PuPUK: A community engaged medical curriculum by the School of Medicine, Universiti Malaysia Sabah

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Abstract

Background: The medical school of Universiti Malaysia Sabah (UMS) aspires to excel in teaching-learning and research activity in the field of medicine locally and regionally. The philosophy behind this is socially driven evidence based medicine. In order to achieve the above, a unique program called PuPUK was designed. This is an acronym for "Program Perkongsian Universiti Keluarga dalam Kesejahteraan Komuniti"or **University-Family Partnership in Community Wellness Program**. In this program, students will have a family based medico-social learning experience. Each student is engaged, throughout the 5 years medical course with a foster family from the rural area of Kudat. Thus students are provided with an opportunity to learn medicine in local socio-cultural context hosted by their foster families of Sabah, Malaysia.

Aim & Objectives:

- To appreciate the structure and functions of a family as an important unit in determining and influencing wellness and illness
- To appreciate the family dynamics in facing life events related to medicine

Methods: Students were exposed to a wide range of problems, unmet needs within a family and services available in the community. They were also familiarized with the activities of local leaders, local authorities, government agencies and even non-governmental organizations.

Results & Findings: The program had been running smoothly for the past 8 years. Overall, this community engagement program is well accepted by the selected rural communities of Sabah in Northern Borneo. It also serves as a social training component for medical students as they have to take the role of university ambassadors to the local communities. Some of the rationale, processes, and benefits are discussed in this paper.

Conclusion: To achieve the objectives of this programme named PuPUK, tripartite commitment of all parties concerned - **students, university and the community** – is essential.

Key words: PuPUK, UMS, community-engaged, university-family partnership, medical school

Introduction

The School of Medicine of Universiti Malaysia Sabah realised at its inception that to be sustainable it needed to have a relevant curriculum. The curriculum was conceptualized with an understanding of the setting where the school of medicine would be serving. The school of medicine is committed to carrying out its social responsibility and be accountable in serving the local community. This is line with the recommendation made by the World Health Organization.[1] This is reflected in our medical school philosophy "**Socially driven evidence based medicine**." It was noted that the region it was serving was much less developed compared to other parts of Malaysia (especially Peninsular Malaysia) and various socio-economic challenges may serve as a learning opportunities. The School set out in 2004 to design a curriculum based on the conditions found in Sabah at the time.

Sabah, "The Land Below the Wind" is unique in terms of the cross border relationship between Malaysia, the Philippines and Indonesia. It is Malaysia's second largest state in terms of both land and population size, estimated around 3 million people. It has a rugged landscape made up of extensive rainforest and towering mountain peaks. These mountains of the interior have prevented inland penetration. Although the coastal plains are small in proportion to the area of the state (74,240 km^2) they are the most developed and important parts from the point of view of settlement, agricultural and economic development.[2] The population of this state is culturally diverse. Sabah has 32 different ethnicities with 50 different languages and more than 90 different dialects spoken. Ethnic groups include Kadazan, Bajau, Murut, Kedayan, Iranun, Suluks, Hakka (Chinese), Brunei Malay, Malay and others that reflect the population evolution for generations.[2]

Among the 14 states in Malaysia, Sabah has the highest poverty rate in the country. It contains more than one third of Malaysia's total poor households. In 2004, during the inception of the School of Medicine Universiti Malaysia Sabah, some 24 per cent of Sabah's households were living below the national poverty line.[3] Sabah also has the highest level of hardcore poverty, at 6.5 %, it is six times greater than that in Sarawak. Among the poorest of the poor are the rural dwellers.[3] The irony of this is that people do not have to go far into the remote areas to witness this poverty. With the ever-growing socio-economic opportunities in the urban areas, people have abandoned the less developed rural areas, producing a shift out of the traditional rural poverty offset by increasing the urban poverty. Currently the population of Kota Kinabalu (the most urbanized district) is estimated at 492,655 (2006). That is roughly 17% of the total population of Sabah. The percentage of urban dwellers in Sabah has increased throughout the years. For example in 2005, 49.5% of Sabahan resided in urban areas compare to Kelantan (33.4%) and Sarawak (49.2%).[2] These percentages have increased tremendously since the 1970s.[3]

The complexities of the psychosocial issues are further compounded by the issue of later illegal migration from the neighbouring countries. Historically, Sabah was once part of Sulu and the Brunei Sultanate, therefore transmigration to Sabah has a very long history.[4] This creates an ongoing acculturative stress among the migrants and enculturative stress among the host citizens. The population census in 1970 did not record a non-citizen component of the population; however in the 2005 census 24.8% are non-citizens.[2] These staggering numbers have contributed to the growing numbers of urban poverty areas, better known locally as 'Kampung Air' or

'Kampung Setinggan'. With the numerous social health determinants, infectious diseases, chronic lifestyle related physical diseases and mental health problems prevail in this deprived population.

Another issue that serves as an obstacle to provide health care and service is the number of doctors working in this region. The health authority has made many policies to correct the maldistribution of doctors between East and West/Peninsular Malaysia, with some success. The public doctor: population ratio of Sabah in 2006 was 1:4362 which was still much lower than the national ratio.[2] Furthermore the distribution of doctors is more densely focused in the more developed, urbanized areas. The school of Medicine, Universiti Malaysia Sabah, is keen to be part of the effort in resolving this maldistribution in as a long term aim.

PuPUK model

PuPUK is an acronym for "*Program Perkongsian Universiti Keluarga dalam Kesejahteraan Komuniti*" or **University-Family Partnership in Community Wellness Program**. In this program, students have a family based medico-social learning experience. Each student is engaged, throughout the 5 years medical course with a "foster family" from the rural area of Kudat. Two students are "adopted" by a family, who they visit several times a year. In the first few years the students get to know the family and start to understand their culture and the health and social issues affecting them. In later years the students start to intervene on some of these issues, under the guidance of their supervisor. We have observed that the local family often sees it as an honour to host the adoptees and welcomed them as their own. Thus, the students are provided with an opportunity to learn medicine in the local socio-cultural context hosted by their foster families of Sabah, Malaysia.

Family and culture - the essential component of PuPUK

In order to serve better the rural or impoverished and culturally diverse population, Malaysia needs to produce more culturally compatible/competent doctors. The majority of the medical students come from West Malaysia, which is a more developed area of the country and from middle to upper income families. After graduation, they will face culturally diverse patients that are more comfortable speaking their own dialect, and have different beliefs, values and practices as well as being economically disadvantaged. An attempt must be made to bridge the differences between future doctors and the people. The curriculum must be designed and implemented to create a culturally sensitive and compatible group of doctors. A conscious effort made to prevent elitism among doctors. In the end, the school will be able to fulfill its social responsibility by nurturing more compassionate and people oriented medical team leaders.

One of the prevailing features of the Asian population is the extended family. In Sabah large families frequently stay together in a house and in some ethnic groups, families stay together in a long house. One family could easily consist of a dozen family members in one generation and may include three generations, with multiple health and social issues. This highly cohesive group

of people is the smallest and most important unit of Asian society. It has evolved as the bastion of culture, values and knowledge, passing them on from generation to generation.[5,6] This tacit knowledge in families sometimes conflicts with "medical" or "scientific" knowledge and this new knowledge either has to be assimilated with the old knowledge, or either the new or old knowledge needs to be rejected. Future doctors have to be prepared to understand this reality. Issues that may appear to be scientifically straightforward by doctors may not be easily accepted by the local indigenous or migrant people in Sabah. For example, heavy episodic drinking at funerals is a culturally accepted practice among the Rungus that has a spiritual meaning, in that they believe that they are not only drinking with their family and friends, but also with the dead. Heavy episodic drinking is not considered unhealthy by the community, unless it is done frequently.[7] These beliefs conflict with the current evidence and the messages that the students want to convey. This may require the students to question the scientific evidence being applied to the family and how best to articulate their scientific view points. The students also have to learn to cope with conflicts in their own personal beliefs and those of the local community, such as the issues abortion, alcohol consumption, suicidal ideas, teenage pregnancies and many other issues that are not only health related issues but also socially related issues. The medical students have to be exposed to some of the social determinants of health related behaviours through the local family perspective. Eventually they understand how the family culture impacts on resilience and wellness.

Kleinman[8,9] emphasized the importance of culture in medicine; the evidence for health disparities across ethnic and racial groups as well as for cultural influence on health-care practice is too impressive to overlook. Physicians need to understand how culture influences doctors as much as patients. Cultural factors are crucial to diagnose, treatment, and care. They shape health-related beliefs, behavior, and values. In the end, culture is about what really matters to people. That is, culture is about the changing moral experience of patients, families and practitioner, and how those moral experiences powerfully affect the doctor-patient relationship.

Community engaged medical education

Roger Strasser[10] described a hierarchy of community medical education programmes: *community orientated medical education, community based medical education and community engaged medical education*. The school has classified their community component of the medical curriculum based on the Roger Strasser's classification. Community orientated medical education aims to allow students to understand the social context of patients, without necessarily exposing them to the patients. Examples of community oriented program in the school are the Personal and Professional Development Module and Evidence Based Scientific Enquiry in year 1 and epidemiology in clinical practice and medicine and community posting in year 2. Community based medical education allows students to learn in a community, normally attached to general practice and came about as part of a recognition that most healthcare occurs in the community. Examples in our school include the district hospital posting.

Community engaged medical education is where the student is fully engaged with a local community and the local community is actively involved in hosting the students and helping them learn. In community engaged medical education, the relationship is expected to be

symbiotic, with benefits to both the students and the community and the students are expected to focus not just on disease, but also on the relationships that they have with the community. The community is not just used as a source of interesting case material, but are actively involved in teaching, research and community development. This form of medical education is a new development and there are still very few examples worldwide.[11] PuPUK is an example of community engaged medical education, which is unique because learning occurs within the context of the family and the process of engagement is long term. PuPUK runs spirally throughout the 5 year medical course. This long term social experiential learning allows PuPUK to be a platform to spirally and vertically integrate the medical teaching and learning from year 1 to the final year where the students are mature in personality, confidence, acquire comprehensive medical and health knowledge and more competent in skills (Figure 1).

The process of community engagement

Since its inception, the medical school has aimed for community ownership of the PuPUK programme. Since community empowerment is the ultimate aim of community health promotion, the medical school wanted to increase community awareness on the role of University in the development of the community. The intention was that the community and University would form a partnership, which has been shown to be important in ensuring the sustainability of other programmes.[10,12,13,14] When the programme was first conceived, the School of Medicine had to engage local decision makers and community members to ensure members of the community had some ownership of the programme. The School of Medicine made contact with the local authority and formally showed interest in engaging and forming a partnership with the rural communities of Kudat and finding families for our medical students. The State government of Sabah, with the Chief Minister, who was also the State Assemblyman for Kudat district, agreed in principle to the school's intention. Subsequently there were meetings with the local authority government agencies involving the District Officer, Native Chiefs, Head of Villages, etc., to explain the whole concept of PuPUK. The head of villages and villagers with respected positions, such as the school headmasters worked together with the administrative staff of the School of Medicine at Rural Medicine Education Centre. They discussed the selection of the foster families following the guidelines set by the University. In March 2004 the first batch of medical students were placed with foster families in the Sikuati area of Kudat. Since then, there have been 10 further batches of medical students: 723 medical students have been placed with 363 families from 38 villages.

Differences between puPUK and other programs

There are several other Universities that run programmes where students visit families and community,[15,16] but PuPUK is different in several ways. The main difference is that it is family focused rather than disease focused, which forces students to move away from a narrow biomedical focus. The PuPUK programme is based on a bio-psyco-social-spiritual approach of the students towards the family or community. Secondly, PuPUK is a longitudinal prospective experience in which the students look at the temporal relationship between life events, family

dynamics, health related behaviours and illness. We have found no other examples in the literature of a family engagement by medical students that is as long as five years. The students study the complex system that the family is part of and can observe first-hand the interplay of many factors. The final difference, which differentiates it from many schemes in developed countries, is that the student is expected to perform an intervention, under the close guidance and supervision of academic supervisors.

Benefits of PuPUK

To achieve its mission of socially driven medical education, the medical school needs to be fully accepted as part of the local community. To maintain the relationship, both University and community need to feel that they are benefitting from it. The PuPUK program keeps this relationship real and alive, by allowing a bidirectional sharing of ideas and knowledge between University and community. All academic staff supervise students for PuPUK and this means that all staff, many of whom are hospital based, gain an understanding of the local culture and health problems affecting the local community. This allows the activities of the medical school to remain relevant to the local community, which can be seen, for example, in the topics of the grant applications that come from the medical school.

The students gain an understanding of local health beliefs and practices, become aware of values specific to their family. As a result of this they learn to understand the worldview of people who are different to them and gain cultural sensitivity and an improved capacity for empathy. They start to understand the reasons behind health related behaviours and once they have gained this understanding they learn to use it to change these behaviours. Students often form strong attachments to the families and are highly motivated to maintain these relationships and ensure their families receive the best care from services. This motivation is part of what drives learning and encourages the students to gain a deeper understanding of the health and social problems in the family and evidence based interventions that may help these problems. Since the integrity of the relationship is important to the students, they gain an awareness of the importance of conducting these interventions in a way which will not jeopardise the long term relationship. The students become aware of deficits in their communication skills and are motivated to develop them. Besides the standard role playing, interviewing patients at the clinics and wards, PuPUK provide a platform to acquire soft skills in a real world setting. This real world setting, devoid of formality, allows students to experience the doctor-patient type of relationship away from their comfort zone. It does not mean that the medical students abandon the biomedical perspective. Rather it means that to articulate their medical opinion in this real world setting, they have to learn to be mindful of the many social and cultural issues that they may encounter.

The programme is designed to not only benefit the University and its students, but also the local community. The families benefit from the exchange of knowledge about health with the students. The students frequently find problems, such as hypertension, that the family was not aware of and lead them to seek treatment. The interventions performed by students are often successful and can be seen objectively at the end of five years, by measures such as reductions in blood pressure, weight, blood glucose and depression scale scores. The families become aware of their own efficacy in changing health outcomes and this increases community empowerment. Students

can also help families to become aware of and to access community resources that they are eligible for, such as welfare payments. Involvement in the programme gives the family the opportunity to access the free health clinic for PuPUK families. Students sometimes attend appointments with the family members and can help them to voice their concerns, ask questions of the doctor and better understand information that the doctor gives them. The students can help the family with the management plan agreed in the consultation, for example with lifestyle changes. Some families have even reported that the students have acted as role models to their own children and encouraged them to further their studies.

Limitations of PuPUK

Since its first inception, the faculty members were aware of the potential limitations of this programme and made their utmost effort to minimize those foreseeable difficulties. However, the faculty would like to admit that some of the limitations still exist in this programme. The following problems have been recognised since the implementation of the programme:

- **Uniformity of learning experiences**: Since the composition, background characteristics, behaviour and health status of foster families participating in this programme cannot be identical to each other, the students exposed to different families will face different learning experiences. The faculty tried to minimize this variation by creating opportunities for interchange of experiences through group discussions and presentations of own experiences under the guidance of supervisors.

- **Mismatch between the programme objectives and the needs of the families**: Although the programme only selects families who have given informed consent for inclusion in the puPUK process, some of the families were not well versed with the objectives and had very high expectations, for example that the students would be able to prescribe them medication. The faculty tried its best to improve the understanding of those families and made additional effort to meet some of the needs of PuPUK foster families. The evolvement of a community clinic at the Rural Medical Education Centre in Sikuati area is one of the examples of faculty's attempt to fulfill the need of the participating families.

- **Potential Community fatigue**: Based upon previous experiences in conducting community based projects, the faculty anticipated that there would be a phase in which the community lost its interest and enthusiasm. However, overwhelming community participation in the activities associated with this programme indicate that the phase of community fatigue has not arrived yet. After 8 years of running this programme, there are still more families that want to take part, than can be accommodated each year. The faculty had considered expanding the programme area to different districts as a contingency plan in case of community fatigue.

Conclusion and future prospects

The effectiveness of the PuPUK programme has been evaluated by the faculty and it was regarded as having a high impact on students, foster families and community. The University sees this programme as one of its most sustainable community engagements. Although the conceptualization of PuPUK was based upon the unmet needs of poverty stricken, underprivileged rural communities with limited access, the experience gained by the faculty through its implementation suggested that it could also be applied in urban communities. Sabah is facing rapid urbanization and previously rural families now have to face the challenge of having to adapt to urban culture. During that transformation phase, this programme could offer assistance to the families, while the medical students will get the golden opportunity of learning the process of socio-behavioural change and its influence on health through their foster families.

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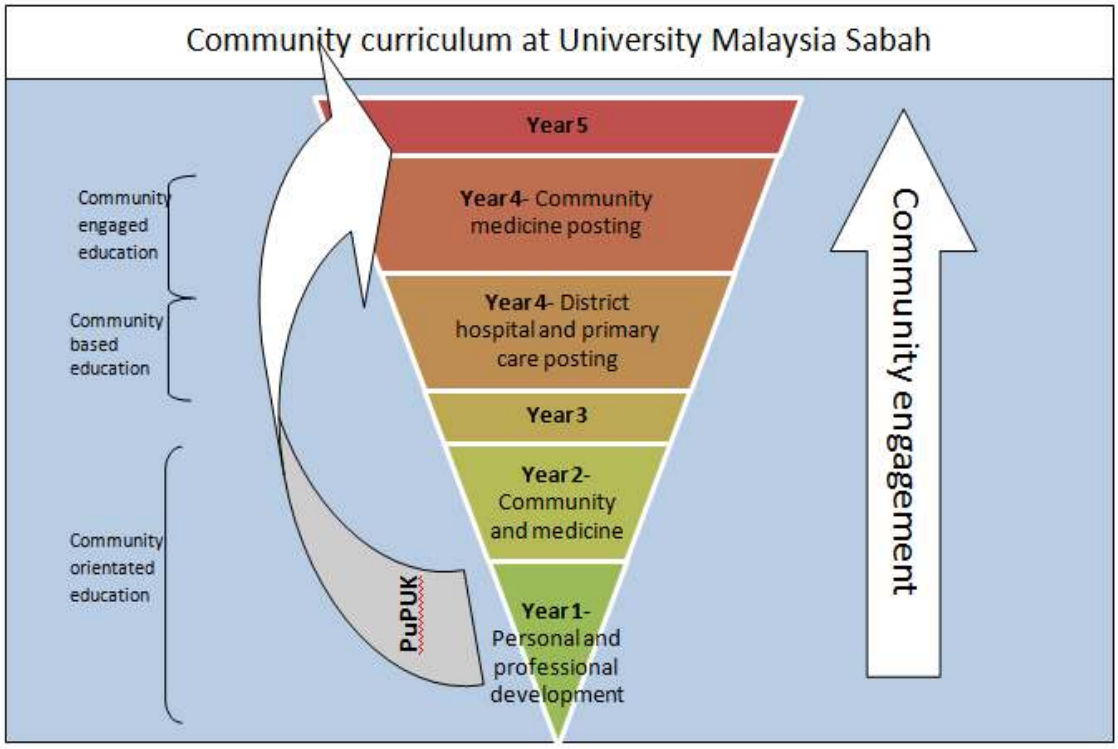

Figure 1: Community Curriculum at USM