

**GRADUATE HEALTH ASSISTANTS' PERCEPTIONS
OF THEIR PREPAREDNESS FOR PRACTICE IN
BHUTAN**

Mr.Chencho Dorjee

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ของประเทศภูฏาน



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Thesis Advisor Assistant Professor Nantana Sirisup, M.D.

Thesis Co-advisor Professor Anan Srikiatkachorn, M.D., M.Sc.

Accepted by the Faculty of Medicine, Chulalongkorn University in Partial
Fulfillment of the Requirements for the Master 's Degree

..... Dean of Faculty of Medicine
(Professor Pirom Kamol-ratanakul, M.D., M.Sc.)

THESIS COMMITTEE

..... Chairman
(Associate Professor Kitpramuk Tantayaporn, M.D., M.Ed.)

..... Thesis Advisor
(Assistant Professor Nantana Sirisup, M.D.)

..... Thesis Co-advisor
(Professor Anan Srikiatkachorn, M.D., M.Sc.)

..... Member
(Assistant Professor Somrat Lertmaharit, M.Sc.)

..... Member
(Associate Professor Waraporn Eoaskoon, Ph.D.)

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ระเบียบวิธีวิจัย: สำรวจความเห็นของเจ้าหน้าที่สุขภาพที่สำเร็จการศึกษาระหว่างปี 1999 ถึง 2003 จำนวนทั้งสิ้น 150 คน และผู้บังคับบัญชาจำนวน 50 คน โดยใช้แบบสอบถามชนิดตอบด้วยตนเอง ซึ่งสอบถามความเห็นเกี่ยวกับภาระงานที่เจ้าหน้าที่สุขภาพพึงปฏิบัติจำนวน 63 ภาระงาน ประกอบด้วยความเห็นด้านความสำคัญ ความเพียงพอในการอบรม และความพร้อมในการปฏิบัติงานของภาระงานนั้นๆ และใช้เกณฑ์ร้อยละ 70 ในการจำแนก

ผลการศึกษา: อัตราการตอบกลับในกลุ่มผู้สำเร็จการศึกษาเท่ากับร้อยละ 97 (จำนวน 138 คน) และในกลุ่มผู้บังคับบัญชาเท่ากับร้อยละ 100 (จำนวน 50 คน) อายุเฉลี่ยของกลุ่มผู้สำเร็จการศึกษาเท่ากับ 25.31 ปี และเป็นเพศหญิงร้อยละ 53

ผู้สำเร็จการศึกษาและผู้บังคับบัญชาทุกคนเห็นว่าทุกภาระงานมีความสำคัญ มากกว่าร้อยละ 70 ของผู้สำเร็จการศึกษาเห็นว่าตนไม่ได้รับการเตรียมตัวอย่างเหมาะสมในการปฏิบัติภาระงานจำนวน 40 ภาระงาน ร้อยละ 70 ของผู้บังคับบัญชาเห็นว่าผู้สำเร็จการศึกษามีความพร้อมในภาระงานเพียง 13 ภาระงาน จากจำนวนทั้งสิ้น 63 ภาระงาน จุดอ่อนที่สำคัญในการฝึกอบรม คือ ระยะเวลาที่สั้นเกินไป ขาดประสบการณ์ในการฝึกปฏิบัติจริง และขาดการให้ความปรึกษาอย่างถูกต้องจากผู้สอน

สรุป: ผู้สำเร็จการศึกษาเห็นว่าตนได้รับการอบรมจนมีความพร้อมในการปฏิบัติภาระงานส่วนใหญ่ ในขณะที่ผู้บังคับบัญชาเห็นว่าผู้สำเร็จการศึกษาขาดความพร้อมในด้านต่างๆจำนวนมาก ผลการศึกษานี้ว่าเนื้อหาที่จัดการเรียนการสอนใน Royal Institute of Health Science มีความสอดคล้องเหมาะสม แต่ยังไม่สามารถเตรียมผู้เรียนให้สามารถปฏิบัติงานในด้านต่างๆที่เกี่ยวข้องกับการให้บริการสุขภาพระดับมูลฐานได้อย่างเหมาะสม กระบวนการที่สามารถใช้พัฒนาปรับปรุงได้แก่ การเพิ่มระยะเวลาการฝึกอบรม การจัดโปรแกรมการฝึกงาน และพัฒนารูปแบบการให้คำปรึกษาแก่ผู้เรียน โดยเฉพาะอย่างยิ่งระหว่างการฝึกงานในสถานการณ์จริง

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สาขาวิชา การพัฒนาสุขภาพ
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ลายมือชื่อนิสิิต
ลายมือชื่ออาจารย์ที่ปรึกษา
ลายมือชื่ออาจารย์ที่ปรึกษาร่วม

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Objectives:

1. To determine graduates' perceptions of their preparedness for practice.
2. To determine supervisors expectations of what the graduates are able to do.
3. To identify strengths and weaknesses in other aspects of the training program.

Study design: A Cross-sectional Descriptive study

Setting: Health centers across Bhutan.

Research methodology: 140 health assistant graduates from 1999 to 2003 and their 50 supervisors were surveyed using a self completion questionnaire. They were asked to rate their perceptions of the importance, adequacy of training and preparedness for practice in 63 tasks under eleven key competency areas. An arbitrary criterion of 70% was used to determine importance, adequacy and preparedness in a task.

Results: Response rate for graduates was 97% (138) and 100% for supervisors. Mean age of graduates was 25.31 years and 53% were females. All graduates and supervisors felt all tasks were important. More than 70% of graduates felt unprepared in 40 of 63 tasks. 30% but more than 70% of supervisors felt graduates were prepared in only 13 of the 63 tasks. More males felt prepared than female graduates. There was no definite trend over the years. Areas of inadequate preparation were identified by both groups. The greatest weakness was short duration of the training, inadequate practical experiences and poor supervision and guidance.

Conclusion: Graduates felt adequately prepared in most of the tasks but supervisors perceive that graduates are inadequately prepared in most areas. The truth maybe somewhere in between. It would be reasonable to assume that the HA training program at the Royal Institute of Health Sciences is relevant but does not adequately prepare its graduates for practice in their diverse roles as primary health care workers. Potential improvement strategies recommended are increasing the duration of training, introduce a program of internship, improve supervision of students during clinical or field work and focus on practical experiences and training in actual practice settings.

Department: Health Development

Student's signature.....

Field of study: Health Professions Education.....Advisor's signature.....

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ABBREVIATIONS

PHC	Primary Health Care
ORC	Out Reach Clinic
BHU	Basic Health Unit
RGOB	Royal Government of Bhutan
VHW	Village Health Worker
HA	Health Assistant
ANM	Auxiliary Nurse Midwife
BHW	Basic Health Worker
RIHS	Royal Institute of Health Sciences
WHO	World Health Organization
UNICEF	United Nations Children's Fund
DANIDA	Danish International Development Agency
DMO	District Medical Officer
DHSO	District Health Supervisory Officer



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CHAPTER 1

INTRODUCTION

Background and Rational of Study

1.1 Country Profile

The Kingdom of Bhutan is a small landlocked, Buddhist country, nestled in the eastern Himalayas between two Asian giants, China to the north and India to the west, south and east (1). The terrain is among the most rugged and mountainous in the world as most of the country lies along the Himalayan range. The land rises from about 100 meters in the south to more than 7500 meters above sea level in the north. This great range of altitudinal zones and varied climatic conditions makes it possible to have the most diverse flora and fauna. Bhutan has been marked as one of the ten global “hot spots” on Earth by the World Wildlife Fund (2). Thimphu is the capital city. The population is estimated at 734,340 thousand in the year 2003 (3). 79 percent of the people live in the rural areas in small scattered villages across the mountains and valleys. The rural population is largely an agrarian society practicing subsistence farming and rearing livestock.

The country is geographically divided into 4 regions- west, central, east and south and administratively in 20 dzongkhags or districts and 201 geogs or sub districts.



Figure 1.1 Bhutan and her neighbours (1).

1.2 Health Situation

Although the first modern hospital was opened only in 1961, tremendous improvements have been made in all spheres of Bhutanese lives since the launch of the first five-year plan in 1961. The achievements in the health sector have been commended and recognized within the regional and global health community. The elimination of iodine deficiency disorders in 2003, the control of leprosy, the Essential Drugs Program and Primary Health Care are some of the successes that Bhutan has achieved in just four decades of planned socioeconomic development. Bhutan attracted global attention when it became the first country in the world to officially ban the sale of tobacco and its products on 17th December 2004 (2).

Communicable diseases continue to dominate the morbidity burden with acute respiratory infections and diarrhoeal diseases topping the list. But non-communicable diseases such as hypertension, diabetes, road traffic accidents and other conditions related to changing lifestyles due to development and improving socioeconomic status are also on the rise. The number of people with HIV infection has also steadily increased from 2 in 1993 to 72 as of February 2005 (4).

1.3 Health Care Delivery System

Ever since Bhutan became signatory to the Alma Ata Declaration in 1978, Primary Health Care (PHC) approach has been adopted as the strategy for health care delivery. Today, 90% of the population has access to basic medical care as well as preventive and promotive services, delivered in an integrated manner through a network of 455 Outreach clinics (ORC), 166 Basic Health Units (BHU), 26 District, 2 Regional and one National Referral Hospitals (5).

There is no private medical system in Bhutan. Medical care is provided free of cost to all citizens to the extent of the Royal Government of Bhutan (RGOB) bearing the expenses for treatment outside the country for cases that cannot be managed within the country.

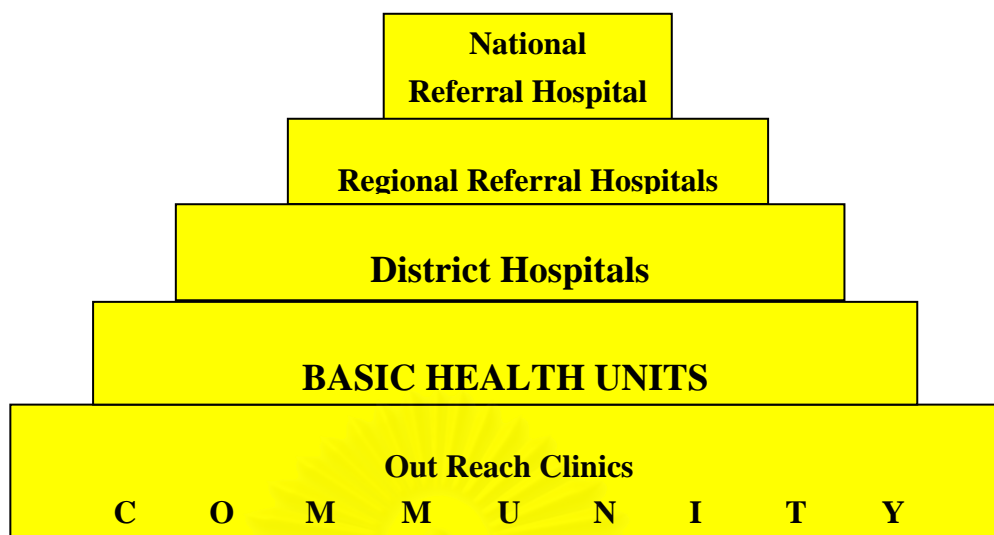


Figure 1.2 The health care delivery system in Bhutan

A well developed Indigenous medical system exists and is integrated with the allopathic system under the Department of Medical Services. People have a choice to avail either of the services under the same roof. People especially in the rural areas also extensively resort to religious rites and ceremonies when sick. Religion plays a very important role in the daily lives of the people and the religious body is actively involved in the promotion of health and well being of the people.

Being a mountainous country, accessibility and communication are a major obstacle. The BHU is the cornerstone of the health delivery system from where comprehensive basic health services comprising curative, preventive, promotive and rehabilitative services are provided to the community. To take the services even closer to the people, BHUs conduct regular out reach clinics where immunization, antenatal and simple curative, preventive and promotive services are provided. To involve the community actively in their own health needs, Village Health Workers (VHW) selected from the community by the people themselves assist the BHU staff and involve in preventive and promotive activities.

Initially, the BHU was run by a team of auxiliary health workers-a Health Assistant (HA), an Auxiliary Nurse midwife (ANM) and a Basic Health Worker (BHW) who had well defined roles. But in practice, their responsibilities overlapped so much, that it was sensible to train just one category of health worker. Since 1999, the same curriculum was followed for HA and ANM though the designation Health

Assistant was adopted for both categories only since 2003. BHW training has also been discontinued since 2000. Those already in the field are being upgraded to HAs with appropriate training in order to have a single category of primary health care worker uniformly throughout the country.

Each BHU caters to a population of 2000-5000 and accordingly the number of health workers are posted to that BHU. With development, many of the BHUs have become accessible by road and have modern amenities like electricity and telephones. But most BHUs are still days walk from a road head and without any of the modern amenities mentioned above.

District hospitals serve as referral centers for BHUs. They are 20 bedded with usually one doctor and basic laboratory and x-ray facilities. Bigger districts have 2 hospitals with more doctors. Some serve as the regional referral hospital with 60-100 beds with additional facilities and main specialties. Some of the district hospitals may be as far away as two days of long arduous journey by road across mountains and valleys from Thimphu where the National Referral Hospital is located.

The Jigme Dorji Wangchuck National Referral Hospital is a 200 bedded hospital with all the major specialties and facilities. Cases which cannot be managed here are referred outside the country usually to Kolkata or Vellore, India. It also serves as the clinical and practical training area for the students of Royal Institute of Health Sciences (RIHS).

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1.4 Demographic and Health Indicators

Table 1.1 Some selected Demographic and Health Indicators

Demography (3)			
Total population		734,340	
Males		370,805	
Females		363,535	
Percent rural		79	
Health Status Indicator (5)	1984	1994	2002
Infant Mortality rate	102.8	70.7	60.5
Under 5 Mortality rate	162.4	96.9	84.0
Maternal Mortality ratio	7.7	3.8	2.6
Population Growth rate	2.6	3.1	2.5
Life Expectancy at Birth	NA	66.1	66.1
Health care delivery			
Number of Doctors			122
Doctors per 10,000 population			1.7
Number of Nurses			436
Number of hospital beds			1,023
Ratio of nurses to hospital beds			1:2
Number of Health Assistants			173
Number of Hospitals			29
Number of Basic Health Units			166
Number of Outreach Clinics			455

1.5 The Royal Institute of Health Sciences (RIHS)

The Royal Institute of Health Sciences was established in 1974 with assistance from the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) (6).

1.5.1 Aims and Objectives

The main aim of the Institute is to prepare and develop human resource for health in different disciplines to provide comprehensive and effective health care to the people of Bhutan.

1.5.1.1 Long Term Objective

To develop adequate and appropriate technical health human resources for the provision of Primary Health Care services in Bhutan.

The Institute also strives for the all round development of each student by developing in them habits of discipline, virtue, dedication and loyalty, and to make them useful citizens of the country

1.5.1.2 Short Term Objectives

1. To train mid level health practitioners for the BHU.
2. To train Nurses for hospitals.
3. To train Hospital Technicians in various fields.
4. To provide continuing education for the trained health personnel.

Being the only training institute for mid level health workers in the country, RIHS has an important role in meeting the health human resource requirements of the country in this area. Doctors, graduate and postgraduate professionals still continue to be trained from abroad.

1.5.2 Training Programs

The Institute conducts the following pre-service training programs:

Table 1.2 Training programs at RIHS

Categories	Duration	Intake per year
Health Assistants	2 year	15
Pharmacy Technicians	-	4
Laboratory Technicians	-	10
Physiotherapy Technicians	-	4
Ophthalmic Technicians	-	4
Operation Theatre Technicians	-	4
X-ray Technicians	-	4
Dental Technicians	-	2
Dental Hygienists	-	2
ENT Assistants	-	4
Orthopedic Technicians	-	4
General Nurse Midwives	3 year	25

These categories of health workers form the backbone of the health service delivery and support system in the country.

In addition to the above regular pre-service training programs, the Institute also conducts up gradation courses and in service training (continuing education) from time to time. Since 2001, a 2-year Bachelor of Nursing Conversion course through distance mode got underway in collaboration with La Trobe University of Australia. 30 senior diploma nurse midwives in two batches have received their Bachelor's degree. But this is a one-time activity supported by WHO. With the establishment of the Royal University of Bhutan in June 2003 and the Institute coming under the umbrella of the University, it is envisaged that it will be upgraded into a College of Nursing and Health Sciences and would be able to offer Degree courses in some of the disciplines within the country.

There are about 180 students at any given time and 16 full time faculty members. The Jigme Dorji Wangchuck National Referral Hospital serves as the main clinical/practical training area for the Institute. Doctors, nurses and technologists of this hospital serve as part time faculty. For the community based learning, nearby

district hospitals and BHUs are used. The staffs of these facilities also serve as field facilitators/supervisors.

The Institute has adequate facilities and is a fully residential campus. The students are all sponsored by the Government and absorbed into the health workforce upon completion of their training. More than 1500 health workers have been trained from the Institute as of 2004.

1.5.3 Student Selection

Students are selected from those who have successfully passed the Bhutan Board of Examinations for Class 10 or 12. The selection is based entirely on the academic performance, fulfillment of certain criteria of the Institute (55% in Math and Science) and on the candidate's choice. A certain number of seats are reserved for female candidates depending on the nature of the work. Majority of the students opting for health workers' training come from a rural background.

1.6 The Health Assistant

1.6.1 History

Many countries in the region have found it difficult to produce sufficient numbers of medical practitioners to serve all communities. Even in countries with adequate medical workforces, it has proved difficult to retain doctors in rural areas. In some rural areas, populations are quite small and it is hard to justify posting doctors there. Yet all communities require access to care. Countries have therefore trained "mid-level" practitioners, to provide the full range of primary health care services, both preventive and curative, in rural and isolated communities.

Mid-level health practitioners or health workers are known by various names in different countries. In the South East Asia region they have been called as Sanitary Inspectors (Bangladesh); Health Worker (India); Community Health Worker (Maldives); Auxiliary Health Personnel (Nepal); Junior Health Worker (Thailand) and Health Assistant in Bhutan (7). Whatever their designation, they play a vital role in serving communities where there are no doctor due to insufficient production or difficulty in retaining them due to remote, hostile, non lucrative environment or because it is just not feasible to post a doctor there.

1.6.2 The Health Assistant Training Program

The Health Assistant Training was the first program to start in 1974 in what was then called The Health School, which was attached to the Thimphu General Hospital. It was initiated by the Government to meet the health manpower requirements to run the growing number of health facilities being constructed in remote areas around the country. As the need arose, other categories of health worker training program for nurses and technicians were added. The Institute was upgraded as the Royal Institute of Health Sciences in 1989.

The primary role of the HA at its inception was to provide basic medical care to the people in rural and remote areas. With the Alma Ata Declaration in 1978, the Primary Health Care approach had been adopted as a strategy to provide comprehensive health care to the people and covered all aspects of curative, preventive, promotive and rehabilitative services. Thus the role of the HA also transformed from provision of simple care to additional responsibilities of preventive and promotive activities, community mobilization besides leading the primary health care team.

1.6.3 Job responsibilities

The prospectus of the Institute outlines the job responsibilities of the Health Assistant as follows (6):

The HA is the team leader of the Basic Health Unit and is responsible to the District Health Supervisory Officer (DHSO) for providing health services in the BHU area.

The HA will:

1. Prepare work program for himself and his team members
2. Maintain the BHU facilities and infrastructure
3. Provide basic medical care to the community
4. Manage store efficiently
5. Plan and implement public health activities in a decentralized manner
6. Supervise and monitor the work of ANM and BHW
7. Ensure active community participation in all health activities

8. Participate in the training of village health workers
9. Keep DHSO informed of any problems
10. Maintain records of all health activities
11. Submit reports in time as required
12. Organize and conduct Maternal and Child clinics
13. Carry out home visits
14. Conduct deliveries
15. Promote healthy living through health education and advise mothers on nutrition, hygiene and sanitation.

1.7 Rationale of the study

The WHO slogan “Health for All by the Year 2000” may have come and gone but it remains a dream to many people and a vision to be fulfilled for many governments in the developing world including Bhutan. Primary Health Care will continue to be the approach used to deliver health care services to the people.

The Health Assistants are the frontline health workers delivering Primary Health Care services to nearly 80% of the population- often alone, in remote areas and under difficult circumstances. The quality of care they provide, the satisfaction of the clients they serve, the attitude and motivation they need to sustain their interest to serve with competence and commitment and continue learning all depends on the adequacy and relevance of the initial training they received in the RIHS.

Since the start of the program in 1974, the basic curriculum just expanded over the years by incorporating any changes in the health policies and activities. The first formal revision was carried out only in 1989-90. Two short-term consultants fielded in with support of the WHO and inputs from various national counterparts revised the curriculum again in 1996 and completed it in 1998.

The revised curriculum is stated to be culturally sensitive and technically appropriate in that they reflected the health and social issues of the country. The main contents consisted of the major health problems in Bhutan. The teaching and learning activities were to be more student-centered with students playing active role in the learning process (8).

But concerns have been raised about the quality of training and the competence of the graduates.

Only 3 studies are available that look at some aspects of the training in the RIHS. As part of the Human Resource Development Project Support to the country, the Danish International Development Agency (DANIDA) carried out an impact evaluation of the Institute in February 2000. While the major focus of the study was on the impact, the study also found that the curriculum had major discrepancies between the aims, contents and observed job profiles, that the curriculum was loaded with factual information and there was a lack of supervision in the clinical areas (9). The other two studies looked at the functions, work volume, training needs assessment and continuing education of the health workers (10, 11).

Five years have passed since the revised curriculum had been implemented. It is an opportune time to see how far we have come, and where we might want to be in view of the present and future health problems, present and future functions of this category of health workers, changing health needs, expectations and demands of the people, dramatically changing demographic and socio-economic situations, changes and advances in the field of health and medical care, information technology and evidences in literature of many innovative approaches in health professions education.

Curriculum development is a dynamic interactive process. It needs to be reviewed and revised regularly to make it more relevant and appropriate to the levels of development and changing health needs of the people. For a successful curriculum, curriculum development never really ends. Rather, the curriculum evolves, based upon evaluation results, changes in resources, changes in targeted learners, and changes in the material requiring mastery. A curriculum that does not keep pace with the needs of its learners, its faculty, its institution, its resources, patients, and society does a disservice to its constituents and is likely to deteriorate or die prematurely. One that does keep pace is likely to continually change and improve (12).

Evaluation is an essential part of the educational process focusing on local quality improvement. It provides evidence to how well students' learning objectives are being achieved and whether teaching standards are being maintained. Importantly, it enables the curriculum to evolve and constantly develop in response to the needs of

students, institutions and society. It contributes to the academic development of an institution and its members (13).

Health Assistants providing essential health services in many rural and isolated communities need to be well trained for this important role. The researcher proposed to evaluate the effectiveness of Health Assistant Training Program in terms of how adequately it prepares the health assistants for practice as Primary Health Care workers. It seeks answer to questions such as: Is it relevant-importance? Is the training effective-adequacy and preparedness? What are the strengths and weaknesses in the training program?

The answers would provide us with useful evidences to guide us in our strategic planning and action for curricular changes, improvement efforts in the current system, experimentation with innovative approaches in teaching and learning and identify faculty development needs.

The ultimate responsibility of the Institute is to provide a training or an education that will produce competent and commitment graduates who can meet the health needs of the people as well as their own professional needs.



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จุฬาลงกรณ์มหาวิทยาลัย

CHAPTER 2

REVIEW OF RELATED LITERATURE

2.1 Primary Health Care [PHC] - Its Importance

Primary Health Care originally meant the first care given to a patient in need, be it by a traditional healer or a medical person. In the 50s, it was thought of as an extension of basic medical curative services into rural areas provided by auxiliary health workers in health centers or dispensaries. In the 60s, some preventive aspects were added but an unspoken assumption during this time was that PHC was a substitution or second class medicine because it was not provided in a hospital or by a doctor.

In the 70s the whole meaning of PHC has changed. It was recognized that the 'medical care' model only treats people after they have become sick. It was uneconomical and inappropriate to the major health problems of the people in the developing countries. The "health care" model finds ways and means to prevent diseases and promote health in families and communities. Dramatic improvement of health status in Europe had been brought about by introduction of clean water supplies, sanitation and education. Statistics show that reduced incidence of infectious diseases and infant deaths occurred long before the discovery of drugs and vaccines.

The growing demand for improved health culminated in an idea initiated by Dr.H.Mahler, then Director General of the World Health Organization in 1975 which was later expressed as the famous slogan "Health for All by the Year 2000. This goal was endorsed by the 30th Session of the World Health Assembly in 1977. At the International Conference in Alma Ata in 1978, PHC was adopted as one of the approaches to reach the health for all goals. Clear principles, strategies and elements of PHC approach were drawn up.

PHC is not a package but a process or approach, which grows as our understanding of human development increases.

There have been questions raised about definitions and understanding of PHC. There is no single definition, and attempting to do so would be a mistake. However, it is clear that PHC is all of the following:

“Primary Health Care is essential health care based on practical, scientifically sound and socially acceptable methods and technology, made universally available to individuals and families in the community through their full participation and at a cost the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self determination” (14-16).

It forms an integral part of both the country’s health system, of which it is the central function and main focus, and of the overall social and economic development of the community. It is the first level of contact of individuals, the family and community with the national health system, bringing health as close as possible to where people live and work, and constitutes the first element of a continuing health care process.

It is a set of PRINCIPLES. The 1978 Declaration of Alma-Ata proposed that primary health care should:

1. “Reflect and evolve from the economic conditions and socio-cultural and political characteristics of the country and its communities, and be based on the application of the relevant results of social, biomedical and health services research and public health experience”
2. “Address the main health problems in the community, providing promotive, preventive, curative and rehabilitative services accordingly”
3. “Involve, in addition to the health sector, all related sectors and aspects of national and community development, in particular agriculture, animal husbandry, food, industry, education, housing, public works, communications and other sectors; and demands the coordinated efforts of all these sectors”
4. “Promote maximum community and individual self-reliance and participation in the planning, organization, operation and control of primary health care, making fullest use of local, national and other available resources; and to this end develop through appropriate education the ability of communities to participate”

5. “Be sustained by integrated, functional and mutually-supportive referral systems, leading to the progressive improvement of comprehensive health care for all, and giving priority to those most in need”
6. “Rely, at local and referral levels, on health workers, including physicians, nurses, midwives, auxiliaries and community workers as applicable, as well as traditional practitioners as needed, suitably trained socially and technically to work as a health team and to respond to the expressed health needs of the community.”

It has set of CORE ACTIVITIES, which are normally defined nationally or locally. The 1978 Declaration of Alma-Ata proposed that these should include at least:

1. Education concerning prevailing health problems and the methods of preventing and controlling them.
2. Promotion of food supply and proper nutrition.
3. An adequate supply of safe water and basic sanitation.
4. Maternal and child health care, including family planning.
5. Immunization against the major infectious diseases.
6. Prevention and control of locally endemic diseases.
7. Appropriate treatment of common diseases and injuries.
8. Provision of essential drugs.



Figure 2.1 The Components of Primary Health Care (14).

It has a set of STRATEGIES which the Declaration proposed as;

1. Prevention: the prevention of disease and the promotion of health are seen to be essential activities in PHC. It is more cost effective to prevent disease than to repeatedly cure it.
2. Intersectoral collaboration: PHC should be set in a context of integrated development to include housing, transport, water and sanitation, nutrition, agriculture, education, community development and women's health.
3. Appropriate Technology: the fullest use must be made of available resource and relevant technologies such as immunizations, oral rehydration solution, simple weighing scales and ventilated pit latrines. In this way, funds have been shifted towards promoting healthy communities rather than only providing sophisticated curative hospital services.

4. Community Involvement: by being involved individually and collectively, people are informed and develop the skills and abilities they need to manage their lives more effectively. This acknowledges the right of individuals to make choices and take action to improve their health. Community involvement must provide real opportunity for people to share in the decision making process.

While dramatic improvements in the health of people around the world have occurred in the last 28 years since the Alma Ata Declaration, new challenges have emerged.

2.1.1 Changing patterns of disease

The war against communicable diseases has not been won – but old enemies such as TB and malaria are gaining some ground, new diseases such as Severe Acute Respiratory Syndrome (SARS), Avian Flu bring new challenges, and HIV/AIDS is having a devastating effect in many countries.

The December 26th 2004 earthquake triggered Tsunami in the Indian Ocean region has not only caused extensive damage, destruction and death in the countries affected but also left in its wake indelible memories around the world of the worst catastrophe to hit mankind in recent history. Post disaster health consequences such as mental trauma and potential epidemic outbreaks are a reality and calls upon the services of multi specialty, multi sector involvement in both disaster management and disaster preparedness.

The World Health Report 2002 (17) shows, risk factors that lead to both communicable and non-communicable diseases are on the rise particularly in the poorest countries and communities. These risk factors are not yet under control, and will continue to cause avoidable deaths.

Life style related problems resulting in non-communicable diseases are reaching epidemic proportions around the world, in both wealthy and developing societies. This leaves many countries facing the double burden of communicable and non- communicable diseases.

Many of the most prevalent health problems, whether communicable or non-communicable, whether in physical or mental health, are chronic in nature. They

leave the individual (and the family) needing long-term support and care from their communities and the health system. These chronic conditions represent a growing proportion of the global burden of disease.

Injuries at home and in the workplace, street and domestic violence, road traffic accidents and armed conflicts are adding significantly to the global burden of disease, and are expected to do so increasingly in the future.

As progress is made with providing child and maternal care, and infant mortality rates improve, more children with serious disabilities are surviving and need lifelong care.

2.1.2 Changing demographics

With improvement in health care, life expectancy is increasing and the population of older people is increasing which will place increasing demands on the health and social care systems.

2.1.3 Social and economic change

The ways in which the world is changing, in social and economic terms, has major implications for population health, and for health systems. In many regions, the processes of industrialization and urbanization are proceeding at remarkable speed. Profound economic and social changes are happening in a decade, which in the early industrialized world took a century.

Traditional community and family values and support systems are eroded. This has particular implications for chronic care, where the needs of the individual are best met by a combination of family, community and health system support. These changes also have a largely negative effect on lifestyle. The habits of tobacco use, alcohol and drug abuse, poor diet and insufficient exercise seem best learnt in deprived urban communities, and sow all the seeds of the non-communicable disease epidemic.

The speed of industrialization and urbanization can leave health systems, and especially primary health care, struggling to adapt infrastructures and capacity to meet new needs.

Globalization of the world economy, and the development of open markets, has an equally dramatic impact on health and health systems.

2.2 Implications on PHC

Despite the many changes that have taken place, countries still view PHC as a policy cornerstone, and there is a general move towards PHC led health care systems. The Commission on Macroeconomics and Health (18) argues that the most effective interventions can be delivered through health centers and similar facilities, and through outreach, which they collectively describe as ‘close to client’ (CTC) systems. This is an obvious endorsement of both the principles and the best practices of PHC.

In developed and middle income countries with health care networks, which have largely resolved problems of access, PHC is mainly seen today as a level of care.

“Most of the principles, goals and objectives in the New Zealand Health Strategy will only be achieved through a strong primary healthcare system” (18).

In low resource countries where there are still significant access challenges, the PHC concept which still prevails is the perception as a system-wide strategy for development. In this latter context, PHC is considered synonymous to health for all (HFA). It is clear that PHC continues to be a fundamental component of health policy, and of health systems, in most of the world.

“To strengthen the primary health care approach in delivery of health care” is one objective of the 8th Malaysian Health Plan (2001-2005) (18).

For Bhutan, PHC will continue to be the main strategy for meeting the health care needs of its people. In the Ninth Plan Document (2002-2007) it is stated that

“The country has committed to establish a relevant and cost effective health care delivery system based on Primary Health Care approach that effectively delivers health care services to all people” (19).

Health personnel are fundamentally instruments for providing health care and education of health personnel is one of the tools available for expanding and improving health care coverage and thereby improving the health status of the people (20).

Therefore, training of Health Assistants and their role will continue to be important if not vital. For this their training needs to be relevant, of high quality and effective.

2.3 Relevance and Effectiveness

The main aim of the health assistant training program in Bhutan is to produce health assistants who are committed and competent to meet the health care needs of the people they serve.

There is a growing concern to improve the efficiency, effectiveness and most importantly, the relevance of health manpower education.

Education has a social purpose. It should aim to serve the health needs of society by producing health workers who possess appropriate competencies and by ensuring that graduates are able to practice these competencies in their future work environment (21).

Educational programs should be designed to meet this fundamental and universal challenge, namely to train health personnel able and willing to provide comprehensive health care, that care which is epitomized in the main social target of governments, international organizations and the whole world community-the attainment by all people of the world a level of health that will permit them to lead a socially and economically productive life, in short “Health For All”

The development of health personnel able and willing to serve the community by providing health care, promoting health, preventing disease and caring for those in need is a major and formidable task of educators. It is they who have the responsibility of ensuring that training programs are relevant to the present and future community requirements as well as to the characteristics of learners, and that the programs are effective and efficient in maximizing the potential of each student to acquire the competencies and attitude needed to carry out his or her tasks as a member of a health team (22).

There is often a discrepancy between what the curriculum teaches and the functional requirements of the tasks that the health workers do. Trainings often take place in urban areas, in hospitals with sophisticated equipment and range of diseases

that are rarely seen in the community. Thus trainings take place in isolation from the realities and the community that the graduates are expected to serve.

The most important quality in an educational program is its **relevance**. Relevance is the degree of conformity that exists between training programs on one hand and the population's health needs and resources on the other. Training programs for health workers must enable the graduates to cope effectively with problems they will encounter in the context of their work (23).

The relevance or appropriateness of educational programs has been questioned. It has been argued that there is often a mismatch between what is expected of the young graduate and the competencies gained in the training program.

It is the health care needs of the community that should provide the principal directional signals in building a relevant curriculum. In determining the relevance, the curriculum planners must first examine carefully and thoughtfully the conditions that graduates must face and arrange an educational program that prepares them for that role.

The form of teaching has remained unchanged for centuries. Educational institutes have wrapped themselves in its privileges and remained deaf to the cry from without. The needs of the society, the practical side of the matter have been left to chance whereas things have been changing more rapidly than ever. No educational system can be effective unless its purposes are clearly defined. Health workers must be trained specifically for the tasks they will have to perform taking into account the circumstances under which they will work. Defining the tasks of health workers to be trained is of crucial importance and forms the very basis of the educational objectives of training institutes (23).

Primary health care is the cornerstone of the country's policy and the elements of PHC form the basis of the tasks of the health assistant. The prospectus of the Institute defines the job description of the health assistants in Bhutan.

A study done in 2001 assessed the functions, work volume and training needs of health workers in Bhutan. It provides a list of activities done by the HA at the BHU in order of importance (10).

An Impact evaluation report of the Institute done in 2000 stated that there were still major revisions needed especially to link training to actual future job

conditions. The curriculum was overloaded with theory. District hospitals and BHUs were underutilized as training sites and that there was too little skill practice in key areas such as midwifery, therapeutic management, community work and IEC (9).

Primary health care is practical work. It is what health workers can do in his daily life to promote the health of his community that is important rather than how much he knows. It is important to concentrate training aspects on the performance of students-what they can do and how well they can do. This way they will be effective in their work and will provide quality health care to the people (14).

To provide an effective and relevant training, there is need for a curriculum, which is planned and developed keeping in mind the needs of the community and what the graduates or the products of the course should be able to or expected to do in order to fulfill these needs.

2.4 Curriculum

2.4.1 Definitions

A curriculum is many things to different people. Generally it is regarded as a program of instruction for an educational institution. To students, curriculum is usually an array of required courses that must be taken in order to graduate. To teachers, curriculum may be a sequence of “packages of knowledge” to be taught in certain ways at certain times by subject specialists. To administrators, curriculum is a way of organizing and departmentalizing a school into manageable administrative units. To society, curriculum often represents a time continuum of “school activities” that have been designed to prepare students for future roles in the community (24).

Contemporary definitions of curriculum vary according to the context, authors’ personal experiences and philosophy.

Oliva defined the curriculum as a plan or program for all of the experiences which the learner encounters under the direction of the school [organization or institution]. In practice, the curriculum consists of a number of plans, in a written form and of varying scope, which delineate the desired learning experiences. The

curriculum, therefore, may be a unit, a course, a sequence of courses, and the school's [organization or institution] entire program of studies - and may take place outside of the classroom or school (25).

Burrell defines curriculum as a whole set of influences and events, both planned and unforeseen, which impinge upon students during their period of education and which will, sooner or later, affect their ability to understand and achieve the aims of the course and, indeed, of the wider arena for which they are being educated (25).

Doll summarizes curriculum as the formal and informal content and processes by which the learners gain knowledge and understanding, develop skills and alter attitudes, appreciations and values favored by the school or university (25).

Coles and Grant describes a curriculum model which provides a useful way of conceptualizing the curriculum as three overlapping circles (26).

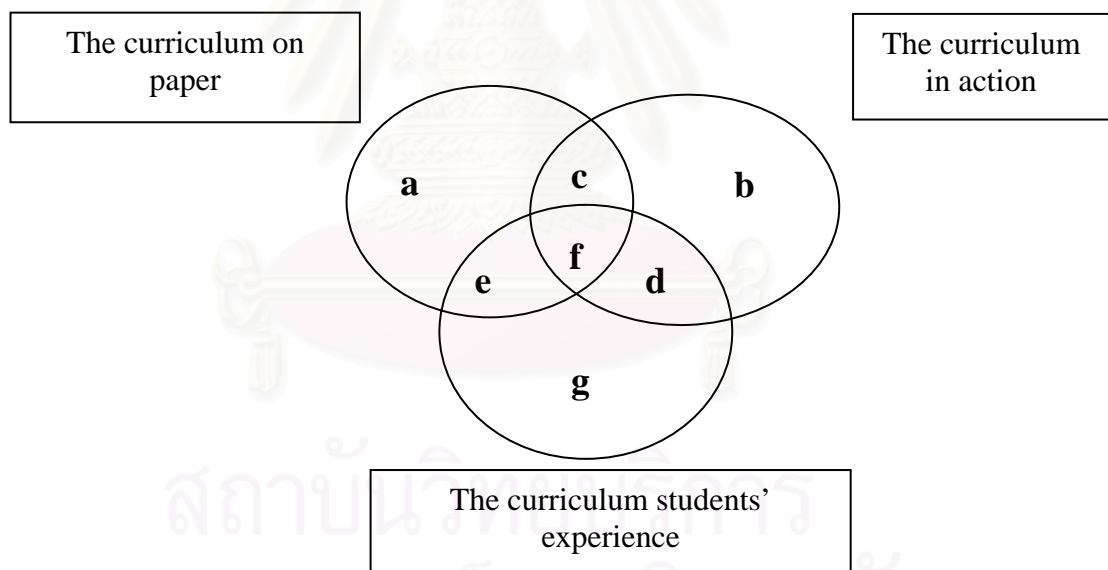


Figure 2.2 The Descriptive curriculum model

The three circles each represent:

1. The curriculum on paper: covers the vision, mission, philosophy, aims/objectives and the written documents, course descriptions and examination papers, what people said about it and the materials used in the course.

2. The curriculum in action: is a reflection of the curriculum on paper in practice whether it was intended or not.
3. The curriculum the students' experience: is what students learned, what they believed they should learn, how they studied and the outcomes of their study.

The overlap of these three circles resulted in seven areas:

Area (a) represented the aims, objectives and other components of the curriculum on paper, which never became actions and students did not experience these aspects. It might be due to staffs' misunderstanding of the philosophy behind the curriculum on paper or due to staff absence.

Area (b) represented those aspects of the curriculum, which appeared in action but were not in the curriculum on paper. This area might be the result of ignorance or misinterpretation of staff about the curriculum on paper. However, students did not experience this area of curriculum, either.

Area (c) comprised those aspects of the curriculum, which appeared in action and was part of the curriculum on paper. The problem was this area was taught intentionally but was not perceptible to the students.

Area (d) denoted components of the curriculum, which appeared in action and which students experienced. However, it was never intended to be part of the curriculum on paper.

Area (e) represents untaught intentions, which students encountered.

Area (f) is the most desirable and expected to be the largest area since it represented the intentions, which become actions and was experienced by students.

The last area (g) is those aspects which were neither intended nor became the curriculum in action but were perceived by students. This area might be called the "hidden curriculum"

The Hidden curriculum defined by Hirst is an "implicit or unconscious sequence of learning that goes on when pupils follow a consciously planned curriculum. Kelly further explained it as "those things which pupils learn at school because of the way in which the work of the school is planned and organized but

which are not in themselves overtly included in the planning or even in the consciousness of those responsible for the school arrangement (25).

A curriculum is about what should happen in a teaching program-about the intention of the teachers and about the way they make this happen (27).

It can be concluded that the curriculum is a plan of education set by a school, institute or university to develop the minds of the learners according to the objectives of the curriculum.

2.4.2 Types of Curriculum

McGaghie describes 3 types of curriculum models in the Health Profession Education (28).

1. Subject centered or the traditional curriculum based on subjects or disciplines.
2. Integrated curriculum based on body systems and inter-professional teaching.
3. Competency-based curriculum

Other innovative variants include;

- a) Problem Based Learning
- b) Out-come based curriculum based on the learning outcomes
- c) Community-based or community oriented curriculum.

2.4.3 Components of a curriculum

All curricula consist of 3 basic components:

1. The Objectives: what the students will be ABLE TO DO at the end of the training or course or lesson. The objectives should be stated in behavioral terms, be attainable and measurable, reflect the school's philosophy and purpose, student oriented, periodically reviewed and evaluated.

2. Learning methods: the learning experiences that will help the students TO DO what the objectives have stated. These include the teaching strategies that will be employed to help the students learn and the educational media that will help them to learn better.

3. Evaluation is to assess whether the students have mastered what was intended to be learned. Evaluation may be formative or summative.

Formative evaluation is done during the course to see the progress of the students towards achieving the objectives, to guide and motivate students and teachers.

Summative evaluation is done at the end of the course to certify the students as competent health workers and to see the effectiveness of the program as a whole.

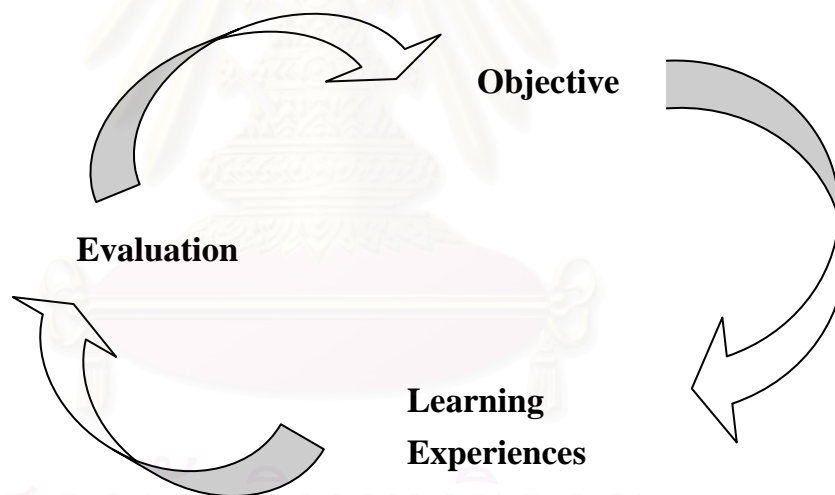


Figure 2.3 The Educational Cycle

2.5 Evaluation

Evaluation is the systematic process of collection and analyzing data in order to determine whether, and to what degree, objectives have been, or are being achieved or to make decisions (29).

Katz developed a guideline for evaluating a training program for health personnel (30). He described that evaluation may have several different goals.

Sometimes there are specific questions about the curriculum to be answered, for example:

- Are curricular objectives being met?
- Is the student experience what we intended it to be?
- Are the course activities optimally useful to students?
- What is the effect of this curriculum policy?

In other instances, the curriculum needs to be assessed in a general way for its worth or merit. A typical question associated with a general assessment of a curriculum's worth is "How satisfied are students and faculty with the curriculum?" Often both specific questions and a more general assessment may be relevant. Whatever the goals of the evaluation, it is important to fit the evaluation methods to the goals selected for a curriculum evaluation project.

The choice of evaluation methods flows from the goals of the evaluation process. Curriculum quality has traditionally been assessed by "countable" or quantitative, outcome measures such as course grades or scores on external exams. Students are also typically asked to rate different aspects of learning activities, yielding more numerical data. Quantitative approaches however may not adequately assess important features of educational programs such as new emphasis on life-long learning or the development of interpersonal skills. Simple comparison of numerical data alone does not provide information on all of the important aspects of an educational program. Ratings rarely provide the explanatory information necessary for understanding the relationships between curricular features and outcomes.

Qualitative measures, which generate words rather than countable elements, offer rich descriptions and explanations of phenomena to the curriculum evaluation process that complement quantitative information. Focus groups, interviews and open-ended written questions are some of the methods that are useful for addressing the "how" and "why" questions so important in evaluation.

2.5.1 Why evaluate teaching and courses?

This is a question frequently asked by persons engaged in training health personnel. But this question becomes relevant only if there is an affirmative answer to the fundamental question "should an evaluation be carried out"? The posing

of this question usually indicates that those engaged in training health manpower are concerned to ensure that what they are doing is effective, efficient and makes a significant contribution to the health care of the target population. Such judgments about effectiveness, efficiency and impact can only be made if there is a sound information base. Moreover, all persons involved in the program and not only those responsible for it, can gain from the very process of examining what is happening by identifying problems and constraints as well as achievements and by clarifying the issues.. Evaluation becomes the means of documenting what is going on and analyzing the problems and identifying alternatives for their solution. Thus curriculum evaluation plays an important role in substantive curriculum change (30).

It is generally believed that there are at least 3 reasons for evaluating a curriculum:

1. It may be a requirement of the Authority or the Institute aimed at improvements in student learning.
2. To document ones own performance.
3. To help improve the students' learning experience. Everything we do which impacts upon the students will influence their learning. Finding out how they experience their learning environment is the first step in improving that environment. There are many areas or components, which are valid matters for evaluating, refining and improving.

2.5.2 How do we evaluate an educational program?

There are a variety of alternatives for evaluating a curriculum or a training program, each with their potential strengths and weaknesses.

Quantitative data such as ratings of course or scores on external exams are useful for comparing courses or assessing whether standards have been met. Qualitative data such as students' comments about aspects of courses are useful for eliciting explanations of observed phenomena and describing relationships between curriculum features and outcomes.

Program evaluation: is a process of making informed judgments about the character and the quality of an educational program or parts thereof. The term "informed" is used to indicate that the data or information on which judgments are

based are reliable; that the method of gathering information and the sources and qualities of that information can sustain critical analysis. The use of the term “judgment” implies that the decisions made are arrived at by a process which involves the weighing of alternatives, the use of sound scales of comparison (criteria) and most important- consideration of all relevant data from as many sources as possible.

This concept differs from the traditional view of evaluation simply as an assessment or measurement of the extent to which specific objectives have been achieved, or how well the results of a program meet pre specified criteria. Evaluation is not just concerned with whether a program’s objectives are attained or not, but with how the program functions, in what context it operates, what problems or issues it encounters, what unintended outcomes it produces and what elements are facilitating or impeding its success. By attempting to understand what is happening (the character of the program) the evaluator may arrive at judgments about quality; he is not merely concerned with whether the program worked or not, but with understanding what the program really consists of, whom it reaches, how it functions and in what context. As with the action of a drug, it is not enough to ask the simple though important question-does it work? One needs to know the drug’s attributes such as speed and duration of action, nature and extent of effect, and frequency and seriousness of side effects. Only by understanding what really happens can one make the necessary judgments about value.

An important implication of this approach to evaluation is that the evaluator is not an inspector who assesses achievements and to whom those in a program justify their actions. Rather, the evaluator clarifies the issues, makes explicit what is implicit, assist in identifying what is happening and thereby provides feedback to all concerned. In many cases the evaluation can be conducted by persons engaged in the program as part of planning and implementation (30).

There is abundant literature on research in medical education but is generally dominated by assessment of trainee performance followed by trainee satisfaction and contains little information concerning the cost and products of medical education i.e. the provider performance and patient outcomes. Majority of evaluation focuses on assessment of individual teachers and course units but where it is sought to establish,

maintain and improve the overall teaching quality and student experience, appropriate focus should be the entire program of study. (31).

Student feedback plays a vital role in the review, development and evaluation of educational programs. The notion of evaluating learning from the perception of the student as the consumer and eventually the product of the educational system is consistent with the trend of accountability in publicly funded systems. In all levels of education there is an increased public awareness of the desirability for student evaluation of the quality of teaching and learning (32).

The degree of student satisfaction with their educational experience is an important dimension in the assessment of institutional effectiveness. All educators are working on ways to improve their educational provisions and increase the satisfaction of their students. Students' learning is strongly connected with their satisfaction with courses. Understanding students' satisfaction is fundamental to developing greater awareness of the educational process and quality (32-34).

Assessing the product is another well-known method. In the assessment of the quality of a product, follow up study of graduates provide a valuable source of information. They are a practical means of determining strengths and weakness of educational programs. They show that graduates often identify areas in which they think they received insufficient preparation. Recent graduates' perceptions of the adequacy of their training and their perceived competency are helpful in assessing the curricula and identifying areas of unpreparedness. By examining their status or seeking their opinion, one may get some idea of what has been the impact upon them of the institution and its program. Studies of this type enable an institution to evaluate various aspects of its program in light of actual results (35-49).

Evaluation of performances as perceived by graduates, faculty and supervisors or employers of graduates could assist in determining the effectiveness of an educational program. Further by examining input provided by all of these groups, a more complete picture of curriculum effectiveness can be obtained. By collaborating, educators and supervisors may identify differences in competency expectations that need to be addressed in the curriculum. The mutual influences between education and practice must be recognized (21). The education process must provide the skills and knowledge and the services the opportunity and time for development (42).

Most studies on competencies/preparedness for practice and performances deal with medical, dental, nursing and physical therapy graduates. These studies have used their respective council standards such as General Medical Council-UK, Accreditation Council for Graduate Medical Education-US, etc... The standard or key competency area used in this study is based on the elements of Primary Health Care. The characteristics of primary health care elaborated in the Alma Ata Declaration provide a valuable set of criteria by which to examine health services. By implication, since health manpower is an essential requirement for the effective functioning of such services, training programs can equally be submitted to careful scrutiny using these criteria to examine the extent to which they prepare their students for primary care roles (50). The tasks were derived from the job description of the Health Assistants, task analysis and training needs study and the curriculum. These were then validated by experts based on must know or must be able to do areas. The Core values or beliefs underlying this study are based on the premise that curriculum design and development is reiterative and dependent on continual evaluation and feedback from all stakeholders-students, faculty, graduates, supervisors/employers and ultimately patients.



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CHAPTER 3

RESEARCH METHODOLOGY

3.1 Research Questions

3.1.1 Primary Research Question

Does the Health Assistant training program at the Royal Institute of Health Sciences produce graduates prepared for practice as primary health care workers in Bhutan?

3.1.2 Secondary Research Questions

1. What are the graduates' perceptions of the importance, adequacy of their training and their preparedness/competence for practice in tasks related to Primary Health Care?
2. What are supervisors' perceptions of importance, adequacy and graduates' preparedness?
3. What do graduates and supervisors say about other aspects of the training program?

3.2 Research Objectives

3.2.1 General objective

To determine the relevance and effectiveness of the health assistant training program in Bhutan

3.2.2 Specific objectives

1. To determine graduates' perception of their preparedness for practice
2. To determine supervisors' expectations of what the graduates are able to do.
3. To identify strengths and weaknesses in other aspects of the training program.

3.3 Hypothesis (none)

3.4 Conceptual Framework

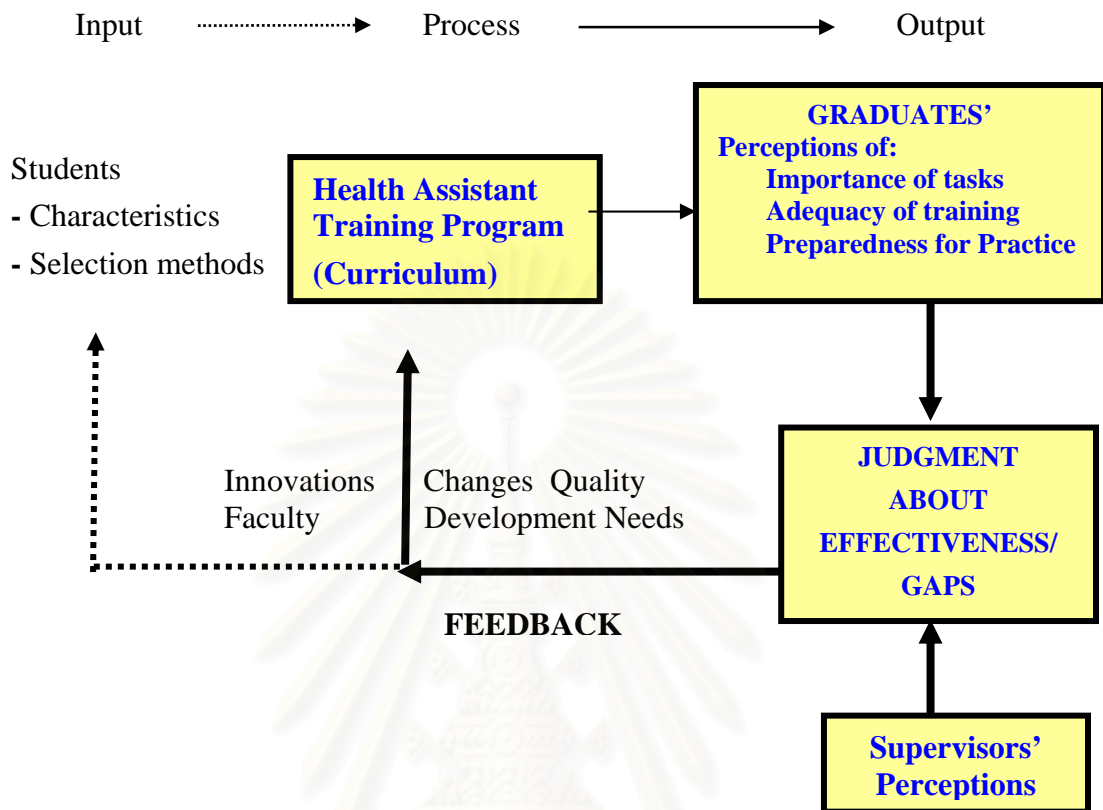


Figure 3.1 Conceptual framework

3.5 Key Words

Perceptions, Health Assistants, Preparedness for Practice, Bhutan

3.6 Operational Definitions

Perceptions: are defined as views, insights, or opinions regarding the importance of tasks, adequacy of training and preparedness for practice.

Health Assistants: are mid level health practitioners who have undergone two years of training at the Royal Institute of Health Sciences and practicing in a Basic Health Unit.

Preparedness for Practice: Readiness to perform PHC tasks competently / confidently as rated by 70% or more of the respondents.

3.7 Assumptions

The basic assumptions are that:

1. Graduates are capable of evaluating their own educational experiences and capable of doing so even after one or more years have passed.
2. Supervisors rate their perceptions of graduates as a collective group.
3. Respondents answer correctly and honestly.

3.8 Research Design

A Cross-sectional descriptive study

3.9 Research Methodology

3.9.1 Study Area

Health centers across Bhutan

3.9.2 Study population

1. Graduates from the year 1999 to 2003
2. Supervisors (District Medical Officers, District Health Supervisory Officers)

3.9.3 Sampling Scheme and Sample Size

As the entire population of graduates and their supervisors will be enrolled for the study, there is no need for a sampling scheme and calculation of sample size.

3.9.4 Outcome Measurement

1. Primary outcome will be the perceptions of Importance, Adequacy of Training and Preparedness for Practice measured in proportion who felt that the task was important, that the training was adequate and prepared.

- Graduates' self perceived level
 - Supervisors' perceived level
2. Secondary outcome measurement will be:
- Graduates' opinion about generic skills, training aspects teaching and learning and overall satisfaction
 - Supervisors' opinion about the training program and graduate attributes.
 - Comments and suggestions to open ended questions.

3.10 Research Instrument

The research instrument used is a self-administered questionnaire with rating scales, Likert type scale and open-ended questions.

3.10.1 Domains of Questionnaire

1. Tasks related to the Elements of Primary Health Care and its supporting strategies.
2. Training Program and Graduate Attributes.
3. Curriculum aspects and Teaching-Learning process.

3.10.2 Measurement Scale

1. 1-Not at all important.....5- Very Important
2. 1- Not adequate at all.....5- Very Adequate
3. 1-Very unprepared.....5- Very prepared
4. 5- Strongly agree.....1-Strongly Disagree
5. Number of citations

3.10.3 Development of questionnaire and content validity

The main questionnaire was developed based on the elements of Primary Health Care which is the core responsibility of the health assistants. A comprehensive list of tasks related to each element was drawn up after a thorough review of the job description, responsibilities, curriculum and training needs analysis

studies. The list was then submitted to three experts (3 Bhutanese doctors undergoing MPH course at the College of Public Health, Chulalongkorn University, who had more than 10 years experience in district health service) to select the most important tasks that the health assistants must know or be able to do. Two rounds of selection of items were done to bring down the number to 63 items. Representative sample of items from each domain were selected to form the Key Competency Tasks in the questionnaire. Items were selected based on scores of importance given by the three experts.

Validity concerns the extent to which an instrument measures what it is intended to measure. It places emphasis on the objectives of a test and the ability to make inferences from test scores or measurements. Therefore, validity addresses what we are able to do with test results. Claims for content validity are made by a panel of experts who review the instrument and determine if the questions satisfy the content domain (51).

The final questionnaire was formatted into 3 sections: [see Annex]

Section A: Demographic information, items with rating scales on satisfaction and open ended responses for strengths, weaknesses and suggestions

Section B: Key competency areas with rating scales- same for graduates and supervisors.

Section C: Likert type scale with items on graduate attributes and training program, teaching and learning aspects-separate one for graduates and supervisors

3.10.4 Pre-testing

Pre-testing was done in Bhutan on a sample of Health Assistants who just graduated in June 2004 (12 respondents) and the faculty members at the Institute (11 respondents). Minor changes were made based on the pre test and suggestions received to improve the questionnaire. It took 20-30 minutes to answer the questionnaire and most students responded to an end of survey question on understanding and difficulty as easy to understand and not difficult at all.

3.10.5 Reliability Test

The usefulness of measurement in any research and decision-making depends on the extent to which the researcher can rely on data as accurate and meaningful indicators of a behavior or attribute. At the heart of all measurement is reliability or the extent to which a measurement is consistent and free from error. Reliability can be conceptualized as dependability or predictability. A reliable instrument will be one that will perform with predictable consistency under set conditions. Reliability is fundamental to all aspects of research because without it we cannot have confidence in the data we collect nor can we draw rational conclusions from those data (51).

The data from the pretest was analyzed and tested for internal consistency by the Cronbach's coefficient alpha using SPSS for Windows ver.11. for the main questionnaire. Alpha on the average was more than 0.7. This showed that the questionnaire had acceptable reliability.

Table 3.1 Reliability of questionnaire

Item Code	Key Competency Area	No of items	Cronbach a	
			Stu	Fac
TRT	Treatment of common diseases and injuries	10	.8570	.7361
ED	Provision of Essential Drugs	4	.6368	.8634
FAN	Food and Nutrition	4	.8133	.9384
IM	Immunization	5	.9205	.8867
RH	Maternal Health and Family Planning (Reproductive Health)	11	.8882	.9457
RWS	Water Supply and Basic Sanitation	5	.8078	.8956
PRE	Prevention and Control of Endemic Diseases	5	.7587	.8443
HE	Health Education on Prevention and Promotion	5	.8739	.9181
ADM	Administration and Management	6	.9046	.9462
CP	Community Participation	4	.8875	.9507
ISC	Intersectoral collaboration	4	.8360	.9691

3.11 Data Collection

A list of all health assistants who joined the health department in the last five years was obtained from the Personnel Unit of the Ministry of Health with their current place of practice. This list was matched with the graduates list who passed out from the Institute from 1999-2003. Similarly, the names of the supervisors were obtained from the Personnel Unit.

The survey was conducted between June and October 2004. Due to the unreliable nature of the postal system and the difficult terrain, the strategy for the questionnaire distribution was changed. Wherever possible, the researcher visited the health center where a listed health worker was posted and delivered personally the questionnaire with a request to complete and send it to his supervisor immediately and not later than a week. Where it was not feasible, the questionnaires were dropped at the supervisor's office with a request to forward it to the concerned health worker or have him or her collect it during their monthly visit and return the filled form immediately and not later than a week. The supervisor collected all the forms from his area and sent them to the researcher not later than a month from the date of distribution. Reminders through telephone were sent when the forms were not received within the stipulated time and in some cases fresh forms were sent.

Graduates completed the form as it pertained to them and supervisors as it applied to the graduates as a collective group within their area of jurisdiction.

3.12 Data Analysis

SPSS/Windows ver.11 was used for quantitative analysis of the responses and Open-ended responses were tabulated manually.

Independent variable:	Scale	Statistics
Health Assistant Training Program		
Dependent Variables		
Importance	Nominal/Ordinal	Proportion/ M.SD
Adequacy	Nominal/Ordinal	Proportion/M.SD
Preparedness	Nominal/Ordinal	Proportion/M.SD

Satisfaction	Nominal/Ordinal	Proportion/M.SD
Opinions	Nominal/Ordinal	Proportion/M SD

Mean and standard deviations were derived from the raw data. The data was recoded by reducing the rating scales into 2 groups-1,2,3 and 4,5 and responses dichotomized as “Important / Not Important”, “Adequate / Not Adequate”, and “Prepared / not Prepared” accordingly. Only the Important, Adequate and Competent/Prepared responses were taken into consideration for the analysis. This would give a rather conservative outcome than an over inflated one if we were to use scores 3, 4 and 5 to define importance, adequacy and preparedness. The domain will be considered important, adequate or prepared only if 70% or more of the respondents perceived that it was important, adequate or prepared. To put it in another way, it means that at least one third or more (30%) thinks that the key competency tasks were not important or that the training was not adequate or that they felt unprepared in a task.

The criterion of 70% is arbitrary. While it would ideal that all our graduate and their supervisors feel that they are fully prepared, it would be unrealistic to expect so. Going for a lower criterion level would undermine the quality of our training and portray a false sense of well being. The health assistants are the frontline workers serving nearly 80% of the population and need to be well trained. Therefore, it is fairly reasonable to expect that things are going well if 70% or a little over two thirds of the respondents think that the tasks are important, training adequate and they are prepared.

The tasks were also ranked by importance and preparedness and Spearman’s rank correlation used to find any association between supervisors’ and graduates’ ranking.

Data are presented and interpreted by means of descriptive statistics aided by tables and graphs.

3.13 Ethical considerations

This was a descriptive study and involved no interventions that could possibly harm the subjects. However, the rights of the subjects were respected and they were given the option not to answer any part without fear of any dire consequences. No

names were required and strict confidentiality was maintained. The study was passed by the University Ethics Committee and also approved by the Ministry of Health, Royal Government of Bhutan

3.14 Scope of the study

The study involves all health assistants who graduated from the Royal Institute of Health Sciences from 1999-2003 and their supervisors posted in BHUs and District Hospitals across Bhutan. It covered their perceptions of importance, adequacy of training and their preparedness in key competency tasks derived from Primary Health Care activities. It also covered aspects of the training such as satisfaction, strengths, weaknesses, teaching and learning aspects and graduate attributes. The findings are useful in determining the relevance and effectiveness of the training and initiating changes and improvements measures.

3.15 Limitations

The major limitation in this study was that it was limited to respondents' self report of perceptions of preparedness through a survey questionnaire. The actual situation may be different. It does not evaluate the actual competency or the impact on the community as a means to judge the real effectiveness of the training.

The use 5 point scale produces a tendency to record the middle value where there was uncertainty in the mind of respondent. Perhaps 4 point scale may have been more suitable.

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CHAPTER 4

RESEARCH RESULTS

This study was conducted between June and October 2004. It covered respondents from all 29 hospitals and 87 of the 166 Basic Health Units across the country.

The number of students that graduated from the Royal Institute of Health Sciences and joined the Health Services from 1999-2003 was 140. Questionnaires were sent to all and completed forms were received from 138, giving a response rate of 97.9%.

The number of supervisors was 44 but 6 questionnaires were also sent to those who had been recently transferred from the district to the headquarters, giving a total of 50 supervisors with a 100% response rate.

The results are presented as follows:

1. Demographic data of subjects.
2. Perceptions of Importance, Adequacy of training and Preparedness for Practice.
3. Graduates' agreement with statements about the training.
4. Supervisors' agreement with statements about the training and graduate attributes.
5. Comments/suggestions.

4.1 Demographic data of subjects

Table 4.1 shows a profile of the age and sex, year of graduation, decision to join the institute, effect and satisfaction with the training and whether they would recommend the training to others.

The mean age of the graduates was 25.31 years (mode=24,26) and ranged from 21 to 31 years. 65 (47.1%) were males and 73 (52.9%) were females. There was an even distribution of the number of graduates passing out of the Institute each year. On the average, the Institute produced 27 HA graduates each year in the period under study.

Most (96.4%) had decided to join the Institute on their own choice with less than 4% citing family/ peer pressure or because there was no other options for them.

29% said that their training had a very strong effect on their ability to assume a responsible, professional role in society, while more than half (54%) said it had a strong effect. Only 17% said that the training had a moderate effect.

Three fourths of the graduates (75.4%) were satisfied with the total experience during their training while a further 14.5 % said that they were very satisfied. Only about 10% were somewhat or not satisfied at all with their total training experience.

86% of the graduates said they would recommend the training to their close friends or relatives. About 4% said no and the rest 10% were not sure.

Table 4.2 shows the supervisors' designation, number of years in service and years in the present place of posting.

There were 23 (46%) District Medical Officers and 27 (54%) District Health Supervisory Officers. The number of years in service ranged from 1-33 years for supervisors in general with a mean of 14.8 years and standard deviation of 10.01. 16 DMOs (69.6%) had less than 5 years of working experience while all the DHSOs had 10 or more years of working experience. 86 % [43] had been in the present place of work for only 1-3 year while 14% [7] had been in the present place for 4 or more years.

Table 4.1 Demographic profile of graduates and other attributes

	Number	Percent
Sex		
Male	65	47.1
Female	73	52.9
Age (years)		
21-25	76	55.1
25-30	100	42.8
>31	3	2.2
Mean=25.3, Mode=24,26	SD=2.428	Range=21-31
Year of Graduation		
1999	30	21.7
2000	28	20.3
2001	27	19.6
2002	27	19.6
2003	26	18.8
Decision to join RIHS		
On my own choice	133	96.4
Family pressure	1	0.7
Friends	3	2.2
No other choice	1	0.7
Effect of training on professional role		
Very strong	40	29.0
Strong	75	54.3
Moderate	23	16.7
Satisfaction with total training experience		
Very satisfied	20	14.5
Satisfied	104	75.4
Somewhat satisfied	13	9.4
Not satisfied at all	1	0.7
Would you recommend the training to others?		
Yes	119	86.2
No	5	3.6
Unsure	14	10.1

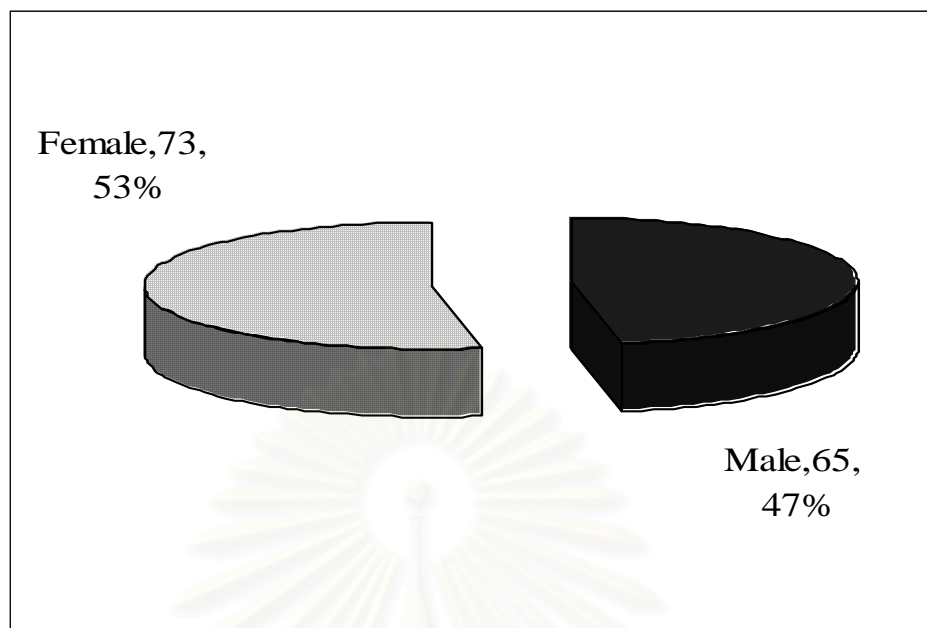


Figure 4.1 Gender distribution of graduates

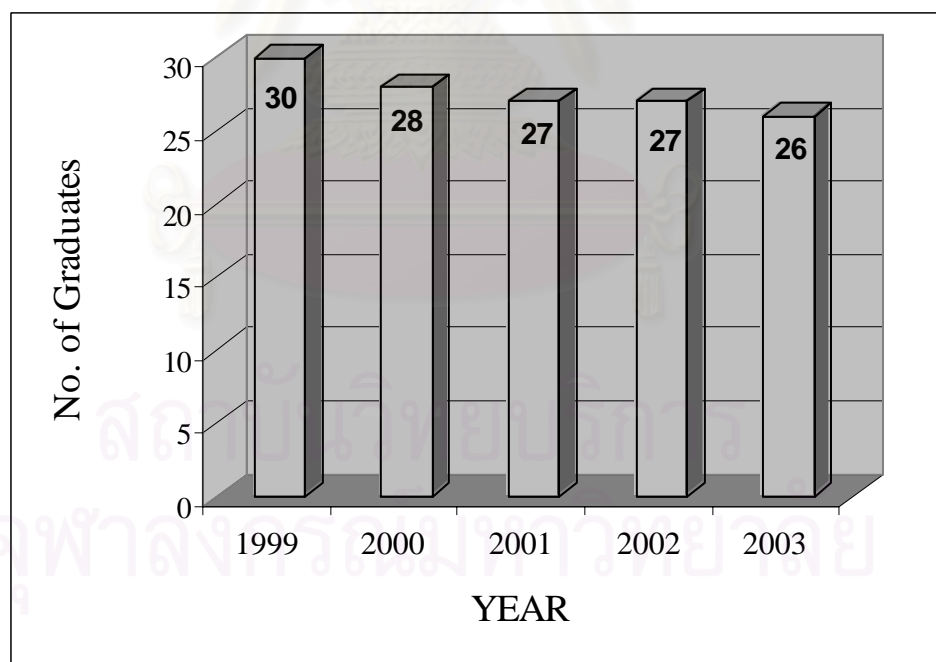


Figure 4.2 Number and Year of graduation

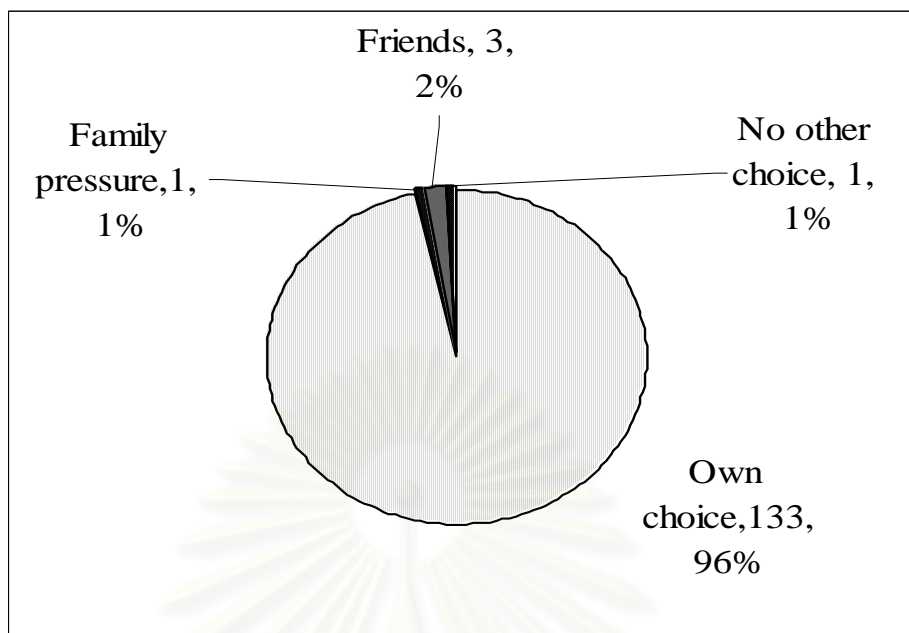


Figure 4.3 Decision to join the Institute

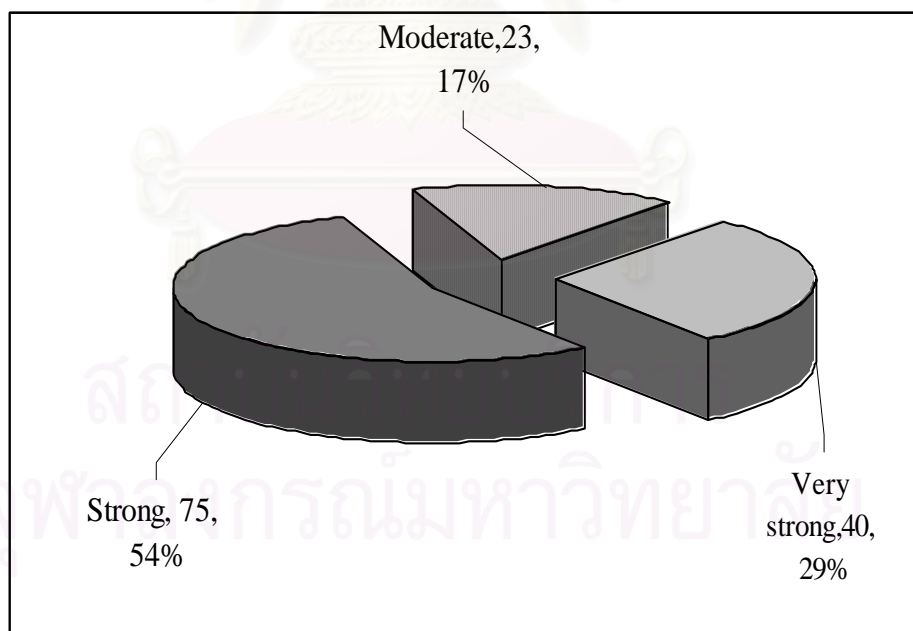


Figure 4.4 Effect of training on professional role

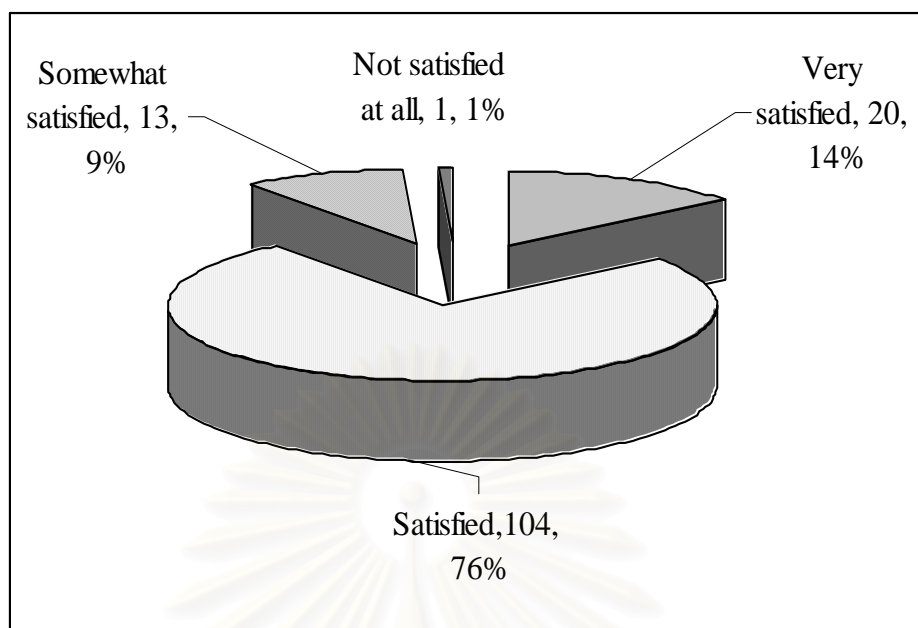


Figure 4.5 Satisfaction with total training experience

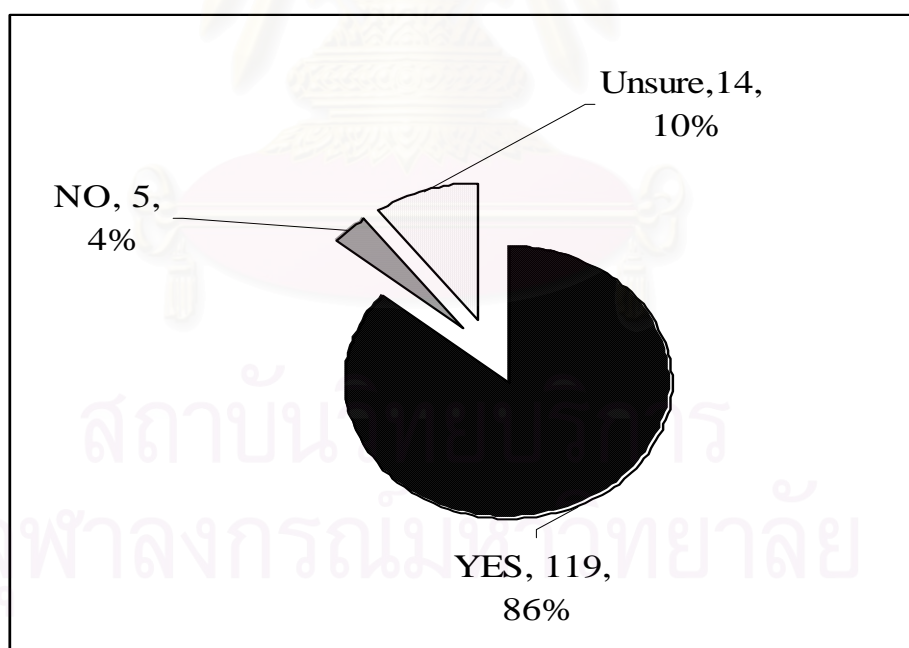


Figure 4.6 Would you recommend the training to others?

Table 4.2 Summary of supervisors' profile (n=50).

Designation	Number		Percent	
DMO	23		46.0	
DHSO	27		54.0	
Number of years in service	DMO	DHSO	n	%
1-4 years	16	0	16	32.0
5-9 years	1	0	1	2.0
10-14 years	3	3	6	12.0
More than 15 years	3	24	27	54.0
Total	23	27	50	100
Mean=14.80 SD=10.01 Range=1-33				
Number of years in the present place				
1-3 years	43		86.0	
4-5 years	3		6.0	
More than 6 years	4		8.0	
Total	50		100	
Mean=2.74 SD= 3.45 Range=1-24				

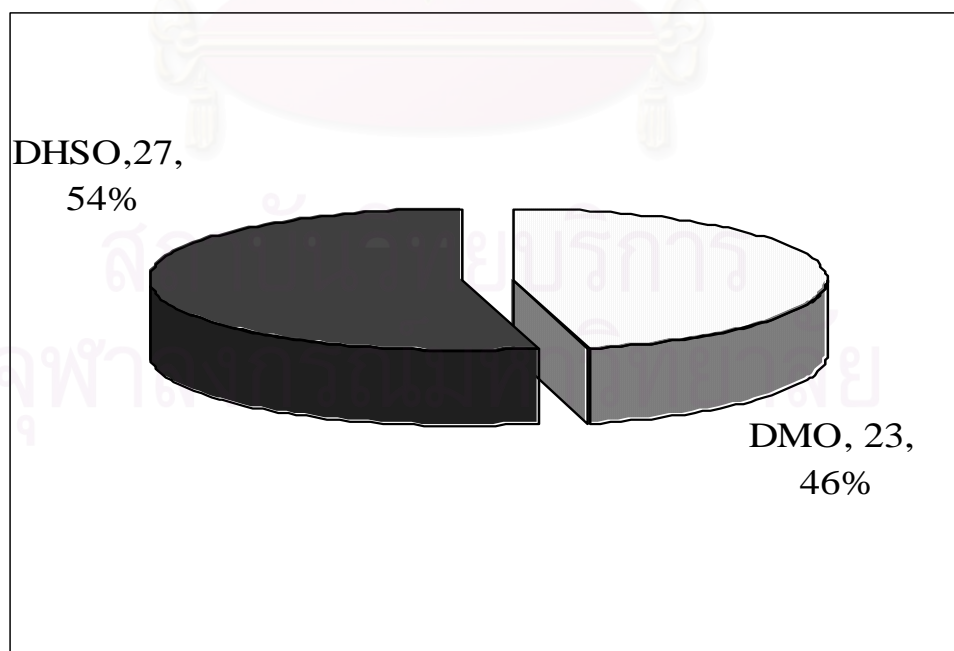


Figure 4.7 Supervisors by designation

4.2 Perceptions of Importance, Adequacy and Preparedness for Practice

The tasks were derived from the job description, curriculum and other documents and validated by a panel of three experts. The tasks were divided into eleven key competency areas based on the elements of Primary Health Care. The ratings are based on a rating scale ranging from 1 to 5 from least to most important, adequacy and preparedness. For analysis, high scores of 4 and 5 were taken to show the proportion that perceived the task as important, training as adequate and that they were prepared.

Table 4.3 shows the ratings of task by Importance, Adequacy of training and Preparedness as perceived by graduates in the eleven key competency areas. Table 4.4 gives the ratings of supervisors for the same.

4.2.1 Importance

As shown in the tables more than 90% of all graduates and supervisors agreed that all tasks in the key competency areas were important. However there were differences in the areas of importance between graduates and supervisors.

4.2.2 Adequacy and Preparedness

There is a wide difference in perceptions of adequacy of training and preparedness among both the graduates and supervisors.

Percentage of those who thought training was adequate ranged from low of 38% in 'Collect and send water sample for testing' to a high of 96% for 'Prepare ORS solution' for graduates and a low of 22% in 'Take a PAP smear' and 'Carry out Community Based Rehabilitation' to high of 100% in 'Conduct Immunization' among the supervisors.

In the perceptions of preparedness, graduates who thought they were prepared ranged from a low of 37% in 'Carry out Community Based Rehabilitation' to a high of 100% in 'Prepare ORS solution'. For supervisors, percent who thought graduates were prepared ranged from as low as 10% in 'Take a PAP smear' to a high of 92% in 'Conduct Immunization'.

As is expected, tasks which were rated low in adequacy were rated low in preparedness and high adequacy received high preparedness ratings.

Table 4.3 Graduates' Ratings of tasks in Key Competency Areas.

Key Competency Area	Percentage of Graduates who Perceived.....(n=138)		
	Tasks as being Important (score 4-5)	That the training was Adequate (score 4-5)	That they were Prepared (score 4-5)
<u>I. Treatment of common diseases and injuries</u>			
Take a relevant clinical history	100	70.3	75.4
Assess Vital signs (TPR,BP)	99.3	94.9	99.3
Look for pallor, jaundice, pedal oedema	99.3	85.5	96.4
Perform Haemoglobin estimation	94.2	69.6	81.9
Perform urine for Albumin and Sugar	91.3	85.5	95.7
Manage a case of Dysentery	98.6	86.2	93.5
Manage a child with Diarrhoea	100	89.9	87.7
Manage a child with Pneumonia	99.3	81.9	79.0
Manage a case of Anaphylactic Shock	96.4	50.0	43.5
Suture a simple cut injury	91.3	73.9	88.4
<u>II. Provision of Essential Drugs</u>			
Administer drugs by different routes	98.6	84.8	91.3
Calculate fluid required for a child with some dehydration	97.1	68.8	68.1
Prepare ORS solution	97.8	96.4	100
Maintain inventory and proper storage of drugs, vaccines and equipment	97.1	61.6	64.5
<u>III. Food and Nutrition</u>			
Use the Road to Health Card to monitor growth	100	94.9	97.1
Recognize the different grades of malnutrition	99.3	91.3	92.8
Manage common types of malnutrition	96.4	60.1	63.0
Demonstrate the preparation of a nutritious diet	92.0	40.6	44.9

Table 4.3 (continued)

Key Competency Area	Percentage of Graduates who Perceived.....(n=138)		
	Tasks as being Important (score 4-5)	That the training was Adequate (score 4-5)	That they were Prepared (score 4-5)
<u>IV. Immunization</u>			
Conduct an immunization session	99.3	94.2	95.7
Detect any contraindication to immunization	98.6	72.5	73.2
Manage adverse reactions to vaccine	97.1	<u>57.2</u>	<u>58.0</u>
Maintain the cold chain	98.6	79.0	84.8
Maintain aseptic precautions (sterilization)	100	88.4	92.0
<u>V. Maternal Health and Family Planning (Reproductive Health)</u>			
Detect abnormal presentations	99.3	<u>66.7</u>	71.7
Auscultate the fetal heart sound	97.8	92.0	95.7
Identify multiple pregnancy	97.1	<u>63.0</u>	<u>58.7</u>
Maintain and interpret a partograph	98.6	81.9	81.2
Deliver the placenta by controlled cord traction	98.6	81.2	88.4
Perineal lacerations-prevention and suture	97.1	<u>68.1</u>	71.7
Recognize post partum haemorrhage	97.8	76.8	78.3
Manage umbilical infections	100	81.2	89.9
Recognize signs and symptoms of puerperal sepsis	99.3	<u>66.7</u>	70.3
Give counseling to a couple wishing to adopt family planning	98.6	90.6	94.9
Take a PAP smear and send to the district hospital	92.8	<u>44.2</u>	<u>46.4</u>
<u>VI. Water Supply and Basic Sanitation</u>			
Assess community health problems related to water and sanitation	97.1	<u>67.4</u>	81.2
Assist community to identify and protect their water source	97.1	<u>69.6</u>	82.6

Table 4.3 (continued)

Key Competency Area	Percentage of Graduates who Perceived.....(n=138)		
	Tasks as being Important (score 4-5)	That the training was Adequate (score 4-5)	That they were Prepared (score 4-5)
Collect and Send water samples for testing	89.9	<u>38.4</u>	<u>40.6</u>
Investigate outbreak of water related diseases	97.8	<u>52.9</u>	<u>60.1</u>
Institute appropriate management and control measures in case of an outbreak	97.8	<u>47.8</u>	<u>48.6</u>
<u>VII. Prevention and Control of Endemic Diseases</u>			
Identify and refer suspected TB cases	100	84.1	89.1
Do salt analysis for iodine content	97.1	87.7	89.1
Carry out malaria control activities	97.1	<u>58</u>	<u>58.7</u>
Carry out community based rehabilitation activities	93.5	<u>40.6</u>	<u>37.0</u>
Recognize Mental Health problems in the community	91.3	<u>47.8</u>	<u>54.3</u>
<u>VIII. Health Education on Prevention and Promotion</u>			
Give health education on prevention of common diseases	98.6	91.3	94.2
Promotion of healthy life style activities	97.1	81.9	89.1
Give health education on HIV/AIDS and STIs	98.6	83.3	90.6
Give education of personal and environmental hygiene	97.8	92.8	94.9
Organize a health exhibition in the BHU	94.2	<u>61.6</u>	<u>61.6</u>
<u>A. Administration and Management</u>			
Plan and implement BHU activities	97.8	<u>60.9</u>	<u>65.9</u>
Conduct annual household survey	99.3	80.4	89.1
Analyze, Interpret, utilize and display the information	98.6	<u>63.8</u>	<u>68.1</u>
Maintain accurate records and send the reports to the DHSO regularly	98.6	72.5	80.4
Training and supervision of VHW	96.4	<u>49.3</u>	<u>58.7</u>
Supervision of BHU activities	97.8	<u>67.4</u>	73.9

Table 4.3 (continued)

Key Competency Area	Percentage of Graduates who Perceived.....(n=138)		
	Tasks as being Important (score 4-5)	That the training was Adequate (score 4-5)	That they were Prepared (score 4-5)
<u>B. Community Participation</u>			
Organize a village meeting on health issues	98.6	<u>61.6</u>	72.5
Implement model village activities	94.9	<u>55.8</u>	<u>68.8</u>
Involve the community in planning and implementing a water supply scheme	94.9	<u>48.6</u>	<u>54.3</u>
Get community support in the maintenance of the BHU	90.6	<u>54.3</u>	<u>58.7</u>
<u>C. Intersectoral collaboration</u>			
Plan health activities in the school	96.4	<u>66.7</u>	80.4
Talk to the agriculture extension worker	87.7	<u>58.0</u>	76.1
Getting the Forest Range Officer to approve timber for an ORC	79.7	<u>45.7</u>	<u>55.1</u>
Getting the District Engineer to make an estimate for a water supply scheme	87.0	<u>40.6</u>	<u>50.0</u>

Note: Bold underlined figures represent those with less than 70% ratings.

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Table 4.4 Supervisors' Ratings of tasks in Key Competency Areas.

Key Competency Area	Percentage of Supervisors who Perceived.....(n=50)		
	Tasks as being Important (score 4-5)	That the training was Adequate (score 4-5)	That graduates were Prepared (score 4-5)
<u>I. Treatment of common diseases and injuries</u>			
Take a relevant clinical history	96	<u>34</u>	<u>34</u>
Assess Vital signs (TPR,BP)	96	74	82
Look for pallor, jaundice, pedal oedema	90	80	72
Perform Haemoglobin estimation	88	<u>62</u>	<u>64</u>
Perform urine for Albumin and Sugar	94	<u>66</u>	<u>66</u>
Manage a case of Dysentery	94	70	72
Manage a child with Diarrhoea	92	<u>66</u>	<u>66</u>
Manage a child with Pneumonia	94	<u>62</u>	<u>56</u>
Manage a case of Anaphylactic Shock	88	<u>28</u>	<u>20</u>
Suture a simple cut injury	94	<u>66</u>	<u>64</u>
<u>II. Provision of Essential Drugs</u>			
Administer drugs by different routes	98	70	<u>56</u>
Calculate fluid required for a child with some dehydration	88	<u>26</u>	<u>16</u>
Prepare ORS solution	96	90	90
Maintain inventory and proper storage of drugs, vaccines and equipment	100	<u>50</u>	<u>44</u>

Table 4.4 (continued)

Key Competency Area	Percentage of Supervisors who Perceived.....(n=50)		
	Tasks as being Important (score 4-5)	That the training was Adequate (score 4-5)	That graduates were Prepared (score 4-5)
<u>III. Food and Nutrition</u>			
Use Road to Health Card to monitor growth	94	82	84
Recognize the different grades of malnutrition	94	72	<u>66</u>
Manage common types of malnutrition	88	<u>48</u>	<u>34</u>
Demonstrate the preparation of a nutritious diet	88	<u>40</u>	<u>26</u>
<u>IV. Immunization</u>			
Conduct an immunization session	100	100	92
Detect any contraindication to immunization	98	70	<u>60</u>
Manage adverse reactions to vaccine	98	<u>46</u>	<u>36</u>
Maintain the cold chain	98	78	<u>64</u>
Maintain aseptic precautions (sterilization)	100	76	72
<u>V. Maternal Health and Family Planning (Reproductive Health)</u>			
Detect abnormal presentations	98	<u>44</u>	<u>32</u>
Auscultate the fetal heart sound	100	74	72
Identify multiple pregnancy	92	<u>42</u>	<u>36</u>
Maintain and interpret a partograph	90	<u>32</u>	<u>20</u>
Deliver the placenta by controlled cord traction	94	<u>54</u>	<u>44</u>
Deliver the placenta by controlled cord traction	94	<u>54</u>	<u>44</u>

Table 4.4 (continued)

Key Competency Area	Percentage of Supervisors who Perceived.....(n=50)		
	Tasks as being Important (score 4-5)	That the training was Adequate (score 4-5)	That graduates were Prepared (score 4-5)
Perineal lacerations-prevention and suture	92	<u>42</u>	<u>38</u>
Recognize post partum haemorrhage	96	<u>64</u>	<u>54</u>
Manage umbilical infections	92	<u>68</u>	<u>60</u>
Recognize signs and symptoms of puerperal sepsis	90	<u>50</u>	<u>40</u>
Give counseling to a couple wishing to adopt family planning	100	<u>66</u>	<u>58</u>
Take a PAP smear and send to the district hospital	82	<u>22</u>	<u>10</u>
<u>VI. Water Supply and Basic Sanitation</u>			
Assess community health problems related to water and sanitation	98	<u>64</u>	<u>62</u>
Assist community to identify and protect their water source	92	<u>58</u>	<u>54</u>
Collect and Send water samples for testing	82	<u>34</u>	<u>36</u>
Investigate outbreak of water related diseases	94	<u>38</u>	<u>34</u>
Institute appropriate management and control measures in case of an outbreak	94	<u>30</u>	<u>32</u>

Table 4.4 (continued)

Key Competency Area	Percentage of Supervisors who Perceived.....(n=50)		
	Tasks as being Important (score 4-5)	That the training was Adequate (score 4-5)	That graduates were Prepared (score 4-5)
<u>VII. Prevention and Control of Endemic Diseases</u>			
Identify and refer suspected TB cases	96	70	<u>66</u>
Do salt analysis for iodine content	92	84	82
Carry out malaria control activities	94	<u>68</u>	<u>64</u>
Carry out community based rehabilitation activities	76	<u>22</u>	<u>16</u>
Recognize Mental Health problems in the community	84	<u>26</u>	<u>16</u>
<u>VIII. Health Education on Prevention and Promotion</u>			
Give health education on prevention of common diseases	96	76	72
Promotion of healthy life style activities	94	<u>52</u>	<u>56</u>
Give health education on HIV/AIDS and STIs	98	74	<u>60</u>
Give education of personal and environmental hygiene	94	78	72
Organize a health exhibition in the BHU	86	<u>50</u>	<u>42</u>
<u>A. Administration and Management</u>			
Plan and implement BHU activities	92	<u>56</u>	<u>52</u>
Conduct annual household survey	96	90	88
Analyze, Interpret, utilize and display the information	92	<u>40</u>	<u>32</u>

Table 4.4 (continued)

Key Competency Area	Percentage of Supervisors who Perceived.....(n=50)		
	Tasks as being Important (score 4-5)	That the training was Adequate (score 4-5)	That graduates were Prepared (score 4-5)
Maintain accurate records and send the reports to the DHSO regularly	98	80	76
Training and supervision of VHW	92	<u>60</u>	<u>56</u>
Supervision of BHU activities	96	80	<u>68</u>
<u>B. Community Participation</u>			
Organize a village meeting on health issues	92	<u>58</u>	<u>52</u>
Implement model village activities	90	<u>58</u>	<u>54</u>
Involve the community in planning and implementing a water supply scheme	94	<u>44</u>	<u>32</u>
Get community support in the maintenance of the BHU	88	<u>26</u>	<u>20</u>
<u>C. Intersectoral collaboration</u>			
Plan health activities in the school	90	<u>58</u>	<u>56</u>
Talk to the agriculture extension worker	84	<u>42</u>	<u>36</u>
Getting the Forest Range Officer to approve timber for an ORC	<u>66</u>	<u>34</u>	<u>30</u>
Getting the District Engineer to make an estimate for a water supply scheme	74	<u>32</u>	<u>24</u>

Note: Bold underlined figures represent those with less than 70% ratings.

Tables 4.6 and 4.7 highlights the ten most important tasks ranked by graduates compared with their supervisors' ranking and the ten most important tasks ranked by supervisors compared with graduates' ranking.

It is evident that tasks which graduates rank as most important are not necessarily the ones which supervisors think as most important and vice versa. Half of the tasks ranked high by graduates fall in the middle third of importance ranking of supervisors. The same is true the other way round. 'Look for pallor, jaundice, edema' was ranked 45 by supervisors.

Table 4.6 Ten most important tasks ranked by graduates compared with supervisors' ranking

Item code	Tasks	Grads' Rank	Supvs' Rank
FAN1	Use the Road to Health Card to monitor growth	1	22
IM5	Maintain aseptic precautions (sterilization)	2	2
RH8	Manage umbilical infections	3	37
PRE1	Identify and refer suspected TB cases	4	19
TRT7	Manage a child with Diarrhoea	5	36
TRT1	Take a relevant clinical history	6	21
TRT2	Assess Vital signs (TPR,BP)	7	16
TRT3	Look for pallor, jaundice, oedema	8	45
IM1	Conduct an immunization session	9	1
FAN2	Recognize the different grades of malnutrition	10	26

Table 4.7 Ten most important tasks ranked by supervisors compared with graduates' ranking.

Item code	Tasks	Supvs' Rank	Grads' Rank
IM1	Conduct an immunization session	1	9
IM5	Maintain aseptic precautions (sterilization)	2	2
RH2	Auscultate the fetal heart sound	3	28
RH10	Give counseling for family planning	4	15
ED4	Maintain inventory and storage of drugs, vaccines and equipment	5	41
ADM4	Maintain accurate records reports	6	23
IM4	Maintain the cold chain	7	21
RWS1	Assess community health problems related to water and sanitation	8	38
IM2	Detect any contraindication to immunization	9	24
HE3	Give health education on HIV/AIDS and STIs	10	19

Table 4.8 shows the ten least important tasks ranked by graduates compared with their supervisors' ranking. Here, there is a close agreement between them in most of the areas. Supervisors thought that 'perform urine for albumin / sugar' and 'suture simple cut injuries' were more important.

Table 4.8 Ten least important tasks ranked by graduates compared with supervisors ranking

Item code	Tasks	Grads' Rank	Supvs' Rank
RH11	Take a PAP smear and send to the district hospital	54	60
FAN4	Demonstrate the preparation of a nutritious diet	55	52
TRT5	Perform urine Albumin/Sugar	56	25
TRT10	Suture a simple cut injury	57	27
PRE5	Recognize Mental Health problems in the community	58	58
CP4	Get community support in the maintenance of the BHU	59	54
RWS3	Collect and Send water samples for testing	60	59
ISC2	Talk to the agriculture extension worker Getting the District Engineer to make an	61	57
ISC4	estimate for a water supply scheme Getting the Forest Range Officer to approve timber	62	62
ISC3	for an ORC	63	63

Supervisors' perceptions of preparedness tend to go along with graduates' own feeling of preparedness as shown in Table 4.9 with some notable differences. While graduates ranked 'Perform urine albumin/sugar' of low importance nevertheless they were well prepared for it. Supervisors felt that this was more important but gave a lower ranking for preparedness. Supervisors also felt that graduates were less prepared in giving 'family planning counseling'.

Table 4.9 Ten most prepared task ranked by graduates compared with supervisors ranking

Item Code	Tasks	Grads' Rank	Supvs' Rank
ED3	Prepare ORS solution	1	2
TRT2	Assess Vital signs (TPR,BP)	2	5
FAN1	Use the Road to Health Card to monitor growth	3	4
TRT3	Look for pallor, jaundice, oedema	4	13
IM1	Conduct an immunization session	5	1
RH2	Auscultate the fetal heart sound	6	9
TRT5	Perform urine Albumin/Sugar	7	16
RH10	Give counseling to a couple wishing to adopt family planning	8	27
HE4	Give education of personal and environmental hygiene	9	12
HE1	Give health education on prevention of common diseases	10	10

There is agreement again between graduates and supervisors in the least prepared tasks as shown in Table 4.10.

Table 4.10 Ten least prepared tasks ranked by graduates compared with supervisors' ranking

Item code	Tasks	Grads' Rank	Supvs' Rank
ISC3	Getting the Forest Range Officer to approve timber for an ORC	54	54
CP3	Involve the community in planning and implementing a water supply scheme	55	52
PRE5	Recognize Mental Health problems in the community	56	61
ISC4	Getting the District Engineer to make an estimate for a water supply scheme	57	56
RWS5	Institute appropriate management and control measures in case of an outbreak	58	51
RH11	Take a PAP smear and send to the district hospital	59	63
FAN4	Demonstrate the preparation of a nutritious diet	60	55
TRT9	Manage Anaphylactic Shock	61	58
RWS3	Collect and Send water samples for testing	62	46
PRE4	Carry out community based rehabilitation activities	63	62

Table 4.11 shows the ten most important tasks ranked by graduates compared with their preparedness ranking. It highlights the fact that graduates perceived themselves to be inadequately prepared in some important tasks like ‘Taking history’ and ‘Manage a child with diarrhea” but they were also well prepared in some not so important tasks as shown in the next table, Table 4.12.

Table 4.11 Ten most important tasks ranked by graduates compared with their preparedness ranking

Item code	Tasks	Import Rank	Prepared Rank
FAN1	Use the Road to Health Card to monitor growth	1	3
IM5	Maintain aseptic precautions (sterilization)	2	13
RH8	Manage umbilical infections	3	16
PRE1	Identify and refer suspected TB cases	4	17
TRT7	Manage a child with Diarrhoea	5	23
TRT1	Take a relevant clinical history	6	34
TRT2	Assess Vital signs (TPR,BP)	7	2
TRT3	Look for pallor, jaundice, oedema	8	4
IM1	Conduct an immunization session	9	5
FAN2	Recognize the different grades of malnutrition	10	12

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Table 4.12 Ten most prepared tasks ranked by graduates compared with their importance ranking

Item code	Tasks	Prepared Rank	Import Rank
ED3	Prepare ORS solution	1	27
TRT2	Assess Vital signs (TPR,BP)	2	7
FAN1	Use the Road to Health Card to monitor growth	3	1
TRT3	Look for pallor, jaundice, oedema	4	8
IM1	Conduct an immunization session	5	9
RH2	Auscultate the fetal heart sound	6	28
TRT5	Perform urine Albumin/Sugar	7	56
RH10	Give counseling to a couple wishing to adopt family planning	8	15
HE4	Give education of personal and environmental hygiene	9	29
HE1	Give health education on prevention of common diseases	10	16

Tables 4.13 and 4.14 highlight the areas and tasks in which less than 70% of graduates and supervisors felt prepared. It means that 30% or more of graduates felt unprepared in 23 of the 63 tasks and 30% or more of supervisors felt graduates were unprepared in 50 of the 63 tasks.

Table 4.13 Tasks in which less than 70% of Graduates felt prepared

Key Competency Areas	Rank	% Prepared
<u>Administration and Management</u>		
Plan and implement BHU activities	44	65.9
Analyze, Interpret, utilize and display the information	42	68.1
Training and supervision of VHW	51	58.7
<u>Community Participation</u>		
Implement model village activities	41	68.8
Involve the community in planning and implementing a water supply scheme	55	54.3
Get community support in the maintenance of the BHU	52	58.7
<u>Provision of Essential drugs</u>		
Calculate fluid required for a child with some dehydration	43	68.1
Maintain inventory and proper storage of drugs, vaccines and equipment	45	64.5
<u>Food and Nutrition</u>		
Manage common types of malnutrition	46	63.0
Demonstrate the preparation of a nutritious diet	60	44.9
<u>Health Education on Prevention and promotion</u>		
Organize a health exhibition in the BHU	47	61.6
<u>Immunization</u>		
Manage adverse reactions to vaccine	53	58.0

Table 4.13 (continued)

Key Competency Areas	Rank	% Prepared
<u>Intersectoral Collaboration</u>		
Getting the Forest Range Officer to approve timber for an ORC	54	55.1
Getting the District Engineer to make an estimate for a water supply scheme	57	50.0
<u>Prevention and Control of Endemic Diseases</u>		
Carry out malaria control activities	50	58.7
Carry out community based rehabilitation activities	63	37.0
Recognize Mental Health problems in the community	56	54.3
<u>Maternal Health and Family Planning</u>		
Identify multiple pregnancy	49	58.7
Take a PAP smear and send to the district hospital	59	46.4
<u>Water supply and Basic Sanitation</u>		
Collect and Send water samples for testing	62	40.6
Investigate outbreak of water related diseases	48	60.1
Institute appropriate management and control measures in case of an outbreak	58	48.6
<u>Treatment of Common Diseases and Injuries</u>		
Manage Anaphylactic Shock	61	43.5

A higher proportion of males felt prepared than female graduates except in 'Take a PAP smear' where 71% of females said they were prepared compared to only 18.5% males. 30% or more of males said they were not prepared in 18 tasks compared to 27 tasks in females.

The number of tasks that 30% or more felt unprepared across the years varied from 31 task for the 1999 group, 19 for 2000 group, 16 for 2001 group, 29 for 2002 group and 20 for the 2003 group of graduates. (data not shown)

Table 4.14 Tasks in which less than 70% of the Supervisors felt graduates were prepared.

Key Competency Areas	Rank	% Prepared
<u>Administration and Management</u>		
Plan and implement BHU activities	36	52
Analyze, Interpret, utilize and display the information	53	32
Training and supervision of VHW	31	56
Supervision of BHU activities	14	68
<u>Community Participation</u>		
Organize a village meeting on health issues	37	52
Implement model village activities	35	54
Involve the community in planning and implementing a water supply scheme	52	32
Get community support in the maintenance of the BHU	59	20
<u>Provision of Essential drugs</u>		
Administer drugs by different routes	28	56
Calculate fluid required for a child with some dehydration	60	16
Maintain inventory and proper storage of drugs, vaccines and equipment	38	44
<u>Food and Nutrition</u>		
Recognize the different grades of malnutrition	17	66
Manage common types of malnutrition	49	34
Demonstrate the preparation of a nutritious diet	55	26
<u>Health Education on Prevention and promotion</u>		
Promotion of healthy life style activities	30	56
Give health education on HIV/AIDS and STIs	25	60
Organize a health exhibition in the BHU	40	42
<u>Immunization</u>		
Detect any contraindication to immunization	24	60
Manage adverse reactions to vaccine	43	36
Maintain the cold chain	19	64

Table 4.14 (continued)

Key Competency Areas	Rank	% Prepared
<u>Intersectoral Collaboration</u>		
Plan health activities in the school	32	56
Talk to the agriculture extension worker	45	36
Getting the Forest Range Officer to approve timber for an ORC	54	30
Getting the District Engineer to make an estimate for a water supply scheme	56	24
<u>Prevention and Control of Endemic Diseases</u>		
Identify and refer suspected TB cases	15	66
Carry out malaria control activities	21	64
Carry out community based rehabilitation activities	62	16
Recognize Mental Health problems in the community	61	16
<u>Maternal Health and Family Planning</u>		
Detect abnormal presentations	50	32
Identify multiple pregnancy	44	36
Maintain and interpret a partograph	57	20
Deliver the placenta by controlled cord traction	39	44
Perineal lacerations-prevention and suture	42	38
Recognize post partum haemorrhage	33	54
Manage umbilical infections	26	60
Recognize signs and symptoms of puerperal sepsis	41	40
Give counseling for family planning	27	58
Take a PAP smear and send to the district hospital	63	10
<u>Water supply and Basic Sanitation</u>		
Assess community health problems related to water and sanitation	23	62
Assist community to identify and protect their water source	34	54

Table 4.14 (continued)

Key Competency Areas	Rank	% Prepared
Collect and Send water samples for testing	46	36
Investigate outbreak of water related diseases	48	34
Institute appropriate management and control measures in case of an outbreak	51	32
<u>Treatment of Common Diseases and Injuries</u>		
Take a relevant clinical history	47	34
Perform Haemoglobin estimation	22	64
Perform urine Albumin/Sugar	16	66
Manage a child with Diarrhoea	18	66
Manage a child with Pneumonia	29	56
Manage Anaphylactic Shock	58	20
Suture a simple cut injury	20	64

4.3. Graduates agreement with statements about their training

Table 4.15 shows the graduates agreement with statements about their training.

Items 1-4 deal with generic skills, items 5-9 with the training per se NS items 10-14 with the teaching aspects. Item 15-16 were about the library facilities and item 17 about the assessment system.

4.4 Supervisors agreement with statements about graduate attributes and the training program.

Table 4.16 shows supervisors agreement with statements about the training programme and graduates' attributes and Table 4.17 compares the ratings between DMOs and DHSOs.

Items 1-6 deal with the training program and items 7-16 were about graduates' attributes.

Table 4.15 Graduates agreement with statements about the training.

Statements		(n=138) Agree (%) (Score 4-5)
<u>Generic skills</u>		
1.	The course helped me to develop my ability to work as a team member.	96.4
2.	The course developed my problem solving skill.	91.3
3.	I feel confident about dealing with patients.	92.0
4.	The course helped me to develop my ability to plan my work.	86.2
<u>Training aspects</u>		
5.	The academic environment was challenging.	87.0
6.	The duration of the training was SHORT to be adequately prepared.	84.1
7.	The theoretical aspects of the training were MORE than required.	42.0
8.	The practical aspects of the training were INADEQUATE.	80.4
9.	The contents covered all areas necessary to perform my job as a health assistant.	66.0
<u>Teaching and learning aspects</u>		
10.	The classroom teachings were excellent.	70.3
11.	Teaching staff worked hard to make their subjects interesting.	84.1
12.	Teaching staff gave helpful feedback on how I were doing.	74.6
13.	Teaching staff showed concerns about the difficulties students may be having.	72.5
14.	Teaching staff were more interested in testing what you have memorized than what you have understood.	37.7
17.	The assessment system was fair.	86.2
<u>Library resource and access</u>		
15.	The library resources were adequate.	88.4
16.*	The access to the library was NOT enough.	41.3

Table 4.16 Supervisors' agreement with statements about graduates' attributes and the training program.

Statements	(n=50) Agree (%) (Score 4-5)
<u>Training program</u>	
1. The graduate are meeting the health need of the community	94
2. There is the need for the HA training to be continued.	98
3. The new graduates should be attached with a senior for 6 months before assuming independent responsibilities.	100
4. The health assistants graduating from the institute are competent enough to practice on their own.	60
5. The training duration should be increased	66
6. The students should spend more time in the community than at present	74
<u>Graduates' attributes</u>	
7.* I am NOT satisfied with the performances of the graduates	48
8. The graduates are motivated to carry out their responsibilities	72
9.* The graduates have NO interest to learn	60
10. The graduates are good in solving problems related to their work	58
11.* The graduates are NOT capable of making decisions	56
12. The graduates can communicate well with their patients, families, community and other members of the health team	80
13. The graduates have the leadership skills to lead the community in health matters	56
14. The graduates have the requisite clinical skills to provide good care to their patients	56
15. The graduates have the spirit of teamwork	64
16. The graduates have the right attitude for their work	66

* denotes reversed items

Table 4.17 Supervisors agreement (%) with statements about the training program and graduate attributes. (DMOs vs. DHSOs)

Statements	DMO (n=23)	DHSO (n=27)
<u>Training program</u>		
1. The health assistants are meeting the health care needs of the community	91.3	96.3
2. There is the need for the HA training to be continued.	95.7	100
3. The new graduates should be attached with a senior for 6 months before assuming independent responsibilities	100	100
4. The health assistants graduating from the institute are competent enough to practice on their own.	30.4	48.1
5. The training duration should be increased	60.9	70.4
6. The students should spend more time in the community than at present	60.9	85.2
<u>Graduates' attributes</u>		
7.* I am NOT satisfied with the performances of the graduates	56.5	40.7
8. The graduates are motivated to carry out their responsibilities	60.9	81.5
9.* The graduates have NO interest to learn	60.9	59.3
10. The graduates are good in solving problems related to their work	52.2	63.0
11.* The graduates are NOT capable of making decisions	47.8	63.0
12. The graduates can communicate well with their patients, families, community and other members of the health team	82.6	77.8
13. The graduates have the leadership skills to lead the community in health matters	47.8	63.0
14. The graduates have the requisite clinical skills to provide good care to their patients	47.8	63.0
15. The graduates have the spirit of teamwork	56.5	70.4
16. The graduates have the right attitude for their work	52.2	77.8

* denotes reversed items

4.5 Open ended responses

The comments here are in response to the four open ended questions addressed to both graduates and supervisors worded slightly differently for graduates for their better understanding.

1. What are the strengths/ liked most about the HA training?
2. What were the weaknesses or worst aspects that they see in the current training?
3. Suggestions for improvement
4. Additional comments

The comments were grouped into themes and the number of citations tallied. Not all respondents gave comments to all the questions.

Table 4.18 summarizes the comments and the number of citations received from the graduates regarding the training and suggestions for improvement.

Table 4.18 Graduates' comments about likes, worst aspects and suggestions for improvement in the training.

Strengths /likes about the training	No. of citations
Practical/clinical posting	111
Helpful staff and good teaching	30
Liked the overall atmosphere	24
Weaknesses/worst aspects of the training	
Lack of time for practical work	58
Lack or poor supervision/guidance	22
Lack of confidence	20
Suggestions for improvement/additions	
Increase duration of practical/clinical/field posting,	101
Give more time or opportunities for practical procedures	88
Need for refresher course, continuing education, workshops on new topics	59
Need for supervision/guidance during clinical and field posting	30

Table 4.19 summarizes the supervisors' comments about the strengths, weaknesses and suggestions for improvement in the training.

Table 4.19 Supervisors' comments about strengths, weaknesses and suggestions for improvement in the training.

Strengths of the HA training program	No of citations
HAs are doing a good job	28
HAs are qualified and dedicated	10
HAs can manage most common cases	8
Weaknesses	
Not enough clinical/practical knowledge/experience	24
Not enough field experience/lacks confidence	15
Not enough experience in minor procedures	13
Training duration short	10
Suggestions for improvement	
Increase duration of training	25
Need for attachment/internship	24
Stress more on practical than theory	22

CHAPTER 5

SUMMARY, DISCUSSION AND RECOMMENDATIONS

5.1 Summary

An alumni survey is an important instrument because it provides an assessment of training with respect to the end product. Such an instrument allows the alumni to evaluate the effectiveness of various components of their training in preparation for their current position (45). It provides useful information on which aspects of the program worked well, which areas are in need of further scrutiny for improvement and areas that might even be redundant in relation to the actual practice.

Supervisors survey provide us with an outside assessment of the graduates' performances and help us to determine their expectations and perceptions on whether our graduates possess the outcome characteristics we hope to foster in our students (52).

This study looked into the perceptions of importance, adequacy of training and preparedness for practice of recent graduates from the Royal Institute of Health Sciences and of their supervisors. Besides generating useful demographic data and other pertinent issues regarding the training aspects and graduate attributes, the study allows us to evaluate the effectiveness of the training program in providing appropriate training to our graduates to prepare them for the ultimate challenges they face as practicing health workers.

Health Assistants are the frontline health workers in the Bhutanese health delivery system. They provide curative, preventive, promotive and rehabilitative services to nearly 80% of the population of Bhutan. Therefore, how relevant their training is and how prepared they are is of paramount importance to all concerned-the Government, the Health Ministry, funding agencies, the Institute, faculty, students and not in the least bit the community served at large.

This descriptive study collected data from 140 health assistant graduates from 1999-2003 and their 50 supervisors. While, generally surveys are plagued with poor response rates, we got a 97.9% [138] response rate from the graduates and a 100% from supervisors. This was expected because despite the difficult geographical terrain

and accessibility, we are a small well knit community of health personnel who are committed to furthering a cause for the common good. The researcher also traveled to 17 of the 20 districts to deliver the questionnaires either personally or through the supervisors and solicited their full cooperation. Regular communication was also maintained to remind the supervisors.

5.2 Discussion

5.2.1 Discussion on the demographic characteristics of graduates and total training experience.

The mean age of the graduates is 25.31 years (Mode-24,26) and ranged from 21-31 years. There were almost equal number of males and females (47.1% and 52.9%) graduates showing that there is gender balance and equity albeit slightly in favour of females. This is a positive trend as women in general and women in rural areas particular prefer female service providers. This would have a positive impact in our efforts to reduce maternal mortality, increase antenatal care attendance and institutional deliveries and increase the use of family planning services and cervical cancer screening program.

The number of graduates with each passing year is on the decline. This is so because there is no further dramatic expansion of new infrastructure as in the 7th Five Year Plan (1992-1997) when many new BHUs were constructed and manpower was required to man these new facilities. The focus in the 8th Five Year Plan and the current (9th) plan period from 2002-2007 is on consolidation and improving the quality of services. Therefore, the number of intake for 2003 and onwards has been reduced to fifteen. While the Institute can be proud to be able to fulfill one of its objectives of meeting the health manpower requirements, there is an increasing pressure from other agencies to increase the intake to provide employment opportunities for the ever increasing number of students passing out from high schools. Considering the limited absorption capacity for employment with the Government being the major or in some cases the sole employer, this is a dilemma that the country is grappling with. The brighter side is that increasing competition among the students would result in selection of the best candidates. What was a few

years ago, the training ground for class 10 pass students is now filled with class 12 applicants.

It is heartening to know that 96.4% has chosen this profession on of their own choice. Only one graduate said because there was no other choice. This may have an important bearing on their future commitment and motivation towards their profession.

Generally, the graduates had a positive feeling towards their training. 83% responded that the training had strong to very strong effect on their ability to assume a responsible, professional role in society. Almost 90% were satisfied with their total experience during training. Only one was not satisfied at all and about 9% somewhat satisfied. 86.2% said that they would recommend the training to their close friend or a relative which is again a positive indication towards the training and their profession.

5.2.2 Discussion on supervisors' characteristics

23 out of 50 (46%) the supervisors were District Medical Officers and 27 (54%) District Health Supervisory Officers. The DMO is a medical doctor and he or she is the head of the district health system. He is supported by the DHSO. The DHSO is a health professional, usually a senior health assistant with one year of training in district health management. His main role is supervision of health activities and health workers in his area.

As would be expected, all DHSOs were in service for more than 10 years. In fact 24 out of 27 (88.9%) had more than 15 years of work experience. Whereas 16 (69%) of the DMOs had only 1-4 years of work experience with only 6 (26%) having 10 years or more work experience. The conclusion that can be drawn here is that young doctors run nearly 70% of the district hospitals in Bhutan but they are ably supported by experienced DHSOs. A similar situation was seen in Thailand in the eighties (46). This stems from the practice that doctors upon graduation are sent to the district hospitals for 2-3 years to gain field experience while their senior counterparts can be relieved to pursue post graduate studies. The implications in this study would be that as more than two thirds of the DMOs have less than 5 years of work experience, they might have only superficial knowledge regarding the graduates attributes and competency. Moreover, being doctors, they may have higher expectations from the graduates who had only two years of training. Many of them

are also not aware of the training and the Institute. In contrast, DHSOs have long years of experience and all of them have gone through the health assistant training themselves and would therefore be able to judge the graduates and the training aspects accurately but favorably too.

The findings also show that 86% of the supervisors have been in the present place of work for three years less. This again is due to the practice of compulsory rotation of place of posting with a few exceptions to prevent undue advantages or disadvantages and stagnation. This would have a bearing on this study if the supervisors had to rate graduates on a one to one basis but here we have asked the supervisors to rate the graduates in general. Besides, there is only one government health system and graduates of one single institute to assume a semblance of uniformity across the country. Group and individual differences and variations are inevitable.

5.2.3 Discussion on perceptions of importance, adequacy and preparedness for practice.

5.2.3.1 Importance

An overwhelming majority of respondents felt that the tasks identified were important. It gives support that the training is relevant (37). This reaffirms that fact that experts, graduates and supervisors place great importance on the activities of primary health care which is the strategy for health care delivery in Bhutan. The curriculum of the HA training is and should reflect the principles, strategies and elements of PHC so that the training program is relevant and meets the health needs of the people.

However, perceptions of importance differ between graduates and supervisors. What graduates feel important are not necessarily important for the supervisors and vice versa. Graduates rated tasks related to 'Treatment of common diseases and injuries', 'Immunization' and other clinically related tasks most important. This may be so because these are activities they do everyday. Supervisors on the other hand gave importance to 'administrative and management tasks' and 'health education', which are ranked lower down by graduates. 'Immunization' was considered to be an important area by both. Educators have to balance the needs of both the graduates and supervisors, without compromising either in order to produce graduates fit for the

purpose. In other studies, discrepancies have also been found between what staff nurse and administrators expected as required skill versus the skills taught in nursing schools. The need for collaboration between education and service was emphasized (42).

Both graduates and supervisors were in agreement when it came to identifying the least important tasks. It should be pointed out here that the researcher does not intend to belittle these tasks as in the first instance they were selected as being the most important tasks among the many activities in PHC. It is only for prioritizing purpose to point out that these were of less importance compared to others. They appear to be related to the frequency of performing those tasks. Intersectoral Collaboration was ranked lowest by both groups of respondents.

Graduates also point out that tasks in which they felt prepared are not necessarily the most important ones and that they are not so prepared in many of the most important tasks. It is the task of trainers to make sure that these discrepancies are remedied by focused teaching and providing ample learning opportunities directed towards these tasks in which they felt less prepared.

Maintaining awareness of student and stakeholder requirements and expectations is critical to improve educational services and to support related planning. A key challenge is to balance the differing needs and expectations of both. Student requirements should be interpreted in a holistic sense to include knowledge, application of knowledge, problem solving skills, interpersonal skills, character development, critical thinking skills, conflict resolution and citizenship. Stakeholder requirements should include trends, changing requirements of graduates in the workplace that reflect requirements set by stakeholders, changing local, national and global requirements. Building student and stakeholder relationships and determining their satisfaction will enhance student learning and the institute's ability to deliver its services, satisfy students and stakeholders and develop new opportunities (53).

5.2.3.2 Adequacy and Preparedness

These two factors go hand in hand and will be discussed as such. In general perceived adequacy and perceived competency were linked. It is to be expected that if one perceives the training to be adequate in an area, one will with a

few exceptions invariably be prepared in that area also. It may also be true in some cases that the training was adequate but not prepared and vice versa. Responses represent only perceptions formed over a period of time. There maybe other influences on their perceived level of preparedness other than their training like working environment, experiences (37). The findings in this study also conform to this fact.

Graduates felt most prepared in practical or clinically related tasks under the different areas and in Health Education. Supervisors also generally conform to graduates' perception of preparedness. While exact matching is desirable but hard to find, differences in ranking do not vary by large margins. Studies of residents or young doctors have shown that 80-90% of physicians rate their clinical preparedness as high. Low rating was taken as <70% (37). Other studies also support this finding (35, 47). Graduate nurses rated themselves higher than educators or employer. The same study quotes another study on competency levels of students as perceived by students, educators and supervisors and noted a higher student perception of competence compared to educators and administrators. Educators rated graduates higher than administrator. (42)

However, in a comparison of perceptions of new graduates and educational supervisors on how well prepared graduates were for the role of pre-registration house officer (PRHO), they found that out of 18 broad competencies only 4 were rated as "quite well prepared" by at least 50% of graduates. More than half of supervisors rated graduates as more than quite competent in only 3 areas. Within the competencies surveyed there were differences in perceptions on preparedness for the skills they may require as PRHO. (41)

The tasks that were ranked least prepared by graduates also closely matched supervisors ranking. Most of these tasks also featured among those ranked the least important. The least prepared ranking again appears to relate to the frequency of the task performed and as such cannot be ascribed to any particular area, as weaknesses are evident in all the areas. Areas of low perceived adequacy and preparedness should receive specific attention of trainers. The training may be made more effective by providing practice opportunities in actual practice settings and stressing on areas where weaknesses are evident.

Technique of self-assessment has been widely used although how well residents' perceptions match some objective standard of preparedness is not known. Some studies have found little correlation between physician and medical students' self assessment and objectively measured competency. Others have found that physicians are able to predict their performance reliably. Residents or interns may underrate themselves compared with ratings of their supervisors. (39, 54-58)

Use of employer or supervisor feedback regarding graduate performance is considered a valuable tool in the evaluation of educational program outcomes. By collaborating, educators and supervisors/employers may identify differences in performance expectations that need to be addressed in the curriculum. The education process must provide the skills and knowledge and services the opportunity and time for development (42).

Supervisors may not be in a good position to rate the preparedness of graduates. They should not simply rely on their own observation and judgment but should gather the opinions of others. They also responded on the basis of a general perception of graduates rather than on ratings of individuals. Supervisors' views maybe skewed by a particularly good or poor health worker under their supervision.

Supervisors are one of the key stakeholders in the health delivery system. They are responsible for assuring the quality of service provided by our graduates. Their requirements, expectations and preferences must be determined and respected. We must also build relationships with them to determine the key factors that lead to their satisfaction and ensuring the continuing relevance of our training programs, to develop new opportunities and to create an overall climate conducive to learning and development of our students and the institute. We must listen and learn to determine their key requirements and changing expectations and use the relevant information and feedback for planning and process improvements to better satisfy student and supervisor's need (53). Ultimately, it would be the people who will benefit from our graduates if they are well prepared for practice.

In this study, supervisors' perceptions about graduates' preparedness tend to be positively correlated with graduates' own perceptions. In other words, supervisors seem to be able to judge graduates' performances fairly well. Male graduates generally felt more prepared than females. A large percent of females (71%) however

felt prepared in ‘Take a PAP smear’ compared to only about 19% males. The reason is quite obvious. There were also no large differences across the years to suggest any trend.

The most alarming fact to emerge in the light of the above statements and based on the 70% criteria we set to define preparedness is that 30% or more of the graduates felt unprepared in 23 (about one third) of the 63 tasks. The situation assumes panic proportions when 30% or more of our supervisors say that graduates are not prepared in 50 of the 63 tasks.

The percentage of head nurses expectation and the perception of the new nurse graduates in skills that were reported to be performed precisely in clinical situations were significantly different in 145 skills (68%). In 55 skills, head nurse had higher expectations while in 14 skills, graduates rated themselves significantly higher (56).

Where there are high ratings and agreement between graduates and supervisors, it is reasonable to assume that the course has prepared the students well. However, where graduates and supervisors agreed on low ratings then the curriculum has not entirely met its principal aim producing graduates fully prepared for practice. For those tasks where there is lack of agreement between graduates and supervisors, it probably reflects the different expectations of performance (41).

Primary Health Care focuses on health rather than on disease, prevention and promotion rather than curative. Increasing the relevance of education of PHC workers is a strategy for improving the quality of health care service and the quality of life of the people especially in the developing world where countries are facing the “double burden” of disease. The Ottawa Charter for Health Promotion adopted at the First International Conference on Health Promotion, Ottawa, 21 November 1986 presents actions to achieve Health for All by the year 2000 and beyond. It calls on the role of the health sector to move increasingly in a health promotion direction, beyond its responsibility for providing clinical and curative services. This requires changes in professional education and training to lead to a change in attitude and organization of health services which refocuses on the total needs of the individual as a whole person.

The curriculum of the HAs should also reflect the above principles and increasing focus be given to prevention of diseases and promotion of healthy lifestyles

which are more cost effective in an ever dwindling resources situation and escalating cost of medical care.

5.2.4 Graduates agreement with statements about the training

Generally the graduates had a positive attitude towards their training. Other studies also report overall satisfaction with their training (41). Nursing students in Norway reported slight dissatisfaction with the nursing program but general satisfaction with the clinical practice (33).

More than 85% of the graduates agreed that training had helped them to develop their ability to work as a team member, develop their problem solving skills, confidence in dealing with patients and to plan their work.

87% agreed that the academic environment was challenging. More than 80% felt that the training duration was short to be adequately prepared and that the practical aspects of the training were inadequate. 66% agreed that the contents covered all the necessary areas for them to perform their job. And only 42% agreed that the theory was more than adequate.

Generally the graduates were positive about the teaching. 70.3% said that the classroom teaching was excellent and 84.1% and 74.6% agreed that the teaching staff worked hard and gave useful feedback respectively. 72.5% agreed that teaching staff showed concerns for the difficulties they maybe having. Only 37.7% agreed that teaching staff were more interested in testing what they have memorized than what they have understood.

88.4% agreed that the library resources were adequate and only 41.3% felt that access to library was not enough. 86.2% agreed that the assessment system was fair.

5.2.5 Supervisors agreement with statements about graduate attributes and the training programme.

Generally the supervisors are positive about the training. More than 90% agreed that the health assistants are meeting the health care needs of the community and that the HA training needs to be continued. About two thirds (66%) of them agreed that the training duration should be increased. All supervisors agreed that graduates should be attached for a period of six months with a senior staff before assuming independent responsibilities. 74% also agreed that graduates should spend

more time in the community than at present. Less than two thirds (60%) agreed that the graduates were competent enough to practice on their own.

Supervisors were not so happy with the graduates' attributes. Nearly half (48%) were not satisfied with the performances of the graduates and more than half (56%) agreed that graduates were not capable of making decisions or had the leadership skills to lead the community in health matters nor had the requisite clinical skills to provide good care to their patients. 60% said that the graduates had no interest to learn and only 58% felt that they were good in problem solving. On the more positive side, 72% felt that the graduates had the motivation to carry out their responsibilities and 80% felt that they had good communication skills. 64% felt the graduates had the spirit of teamwork and 66% agreed that they have the right attitude for their work.

More DHSOs tend to agree positively with the statements regarding the training program aspects than DMOs. DMOs are also more critical about graduate attributes than DHSOs. Only in NO interest to learn, both DMOs and DHSOs nearly seem to agree (60.9%/59.3). This probably reflects the differences in the nature of their work and levels of expectations as discussed earlier.

5.2.6 Open-ended responses

Open ended written questions generate words rather than countable elements and offer rich descriptions and explanations that complement quantitative information. Some of the comments are produced here verbatim to illustrate graduates' likes and dislikes about the training and suggestions for improvement.

“Frankly I enjoyed being a trainee at RIHS and mostly I enjoyed doing practical and demonstrations in the institute and wards. These things made me eager to learn more.”

“Practical attachments in OPD and field attachment period were the most I liked during the training as I felt they were very important.”

“I liked the learning method of one week theory followed by one week practical and the teaching methods.”

“I am not satisfied with my training because it was very short”

“During our training in RIHS we are not posted in Dental Department. At present most of the cases in the field are of dental problems and we don’t know how to extract the teeth. So therefore, we expect some months to be trained in dental procedures.”

“Students lack attention in the wards because seniors or staffs never guide us during our practical placement in the wards.”

“To follow up students who are attached to wards because ward in charges gives only dusting, guaze making and bed making which are less important in practical at BHUs.”

“After graduation from RIHS instead of directly posting to the field it would be better to post to hospitals as a probation period for 6 months to gain confidence, skills and experience.”

Graduates seem to have liked the overall atmosphere of the Institute, the teaching and the staff. They liked best the practical aspects of their training such as their clinical postings in the wards and field attachment in the community.

The worst aspects of the training was the short duration of training which left many of them unprepared as they had less time for practical works, less time through some important units like Dental. Many also stressed the lack of supervision and guidance from the faculty and supervisors in the ward and in the field.

A large number of comments said that the training duration should be increased so that they can be adequately exposed to a wide variety of clinical and community experiences and thereby build up their confidence. They also felt the need to improve the supervision and guidance provided to the students.

Supervisors felt that the graduates were doing a good job in the field and meeting the health needs of the community they serve. They were dedicated and qualified enough to manage most of the common cases.

The major weaknesses of the training were that graduates lacked clinical or practical knowledge and field experience and therefore lacked the confidence. They also felt that the training duration was short and suggested that the training duration should be increased with more emphasis on the practical aspects. They suggested that

graduates should undergo a period of attachment or internship to develop their confidence and learn the tricks of the trade.

Supervisors' suggestions can be summarized in the following comments:

“HAs are well motivated and adequately trained but poor in certain important areas like recording and reporting, using information and administration and management. Weak in doing basic lab tests, planning of health education activities and unable to do simple tooth extraction.”

“Increase training period and they should be having attachment after their training for at least 6 months before they are posted to BHUs. Poor in lab procedures, diagnosis and communication.”

“They seem to be lacking initiatives especially when required to involve the community and other stakeholders in the promotive and preventive aspects of PHC. They should have more community exposure.”

5.3 Conclusion

This study attempted to find the relevance and effectiveness of the Health Assistant training in Bhutan by gathering data on the perceptions of importance, adequacy of training and preparedness for practice from recent health assistant graduates and their supervisors. Additional useful information about the training, graduate attributes, satisfaction, strengths, weaknesses and suggestions for improvement were also generated.

We can only make a judgment about relevance and effectiveness within the limitations of the self reported nature of the data in this study and the conflicting reports on the validity and accuracy of self assessments in health professions training.

On the basis of the results, the following conclusions are drawn.

1. More than 90% of graduates and supervisors agree that all the tasks identified were important. The rank of importance varied with the priority and frequency of the tasks performed. Graduates ranked tasks which they performed daily as more important whereas supervisors ranked tasks of management aspects more important. But based on the perceptions of importance it can be concluded that the HA training provided is relevant.

2. As for effectiveness, 70% or more of graduates felt that they were adequately prepared in 40 of the 63 tasks whereas 70% or more of supervisors felt graduates were prepared in only 13 of the tasks. Graduates may overestimate their preparedness level while supervisors maybe over critical of graduates' performances based on isolated incidents or may have higher expectations or under estimations. The truth may be somewhere in between. The fact that graduates felt unprepared in one third of the tasks and supervisors believe graduates are not prepared in more that two thirds of the tasks lead us to conclude that the training does not adequately prepare its graduates for practice in their diverse roles as primary health care workers

Maintaining awareness of student and stakeholder requirements and expectations is critical to improve educational services and to support related planning. A key challenge is to balance the differing needs and expectations of both.

3. The major strengths of the training program is that the graduates are fulfilling their roles in meeting the health needs of the people and that graduates have the right attitude and dedication in carrying out those roles. The graduates are also satisfied with their training experience and with what the Institute has to offer in terms of facilities and the teaching learning process.

4. The weaknesses are the short duration of training to be adequately prepared for their diverse roles, lack of supervision and guidance of students during their clinical rotations, inadequate exposure to various clinical units and field experiences. Areas of weaknesses were also evident in all key competency areas. These areas will be highlighted to be put more emphasis on by the concerned teachers. Efforts will have to be directed to increase the duration of training, to institute proper planning of clinical and field postings and to improve the supervision and guidance of students by the faculty.

5.4 Recommendations

The training for the health assistants at the RIHS is relevant but does not adequately prepare its graduates for their diverse responsibilities as primary health care workers. To improve the effectiveness of future training of HAs the following recommendations are made on the basis of the results and experiences gained from this study.

Recommendations to the Ministry of Health

1. To improve quality of care as embodied in the 9th Plan objectives, the duration of HA training should be increased from 2 to 3 years to allow students to get adequate exposure in both clinical and field experiences and to accommodate a six month period of attachment, 3 months of which should be spent in a BHU and 3 months in a district hospital before they graduate so that they are prepared to take up their responsibilities confidently.

2. To up grade the Health Assistant training from certificate to diploma course in line with other vocational training programs in the country. Opportunities should be given to present HAs to upgrade themselves through a one year program. This would serve as an incentive to present health workers to upgrade themselves, enhance their knowledge and career opportunities as well as be an attractive career choice to prospective students. The BHWs should also be considered for up gradation to HA through appropriate continuing education to have a uniform single category of primary health care worker in the country.

Recommendations to the Institute

1. To improve supervision and guidance of students during their clinical rotations and field work. This would entail working closely with clinical and field supervisors and involving them in curricula review and institutional activities.

2. To focus teaching on those areas identified as unprepared and give adequate opportunities to experience those in actual practice settings i.e. more stress on practice than theory, community based rather than in hospital settings.

3. Further to bridge the theory-practice gap, to promote learning in the students as well as to enhance their own knowledge and practice, the RIHS faculty should return to periodic practice and spend time actually delivering care in order to become sufficiently familiar with the current clinical practices and issues.

4. To conduct such studies with other category of health workers like technicians and nurses to evaluate the relevance and effectiveness of their training with focus on actual competencies rather than just their perceptions.

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APPENDICES

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Appendix-A: Permission for data collection

To,
The Joint Director
Medical Education Division
Ministry of Health
Thimphu

Sub: Approval for Thesis Data Collection.

Sir,
Please find herewith my thesis proposal for the Master of Science in Health Development (Health Professions Education) which has been passed by the Thesis Committee of the Faculty of Medicine, Chulalongkorn University and approved by the Ministry of Health vide Note Sheet No.(9)/Research/ADM/2004 dated June 7, 2004.

The Faculty recommends that students' research should be carried out in their home country so that the study will be more meaningful and useful. As such, my study titled "Graduate health assistants' perceptions of their preparedness for practice in Bhutan" has been developed keeping in mind the relevance and its usefulness to the Institute.

The field work is expected to take about 5 months from June to October for pretesting, distribution of the data collection forms and collection of the completed forms.

Therefore, necessary permission and approval is sought to allow me to proceed to conduct this study in Bhutan.

Thanking you,

Yours faithfully,

Dr.Chencho Dorjee
Medical Education Unit
Faculty of Medicine
Chulalongkorn University
Bangkok, Thailand

Appendix-B: Introduction letters

To,
The Health Assistant

Dt.

.....BHU

Sub: Soliciting your assistance

Dear.....,

You are invited to take part in this survey. I am collecting data for my thesis for which I request your support. It will take approximately 20-30 minutes of your time. The title of my thesis is “*Graduate Health Assistants’ Perceptions of their Preparedness for Practice in Bhutan.*”

The purpose of the survey is to find out something about your experiences and perceptions about your training at RIHS. The findings will provide valuable feedback to the Institute and the faculty in further improving the quality of training.

Your opinions will be very helpful. However, you have the right to refuse to participate or answer any of the items in the questionnaire that you are uncomfortable with. No names will be required.

After you have completed the questionnaire, please send them in the enclosed envelop to your DHSO at your earliest convenience.

Should you require any clarification, please contact the undersigned at this address:

Dr.Chencho Dorjee

RIHS, Thimphu

Phone: 02-322922 (Home), 02-321212, 322031 (Office) Fax-02-323856

Email: cdorji88@yahoo.com

Thank you for your time and co-operation.

With best wishes,

Yours sincerely,

Dr.Chencho Dorjee
M.Sc Student
Faculty of Medicine
Chulalongkorn University
Bangkok, Thailand

To,
The District Medical/Health Supervisory Officer
.....Hospital.

Dt.

Sub: Soliciting your assistance

Dear Sir,

You are invited to take part in this survey. I am collecting data for my thesis for which I request your support. It will take approximately 20-30 minutes of your time. The title of my thesis is “*Graduate Health Assistants’ Perceptions of their Preparedness for Practice in Bhutan.*”

The purpose of the survey is to find out your experiences and perceptions about the Health Assistants graduating from the Royal Institute of Health Sciences. The findings will provide valuable feedback to the Institute and the faculty in further improving the quality of training.

I am sure that with your extensive experiences and interactions with them, you are the right persons to provide a clear picture of their knowledge, attitudes and competencies in their work. For the purpose of this survey, we are looking at HAs and ANMs who have passed out in the last 5 years. Therefore, when filling in the questionnaire, please focus your opinions or perceptions on recent graduates as a group.

Your opinions will be very valuable. However, you have the right to refuse to participate or answer any of the items in the questionnaire that you are not uncomfortable with. No names will be required.

The undersigned will come and collect the forms along with those from the HAs under your district at a specified time agreed on.

Should you require any clarification, please contact the undersigned at this address:

Dr.Chencho Dorjee

RIHS, Thimphu

Phone: 02-322922 (Home), 02-321212, 322031 (Office) Fax-02-323856

Email: cdorji88@yahoo.com

Thank you for your time and co-operation.

With best wishes,

Yours sincerely,

Dr.Chencho Dorjee
M.Sc Student
Faculty of Medicine
Chulalongkorn University
Bangkok, Thailand.

Appendix-C: Graduates' questionnaire

Section A

I. Personal Information

1. Your Age.....Years
2. Your Gender 1.Male
 2.Female
3. Graduation Year
4. You decided to join RIHS: 1. On your own choice
 2. Because of family pressure
 3. Because of friends
 4. Because there was no other choice

II. General

1. What did you like most about your training in RIHS?
2. What were the weaknesses or the worst aspects of your training?
3. What suggestion would you give to make improvements in the training?

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4 Is there anything else you wish to add regarding any aspect of your training

5. The effect of my training experience at RIHS, on my ability to assume a responsible, professional role in society has been

1. Very Strong 2. Strong 3. Moderate 4. Weak

6. As you now review your training at RIHS, how would you rate your total experience?

1. Very Satisfied 2. Satisfied 3. Somewhat satisfied 4. Not at all satisfied

7. Would you recommend this training to any of your close friends or relatives?

1. Yes 2. No 3. Not Sure

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Section B. (Graduates and Supervisors)

To answer, please mark an 'X' in the relevant column that most accurately reflect your perceptions of importance, adequacy of training and the level of your preparedness/competency in the following tasks at the time of graduating from RIHS.

Importance of task

- 1-Not Important at all
- 2-Somewhat Unimportant
- 3-Somewhat Important
- 4-Important
- 5-Very Important

Adequacy of training

- 1-Not Adequate at all
- 2-Somewhat Inadequate
- 3-Somewhat Adequate
- 4-Adequate
- 5-More than adequate

Preparedness/Competency

- 1-Very Unprepared/incompetent (cannot do it at all)
- 2-Somewhat Unprepared (can do only with some help)
- 3-Somewhat Prepared (can do it on my own but with some difficulty)
- 4-Prepared/Competent(can do it own my own)
- 5-Very prepared/competent (can do it confidently)

Key Competency Tasks		Importance					Adequacy					Preparedness				
		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
I. Treatment of common diseases and injuries																
Trt1	Take a relevant clinical history															
Trt2	Assess Vital signs (TPR,BP)															
Trt3	Look for pallor, jaundice, pedal oedema															
Trt4	Perform Haemoglobin estimation															
Trt5	Perform urine for Albumin and Sugar															
Trt6	Manage a case of Dysentery															
Trt7	Manage a child with Diarrhoea															
Trt8	Manage a child with Pneumonia															
Trt9	Manage a case of Anaphylactic Shock															
Trt10	Suture a simple cut injury															
II. Provision of Essential Drugs																
Ed1	Administer drugs by different routes (IV, IM, Oral)															
Ed2	Calculate the amount of fluid required for a child with some dehydration															

		Importance					Adequacy					Preparedness				
		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Ed3	Prepare ORS solution															
Ed4	Maintain inventory and proper storage of drugs, vaccines and equipment															
III. Food and Nutrition																
Fan1	Use the Road to Health Card to monitor growth															
Fan2	Recognize the different grades of malnutrition															
Fan3	Manage common types of malnutrition															
Fan4	Demonstrate the preparation of a nutritious diet(HCCM) to a mother of a malnourished child															
IV. Immunization																
Imm1	Conduct an immunization session															
Imm2	Detect any contraindication to immunization															
Imm3	Manage adverse reactions to vaccine															
Imm4	Maintain the cold chain															
Imm5	Maintain aseptic precautions (sterilization)															
V. Maternal Health and Family Planning (Reproductive Health)																
Rh1	Detect abnormal presentations															
Rh2	Auscultate the fetal heart sound															
Rh3	Identify multiple pregnancy															
Rh4	Maintain and interpret a partograph															
Rh5	Deliver the placenta by controlled cord traction															
Rh6	Perineal lacerations-prevention and suture															
Rh7	Recognize post partum haemorrhage															
Rh8	Manage umbilical infections															

		Importance					Adequacy					Preparedness				
		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Rh9	Recognize signs and symptoms of puerperal sepsis															
Rh10	Give counseling to a couple wishing to adopt family planning															
Rh11	Take a PAP smear and send to the district hospital															
VI. Water Supply and Basic Sanitation																
Rwss1	Assess community health problems related to water and sanitation															
Rwss2	Assist community to identify and protect their water source															
Rwss3	Collect and Send water samples for testing															
Rwss4	Investigate outbreak of water related diseases															
Rwss5	Institute appropriate management and control measures in case of an outbreak															
VII. Prevention and Control of Endemic Diseases																
Prev1	Identify and refer suspected TB cases															
Prev2	Do salt analysis for iodine content															
Prev3	Carry out malaria control activities															
Prev4	Carry out community based rehabilitation activities															
Prev5	Recognize Mental Health problems in the community															
VIII. Health Education on Prevention and Promotion																
He1	Give health education on prevention of common diseases to patients, families and community															
He2	Promotion of healthy life style activities															
He3	Give health education on HIV/AIDS and STIs															
He4	Give education of personal and environmental hygiene															
He5	Organize a health exhibition in the BHU															

		Importance					Adequacy					Preparedness				
		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
A. Administration and Management																
Adm1	Plan and implement BHU activities															
Adm2	Conduct annual household survey															
Adm3	Analyze, Interpret, utilize and display the information															
Adm4	Maintain accurate records and send the reports to the DHSO regularly															
Adm5	Training and supervision of VHW															
Adm6	Supervision of BHU activities															
B. Community Participation																
Cp1	Organize a village meeting on health issues															
Cp2	Implement model village activities															
Cp3	Involve the community in planning and implementing a water supply scheme															
Cp4	Get community support in the maintenance of the BHU															
C. Intersectoral collaboration																
Isc1	Plan health activities in the school with the headmaster and school health in charge															
Isc2	Talk to the agriculture extension worker (AEW) about the best crop and vegetable that can be grown in the area.															
Isc3	Getting the Forest Range Officer to approve timber for an ORC construction															
Isc4	Getting the District Engineer to make an estimate for a water supply scheme															

Section C.

As you now review your entire training experience at RIHS, how do you feel about these aspects of your training?

SA-Strongly Agree

A-Agree

N-Neutral

DA-Disagree

SD-Strongly Disagree

	Statements	SA	A	N	DA	SD
C1	The course helped me to develop my ability to work as a team member					
C2	The course developed my problem solving skill					
C3	I feel confident about dealing with patients					
C4	The course helped me to develop my ability to plan my work					
C5	The academic environment was challenging					
C6	The duration of the training was SHORT to be adequately prepared					
C7	The theoretical aspects of the training were MORE than required					
C8	The practical aspects of the training were INADEQUATE					
C9	The contents covered all areas necessary to perform my job as a health assistant					
C10	The classroom teachings were excellent					
C11	Teaching staff worked hard to make their subjects interesting					
C12	Teaching staff gave helpful feedback on how I were doing					
C13	Teaching staff showed concerns about the difficulties students may be having					
C14	Teaching staff were more interested in testing what you have memorized than what you have understood					
C15	The library resources were adequate					
C16	The access to the library was NOT enough					
C17	The assessment/examination system was fair					

Thank you for your time and valuable contributions

Appendix-D: Supervisors' questionnaire

Section A.

I Personal Information

1. Your designation: 1. DMO 2. DHSO
2. Place of posting.....
3. No. of years in service:.....
4. No. of years in present place.....

II General

1. In your opinion what are the strengths of the HA training?
2. What are the weaknesses that you see in the current HA training?
3. What would you recommend to improve the HA training program?
4. Is there anything else you wish to add regarding any aspect of the HA training?

Section B.

To answer, please mark an 'X' in the relevant column that most accurately reflect your perceptions of importance, adequacy of training and the level of their preparedness/competency of recent HA graduates in the following tasks. (same questionnaire as graduates)

Section C.

From your experience and interactions with recent HA graduates, kindly comment on the following statements with regard to the HA training program and about the graduates in general.

SA-Strongly Agree A-Agree N-Neutral DA-Disagree SD-Strongly Disagree

	Statements	SA	A	N	DA	SD
C1	The health assistants are meeting the health care needs of the community					
C2	There is the need for the HA training to be continued.					
C3	The new graduates should be attached with a senior for 6 months before assuming independent responsibilities					
C4	The health assistants graduating from the institute are competent enough to practice on their own.					
C5	The training duration should be increased					
C6	The students should spend more time in the community than at present					
C7	I am NOT satisfied with the performances of the graduates					
C8	The graduates are motivated to carry out their responsibilities					
C9	The graduates have NO interest to learn					
C10	The graduates are good in solving problems related to their work					
C11	The graduates are NOT capable of making decisions					
C12	The graduates can communicate well with their patients, families, community and other members of the health team					
C13	The graduates have the leadership skills to lead the community in health matters					
C14	The graduates have the requisite clinical skills to provide good care to their patients					
C15	The graduates have the spirit of teamwork					
C16	The graduates have the right attitude for their work					

Thank you for your time and valuable contributions

VITAE

Chencho Dorjee was born in Bumthang, Bhutan on 10th July 1964. He did his schooling from St. Joseph's College, Darjeeling, India and Pre University from Sherubtse College in Bhutan.

He got his medical degree from the Christian Medical College, University of Madras, India and joined the Health Department, Royal Government of Bhutan in 1989. Since then, he has worked in numerous places in Bhutan as a medical officer and district medical officer. In 2000, he was transferred to the Royal Institute of Health Sciences as a lecturer.

He has a Diploma in STD from the Faculty of Medicine, Prince of Songkla University and the Thai Medical Society for the Study of Sexually Transmitted Diseases.

He joined the Master Degree Program in Health Development in 2003 specializing in Health Professions Education. He is sponsored by the Royal Government of Bhutan.

He is currently the Director of the Royal Institute of Health Sciences in Thimphu, Bhutan.



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