a better communication skills and social awareness during their interview for house officer.

Another quantitative study to the students who underwent Community and Family Case Study (CFCS) programme , School of Medical Sciences, Universiti Sains Malaysia (Salam, 2009). Majority of students perceived leadership skills, positive attitude towards rural community, team building skills, communication skills and in-depth understanding of the health beliefs of socio-culturally diverse people, which are the criteria for five star doctors advocated by the World Health Organization (WHO).

Despite of that, medical students (Oswald *et al.*, 2001) and staff were found to face difficulties in recognising the relevance of community- based learning environment during the initial start of the programme (Sturmberg *et al.*,

2003). They also found that students have a strong tendency to compare their clinical experienced with their urban peers, resulted in anxiety and fears to pass their exam. Despite these obstacles, it was discovered that the full-time students in the School of Rural Health performed better in their exam compared to their urban peers.

2.3 Professional identity development

Professional Identity Development (PID) in medical students refers to the gradual process by which students assumed the identity of a physician over the course of their undergraduate medical training. Identity may be characterized in terms of:

(1) **Personal identity**, comprised of factors such as an individual's history, experience, personalities, feelings, goals, and values;

(2) **Role identity**, which refers to one's assumed social or professional functions, activities, and responsibility; and

(3) **Social identity**, understood as the commitment to the values and goals specific groups

(Stets and Burke, 2000).

In medical education, PID plays a crucial role in the transition from a medical student to a doctor (Tan, 2014a). Medical students' identities are conceptualised as both socially constructed and deeply personal, whereby they developed their medical professional identity through formal, non-formal and hidden curriculum (Frost and Regehr, 2013).

Upon entering medical or health sciences school, baseline professional identity (i.e. gender, profession, previous work experience in health sector, understanding of team working, knowledge of profession and cognitive flexibility) were found to be significant predictor for them to develop their professional identity (Adams *et al.*, 2006). Students enter medical schools with pre-existing identity build up through their life experience (Tan, 2014a) and medical school acts as a 'processor' to produce doctors with a standard professional identity which resulted in professional behaviour (Yusoff, 2009).

Besides that, students also perceived that good professional identities involved professional responsibility, complex professional relationships, and intellectual physician (Kavas *et al.*, 2015). Narrowing the scope into medical students' professional identity, Katja Ryynänen found that medical students commonly described themselves as helpers, listeners and health professionals (Ryynänen, 2001).