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ON OCCUPATIONAL HEALTH AND SAFETY

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**Health
promotion
at work**

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Health promotion at work

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Editor-in-Chief

Suvi Lehtinen

Editor

Inkeri Haataja

Linguistic Editing

Delingua Oy

Layout

Kirjapaino Uusimaa, Studio

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² EPOS Health Management
³ MCA-Mongolia Health Project PIU
⁴ Ministry of Health of Mongolia
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Finnish Institute of
Occupational Health





Michael Marmot

Social determinants of health and the workplace

"The poor health of the poor, the social gradient in health within countries, and the marked health inequities between countries are caused by the unequal distribution of power, income, goods, and services, globally and nationally, the consequent unfairness in the immediate, visible circumstances of people's lives – their access to health care, schools, and education, their conditions of work and leisure, their homes, communities, towns, or cities – and their chances of leading a flourishing life. This unequal distribution of health-damaging experiences is not in any sense a 'natural' phenomenon but is the result of a toxic combination of poor social policies and programmes, unfair economic arrangements, and bad politics. Together, the structural determinants and conditions of daily life constitute the social determinants of health and are responsible for a major part of health inequities between and within countries."

WHO Commission on Social Determinants of Health – final report



Peter Goldblatt

For many years, the social, political and economic situation in much of Africa provided little reassurance that the health inequities between the continent and the rest of the world, as well as those within and between countries, would improve. But there are signs, over the last decade, of progress in all these dimensions of inequity. Much will need to be done, by countries, communities and civil society within Africa and by the international community at large, to ensure that sustainable reductions in inequities are achieved, that the benefits of economic growth are experienced by all, and that public health lessons are learnt both from Africa's own experiences and from the impact of rapid economic growth elsewhere in the world.

According to the 2012 World Health Statistics, in 13 countries in Africa life expectancy at birth in 2009 was 50 years or less – all in sub-Saharan Africa – while it was over 70 in five countries on the African Mediterranean coast. A massive health divide. Nonetheless this represents a major improvement compared to the position in 2000, when the life expectancy figure was below 50 in 22 countries across the continent. As a result, the range between countries was four years less in 2009 than in 2000, and average life expectancy for the WHO Afro Region rose by four years – a bigger increase than in any other region.

In most countries in Asia, life expectancy has steadily improved since 1990, so that even in countries with the lowest levels of life expectancy in 1990, it exceeded 60 years in 2009. Many countries on the Western Pacific coast have among the longest life expectancy in the world. Significant inequities in both health and social conditions remain within and between countries in Asia.

The rate of GDP growth in Asia has been high throughout this period, and it has been increasing steadily, from an initially low level, in much of the African continent. As a result, the average growth rate in Africa is predicted to overtake that in Asia during the current decade; the Arab spring has swept through North Africa; and many of the wars in the south have come to an end. These are all signs of hope – but we still have a long way to go to reach the conditions needed to achieve health equity in Africa. The prospects for countries in Asia are extremely variable, with some continuing to grow and others stagnating. Correspondingly, some key indicators continue to place the WHO Afro Region and parts of Asia in a poor position, as regards drinking water quality, sanitation, universal health service coverage, rates of mortality, malaria, TB and HIV/AIDS. All of these have a greater impact on people and communities further down the social gradient and on countries poorly equipped to carry the burden or address the root causes.

For the future, a real concern must be the increase in non-communicable diseases (NCD) and their social distribution. In Asia, NCD mortality rates far exceed those of communicable diseases. The WHO African Region already has the highest NCD mortality rates in the world, particularly from CVD, and the highest prevalence of raised blood pressure in adults. As we have already seen in some countries in Africa and Asia, as economic well-being improves and Western diets and smoking habits spread, so these behaviours cease to be those of the elite only, and spread to those who are less educated – creating new social gradients. In conquering communicable diseases we need to ensure that we also address the social conditions that give rise to these and to NCDs. Work is a big part of this. Work provides income, a purpose in life, self-esteem, social relations – but it can also be degrading, dehumanizing, dangerous, and damaging to health in various ways. Addressing social determinants of health will entail, among other things, addressing the crucial role of work in damaging or enhancing health.

Professor Sir Michael Marmot
Institute of Health Equity
UCL
Email: m.marmot@ucl.ac.uk

Professor Peter Goldblatt



Some participants of the third KM (knowledge management) practise yoga together in the morning. Other groups went jogging or participated in an aerobic dance session.

Pornchai Sithisarankul, Sarunya Hengpraprom, Thailand

Workplace health promotion in Thailand

Background

The Thai Health Promotion Foundation was founded more than a decade ago and receives its budget through an allocation or sin tax of 2% on alcohol and tobacco. The foundation provides funding for health promotion projects and activities via several approaches: issues, settings, areas and specific groups (1). The settings for health promotion are workplaces, schools, universities, hospitals, communities, etc. We categorize workplaces into 3 groups – government, state enterprise and private. In Thailand, there are 3 levels of government organizations: central, regional, and local (including Bangkok Metropolitan Administration and Pattaya City).

Among private organizations, there have been various health promotion projects/activities usually among large enterprises. Among these are “MS-QWL” and “Happy 8”. MS-QWL stands for “management system of quality of work life”. It was initiated by a group of experts in various fields (management, quality, and occupational medicine, health and health promotion) with support from the Human Capacity Building Institute (HCBI) (2). HCBI is a daughter organization

under the Federation of Thai Industries (FTI). Happy 8 was conceptualized and proposed by an occupational medicine physician who later joined and worked for the Foundation. Happy 8 consists of happy body, happy heart, happy relax, happy brain, happy soul, happy money, happy family, and happy society (3). Happy 8 proposed the change in phrasing from “workplace health promotion” to “happy workplace” which is easier to comprehend for laymen.

After the financial crisis in 1997–1998, most state enterprises were modified or transformed into public companies and behave increasingly like private companies and less like government organizations. Most of them have initiated some health promotion projects/activities.

Among government organizations, the Royal Thai Army and the Royal Thai Armed Forces conducted health promotion projects and activities at various levels within their units. Our group conducted some research on healthy workplace indicators in Thailand and was the first to initiate a health promotion research and campaign among government civil organizations (4–5).



Professor Pornchai Sithisarankul was making the closing remark on the closing day of the project (9 November 2010). He summarized the project, thanked the 16 participating organizations, and encouraged them to continue workplace health promotion projects/activities.

Underlying values and principles

Civil servants and government employees are generally known as one of the most difficult group to engage in health promotion. On the contrary, they consume highest health care cost compared to general population (under Universal Coverage Scheme) and other workers (under Social Security Scheme). If we can urge them to initiate health promotion and comprehend key success factors, their engagement in health promotion will be more feasible.

Our group's work in workplace health promotion

A. The research –

1. **Research design:** Quantitative and qualitative research.
2. **Methods:** The research consisted of 2 parts – quantitative and qualitative. Quantitative research was conducted and reported previously (6–9). Data analyses showed several organizations with high self-assessment scores in health promotion. Qualitative research was conducted by asking heads of department and personnel responsible for



Group photo taken on the closing day of the project (9 November 2010). The top management of the 16 participating organizations and our team together for this group photo.



The booklets that our group distributed to all participants and the media on the closing day (9 November 2010). Each booklet contains a summary of our project (Workplace health promotion among government organizations). We made them easy to read and comprehend.

health promotion in these organizations to be key informants in the in-depth interviews and focus group discussions. Documents and meeting minutes regarding health promotion were also reviewed. These were done in order to have a greater understanding of factors determining or related to good health promotion scores.

3. **Study population:** Qualitative research was done in 4 central organizations, 4 regional organizations, 7 local organizations, and 3 Bangkok Metropolitan districts.
4. **Results:** Most government organizations did not have health promotion policies and programmes in place, but they did have some health promotion projects and activities. The problems encountered were: not enough space for health promotion activities especially exercise, not enough knowledge, not enough personnel responsible

for health, workload too great, not getting enough policy support, etc. Most organizations had enough budgets for health promotion activities. Unfortunately, local administrative organizations allocated most of their budget to infrastructure and road construction, not to health and health promotion. One of our remarks is that almost all organizations did not evaluate their projects and activities.

5. **Conclusion:** After qualitative research data analyses, including the results from the first quantitative phase, we synthesized some recommendations that seemed appropriate to enhance health promotion in government organizations (10).

B. The campaign –

Our group approached government organizations of all levels: central, regional, and local organizations including Bangkok Metro-



Cartoon of Happy8.

The webpage of MS-QWL.



politan and Pattaya City. In every organization we would find “a few good men” to work with. We enhanced capacity building and knowledge management concerning health promotion among them, and hoped that we would be able to harvest the “key success factors”. We also hoped they could continue health promotion in their organizations and make them healthy and sustainable settings. Results: 16 organizations were engaged as planned. These 16 organizations were:

Central

1. Office of Civil Servants
2. Office of Human Right Committee
3. Ministry of Culture
4. Ministry of Social Development and Human Security

Regional

5. Angthong Province
6. Chonburi Province
7. Saraburi Province

Local

8. Dusit District, Bangkok
9. Klongtoey District, Bangkok
10. Talingshun District, Bangkok
11. Provincial Office of Chacherngsao
12. Provincial Office of Samutsakorn
13. Angthong Municipality, Angthong

14. Kangkoy Municipality, Saraburi
15. Nongprue Municipality, Chonburi
16. Pattaya City, Chonburi

Our key working steps are “outside-in, inside-out” (11):

1. Approach top managers of organizations to persuade them to join (we are outsiders who are going in)
2. Identify “a few good men” in that organization, get acquainted with them
3. Organizational diagnoses – their current health problems and their needs
4. Choose some issues to tackle by appropriate activities
5. Along the way, knowledge management and sharing their experiences with other organizations’ few good men, and some previous experiences from other private/military/state enterprise organizations
6. At the end of our programme, evaluate and encourage these few good men to continue health promotion in their organizations, and hopefully they will help other organizations (they are insiders who are going out)
7. During and at the end of the programme, we will try to enhance gov-

ernment policies and rules/regulations on health promotion.

Other groups’ work on workplace health promotion

Similar to our group, most workplace health promotion projects and activities, especially those funded by the Thai Health Promotion Foundation, consider health in a broad sense covering physical, mental, social and spiritual well-being.

Health promotion activities cover a wide range of topics, including exercise, increased physical activities, proper nutrition, weight reduction, women health, maternal and child health, day care centre services, room for lactation and milk collection/ frozen/ storage till the end of workday, accident reduction, stress management, conflict management, religious activities, meditation, family accounting and debt reduction, training for other work to increase income, blood donation, etc.

The strategies used, as proposed by the First International Conference on Health Promotion held in Ottawa, were healthy public policy, supportive and healthy environment, community participation, personal skills development, and the reorganization of health services (12). In addition, our group added 2 more strategies based on the Thai and Buddhist approach. First was the idea of “giving” or “sharing” or “being a giver”. Giving usually means we will have less after giving, but we can give some things without reducing of what we have. These are, for instance, a smile, love, happiness, knowledge, etc. What to give had a wide range: blood, money, stuffs, knowledge, hospitality, help, smile, love, happiness and support. Second was the idea of “total health” – covering all 4 aspects of well-being and individuals as well as groups of people in their organizations.

In 2008, the OCSC (the Office of the Civil Service Commission) launched the new Civil Service Act, B.E. 2551 (2008) (13). Section 34 of this Act states that “The organization of civil officials shall be undertaken with a view to the result-based outcome, efficiency and good value in the discharge of State functions, and to make officials perform their duties with quality and virtuously and have a good quality of life.” We viewed these aspects – quality of life, health promotion, and well-being – to be under the same line of thought, and hope to further enhance health promotion in Thailand.

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Pornchai Sithisarankul Sarunya Hengpraprom

Department of Preventive and Social Medicine

Faculty of Medicine

Chulalongkorn University

Bangkok, 10330

Thailand

Email: psithisarankul@gmail.com



Norhayati Kassim, Brunei

Healthy workplace initiatives in Brunei Darussalam

Introduction

Brunei Darussalam is a small country on the island of Borneo in the Western Pacific Region with a population of approximately 400,000. Non-communicable diseases (NCDs) such as cancer, coronary heart disease, cerebrovascular diseases and diabetes mellitus have been major causes of mortality and morbidity in Brunei Darussalam over the last few decades (1). To address this issue, the Ministry of Health (MoH) has undertaken several actions such as developing relevant policies and regulatory mechanisms; implementing fiscal measures; undertaking preventive measures particularly, education and information interventions; and ensuring clinical interventions in line with WHO recommendations.

The Health Promotion Centre (HPC) of the Ministry of Health is the lead agency responsible for NCD preventive actions and the promotion of a healthy lifestyle. Established in 2008, its mission is to empower people towards healthy living, in line with the Ministry's Health Strategy 'Vision 2035 - Together towards a Healthy Nation'. The Centre employs 46 people including 4 doctors, 12 nurses, 10 allied health professionals including nutritionists, and other support staff. It is responsible for the coordination and the monitoring of several objectives and initiatives set out in the Health Promotion Blueprint 2011-2015 (2), as well as many different health promotion activities throughout the country. The Centre also provides specific facilities and services and also serves as a resource centre to enable the public to acquire information and tools to improve their health.

Workplaces as a healthy setting in Brunei Darussalam

The settings approach to health promotion has been advocated by WHO and integrates action across risk factors in a holistic and multidisciplinary manner. One of the objectives identified in the Blueprint is to promote healthy settings - this includes the development of healthy



Health screening for government employees

workplace programmes in both the government and the private sector.

A *healthy workplace* is defined as “a place where everyone works together to achieve an agreed vision for the health and well-being of workers and the surrounding community”. Furthermore, it provides all members of the workforce with physical, psychological, social and organizational conditions that protect and promote health and safety and confers many benefits to both employees and the organization (3).

Currently, healthy workplaces in Brunei Darussalam, as defined above, are very much in the infancy stages. Most of the health activities related to workers or workplaces presently are health protection activities, i.e. occupational health and safety initiatives, either coordinated by the Occupational Health Division, Department of Health Services or conducted by the few organizations, mostly in the private sector, which have their own Health and Safety Officers and programmes. However, as a result of a major programme to raise awareness on NCD risk factors and measures for prevention among civil service employees recently (see below), there has been a slow but gradual realization amongst organizations and employees, in both the government and private sectors, of the importance of promoting not only safety meas-

ures, but also healthy lifestyles in the workplace. The latter types of activities are now growing in demand; these are usually coordinated by HPC and implemented by the Centre’s nurses and various allied health professionals.

The Integrated Health Screening and Health Promotion Programme for Civil Service Employees 2007-2011

The labour force in Brunei in 2010 was estimated at 198,800 (4). Of this, approximately, 25% are in the civil service or government sector (excluding uniformed personnel working in the security or military services) (5). On 5 September 2007, a major programme was launched by MoH to assess the health status of civil servants in Brunei Darussalam, i.e. the Integrated Health Screening and Health Promotion (IHSHP) Programme for Civil Service Employees. The primary goal of this programme was to identify, at an early stage, participants with risk factors for NCDs and refer them for necessary actions. It was officiated by His Royal Highness Pengiran Muda Mahkota Pengiran Duli Yang Maha Mulia Paduka Seri Baginda Sultan Haji Hassanal Bolkiah Mui’zzaddin Waddaulah, Crown Prince and Senior Minister at the Prime Minister’s Of-

fice. The programme was coordinated and run by a dedicated team of nurses and health personnel, which later came under the HPC’s management in July 2009. It was completed on 30 July 2011 with a total of 21,547 (approximately 46%) civil servants from all 12 government ministries screened.

Preliminary results of the IHSHP Programme for Civil Service Employees in 2010 showed that a staggering 38% of the employees had at least one health risk factor that placed them at increased risk of developing chronic lifestyle-related diseases, with more than 60% of them being either overweight or obese. Many of these risk factors were attributed to employees’ lifestyles including unhealthy dietary habits, physical inactivity, tobacco use and poor stress management. A complete analysis and report of the programme is still in the process of finalization at present.

Consequently, a Healthy Workplace Symposium was organized for all Government Ministries on 3–5 May 2010, which was also officiated by the Crown Prince. The participants, who were civil service employees from various levels, took note of the health data from the IHSHP Programme and based on empirical evidence of effectiveness of workplace health promotion, recommended various actions to improve the

health of the Civil Service employees, including developing healthy workplace initiatives in the various Government Ministries and Departments at all levels. These would incorporate formulating health-promoting workplace policies, ensuring supportive organizational and physical environment for healthy workplace and implementing workplace programmes to promote healthy lifestyles.

As civil service employees are considered to be a specific population group, the healthy workplace approach is appropriate for addressing these problems holistically. Like other health-promoting settings, such as schools, cities, hospitals and marketplaces, the workplace is a strategic setting that can have a very positive impact on the health and well-being of workers, their families, the surrounding communities and society.

Subsequent actions on healthy workplace initiatives

Following the IHSH Programme's implementation, formally-organized healthy workplace initiatives have yet to be established among the various government departments. However, various types of health promotion activities to promote healthy lifestyles have been increasingly requested from HPC by different organizations in both the public and private sectors. These initiatives comprised a range of activities such as:

- Consultations with and advice on healthy workplace initiatives to representatives from the organization's management;
- Specific health talks on healthy diet, physical activity, weight loss and management, smoking cessation and managing stress;
- Basic health screening comprising past medical and family history, smoking status, weight, body mass index (BMI), blood pressure and random/fasting blood glucose; and
- Exhibitions on specific health issues and/or healthy lifestyles together with relevant leaflets for reinforcement.

Future directions

Brunei Darussalam, like many other countries worldwide is facing the challenges of an increasing NCD burden. For a small population, strategies to address this issue will need to be comprehensive, integrated and holistic to be able to reach the masses. Healthy work-

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place programmes have also been considered as one of the best-buy options by WHO for the prevention and control of NCDs. Following the IHSH Programme, awareness on the health status of employees, benefits of workplace health programmes and a gradual interest among employers to incorporate health and well-being into their workplaces have led to an increase in the demand for healthy workplace initiatives in both the public and private sectors. However, much more effort and resources, particularly, expertise, needs to be invested by MoH and the different organizations to ensure that such initiatives are well-planned; can be implemented, supported and sustained in future. There is also a need for programme leadership, championing and governance, as well as a change in organizations' mindsets, culture,

policies, and environments so as to be able to establish successful initiatives. It is hoped that by investing in such initiatives will not only help address the rising NCD burden in Brunei Darussalam, but also help achieve the country's vision to have a productive nation and economic sustainability in the long run.

Dr. Norhayati Kassim, MB ChB, MMed PHM, MSc HP & HE

Senior Medical Officer & Head
Health Promotion Centre
Ministry of Health
Commonwealth Drive
Bandar Seri Begawan BB 3910
Brunei Darussalam
Email: norhayati.kassim@moh.gov.bn



Health exhibition

Health promotion in the workplace and occupational health nursing in Thailand

The aim of this article is to review the occupational health nursing and describe health promotion in the workplace in Thailand. Moving towards industrialization, the Thai workforce is facing many work-related health problems caused by work and non-work health hazards. Many kinds of health problems can be solved by health promotion and protection measures. The occupational health services (OHS) in Thailand now provide an occupational and safety service to promote the health and quality of life of the workers, which in turn, has an impact on the corporate benefit. For decades, health services provided by nurses in the workplace have focused mainly on treatment rather than disease prevention and health promotion. After the health care reform, the OHS were not only carried out by governmental sectors, but also by private companies and NGOs in which occupational health nurses play an important role in the occupational safety, health and environment team.

The role and expertise of the occupational health nurses is changing to meet the needs of businesses and industries. Occupational health nursing in Thailand is currently undergoing intensive development in education, practice, research, and legislation that focuses more on health promotion than the last two decades. The education and practices of the occupational health nurses developed over the past decade ensure that to-

day's occupational health nurses have the necessary skills to work as an autonomous practitioner or within the multidisciplinary team. Occupational health nurses in Thailand work in a variety of settings. In private sector, most of them are employed in companies as part-time nurses, whereas there are only a few full-time nurses. In government sector, nurses are working under the Ministry of Public Health; in the Provincial/General hospitals, District hospitals, and health promoting hospitals. They can work in a multidisciplinary team, or in a nurse-led occupational health service within the guidelines of the occupational health nursing standard of Thailand and the support of Thailand Occupational Health Nursing Association and Thailand Nursing and Midwifery Council.

Working population and health problems

With the very rapid economic growth that has occurred in Thailand over the past three decades, this has transformed the economies of the country and has created employment opportunities for a large number of workers. Trends in workforce composition have shifted from agriculture to non-agriculture. In 1960, a total of 82% of the workforce were occupied in agriculture. In 1980, just before the pace of Thailand's economic transformation took off, over 70% of workers were still engaged in agriculture, whereas by 2012 this figure had fallen to around 35% (1). As the number of agricultural workers fell, employment in the Thai industrial sector from 1980 to 2008 rose from 11% to 24%. Over the same 28-year period, the service sector's share of the workforce grew from 19% to 41% (1).

According to the Office of National Statistics, the population of Thailand at the end of 2011 was approximately 67.4 million and the labour force numbered 38.9 million, engaging in a wide variety of economic activities, and experiencing an equally wide range of working conditions. The agricultural sector accounted for 17 million, the non-agricultural sector represented 22.2 million. The numbers by industry are broken down as follows: wholesale and retail trade accounted for 5.9 million, manufacturing 5.1 million, hotels and restaurants 2.7 million, government services 1.4 million, education 1.7 million, real estate and financial services 1 million, and others 4.9 million (2). An increasing number of workers in the workplace are faced with occupational diseases and other illnesses. Occupational diseases and other illnesses continue to be a major health burden. As the health promotion and disease prevention practice was at a slow pace, work organization, workload, autonomy and job insecurity have not been addressed. The health of the workers is also affected by non-work related factors, such as travelling accidents, food borne disease, AIDS,

Short training course for navy nurses in 2005





Masters students practise in a factory (discussion with safety staff and engineer staff).

obesity, hypertension, coronary heart disease and the consequences of smoking as well as mental health problems. This is evidenced by the rise in the percentage of the sick workers claiming for reimbursement of curative care expenses. (3) However, the health status and quality of life of the workers are relatively good in workplaces of both private and public organizations which have health promotion programmes in place.

Health promotion in the workplaces in Thailand

The development of health promotion in the workplace has provided many workers with health and safety benefits and organizational benefits which have an impact on sustainable social and economic development. The Department of Labour Protection and Welfare, Ministry of Labour has set up the third OSH master plan (2012–2016) (4) and the national agenda on “Correct Health and Safety for Workers” with the aim of developing OSH in Thailand. One of the strategic issues is to promote and encourage establishments to implement a sustainable Occupational Safety and Health (OSH) management system. As a result, the Ministry of Labour (MOL) of Thailand places special emphasis on the safety and health protection of workers, and has been strengthening the National OSH System to provide quality occupation-

al safety and health services to all workers. The recent achievements and challenges in occupational safety and health included a wide range of activities at both policy and workplace levels, such as the development of the “Healthy Workplace” project in the year 2000 (5). Launched by the Bureau of Occupational and Environmental Diseases at the Ministry of Public Health, formerly the Division of Occupational Health, the “Healthy Workplace” project was aimed to promote workers’ safety and health at all establishments throughout the country. The Healthy Workplace project was based on the WHO Healthy Work approach. The objectives of the project were: 1) to raise awareness of workers’ health promotion in all types of industry, 2) to develop partnerships and participation in continuous improvement in workplaces, and 3) to develop safe and healthy work environments. Implementation of this project required collaboration between all relevant agencies and networking both inside and outside the Ministry of Public Health. The ultimate goal of this project was to develop a clean, safe, non-hazardous, and lively workplace. The gold, silver, and bronze certificates were issued by the Department of Health and the governor of each province awarded the certificates to those enterprises that were able to achieve the given criteria. Not long after its first launch,

other organizations such as the Thai Health Promotion Foundation, and the National Health Security Office began to launch similar health promotion programmes in the workplace focusing in factories.

The National Health Security Office (ThaiHealth) is an independent state agency set up according to the Health Promotion Act 2000. Its mission is to promote well-being in all 4 dimensions: physical, mental, spiritual and social, while working with a wide range of multi-sectoral partners. The Industrial Council of Thailand is an organization that also supports health promotion in the workplace. “Quality of Work Life”, the programme launched by the Industrial Council of Thailand for the period 2004–present, aims to develop the management system of the quality of work life (MS-QWL), recommend health promotion standards for workplaces, and establish a set of health promotion indicators. Another outstanding programme was the “Healthy Workplace” project initiated by the Department of Health, Ministry of Public Health and Thai Health Foundation. Happy Workplace aimed to make people in the workplace happy. It was believed that “people” were the most important assets of organizations. If people were happy working, they would work effectively and their organizations would be able to grow sustainably. Happy Work-



Priority setting with the occupational, safety and environment team



Walk-through survey with navy nurse on short training course

place has 8 components comprising: Happy Body, Happy Heart, Happy Soul, Happy Relax, Happy Brain, Happy Money, Happy Family and Happy Society. The programme also required workplaces to set policies and professional guidelines for practice such as the health promotion guidelines for factory nurses. The impact of the Happy Workplace Programme can be seen from the fact that nurses and safety personnel in the public sector and in the factories were responsible for workforce health promotion initiatives that moved toward a more comprehensive approach, which acknowledged the combined influence of personal, environmental, organizational, community and societal factors on employee well-being. Workplace health promotion for individual and groups of workers was accomplished through fitness programmes, blood pressure control, cholesterol management, worksite nutrition and weight management, and tobacco control and cessation. As a result, the health behaviour of workers had changed so much so that they began to stop smoking and exercise regularly. This protected them from hypertension and coronary heart disease.

Health promotion in the workplace in Thailand had been initiated by some international corporate companies before the Bureau of Occupational and Environmental Diseases took action in 2000. After that, the Industrial Council of Thailand launched MS-QWL, and the Bureau of Occupational and Environmental Diseases, and the Department of Health introduced the Happy

Workplace programme. Nowadays, many organizations collaborate to promote the programme, resulting in successful implementation in many enterprises. At present, more than a hundred factories have participated.

OSH Laws and Regulations under the administration of Department of Labour Protection and Welfare, Ministry of Labour

The Thai Occupational Safety, Health and Environment Act (the Thai OSH Act) was promulgated in 2011. This OSH Act requires all types of establishments and agencies to work towards the comprehensive protection of the Thai workforce in OSH matters. There will be an OSH Fund to serve as funding source for OSH operations and activities such as OSH promotion campaigns/projects, OSH research and development, and loans for the OSH improvements in establishments. The National Institute for the Promotion of Occupational Safety, Health and Environment was established in July 2012. As an autonomous organization under the supervision of the Minister of Labour, this Institute is responsible for promoting and supporting matters concerning occupational safety, health and environment in Thailand. Provisions related to physicians, nurses, and welfare facilities are specified in the Notification of the Ministry of Labour regarding welfare in connection with health and sanitation of employees (6). The law requires establishments employing 200 to 999 workers to have at least one technical nurse during

working hours and one physician in regular attendance not fewer than 6 hours during regular working hours and a treatment room with one bed. For establishments with 1,000 or more workers, the law requires at least two technical nurses and one physician in regular attendance not fewer than 12 hours during regular working hours and a treatment room with two beds. The notification placed the emphasis on first aid and primary care for injured or sick workers at the workplace without specifying the function of the nurse working in an occupational health setting. The law only requires essential medical equipment for treatment, and referral of patients to hospitals.

Occupational health nursing education

For Bachelor degree programmes, there is no occupational health nursing curriculum. A masters degree programme started in 2002–2003, by two faculties of nursing, followed by one university in 2007, currently producing more than 100 Masters of Nursing Science in Occupational Health Nursing. Ph.D level has no specific curriculum, but Ph.D students in nursing or public health nursing can take some courses in occupational health, safety, occupational medicine from the universities that teach these subjects and complete their dissertation in occupational health nursing.

For training courses, from 1991 to 1994, the Department of Public Health Nursing, Faculty of Public Health, and Mahidol University launched a one-year graduate diplo-

ma of public health curriculum in occupational health nursing for industrial nurses. During 1999–2003, the Department of Public Health Nursing, Faculty of Nursing, Chiang Mai University and the Community Nursing Department, Burapha University launched a 3-month short training course. Since 2004, all three universities and the Department of Occupational and Environmental Medicine, Nopparat Rajathanee Hospital, Bureau of Occupational and Environmental Diseases, Ministry of Public Health launched a 60-hour short training course in occupational health nursing to serve the needs of full-time factory nurses according to the notification of the Department of Labour Protection and Welfare, Ministry of Labour. To date, more than 3,000 nurses undertook training on this course. Since 2010, two universities have launched a Certified Nursing Practitioner in Occupational Health Nursing (4-month training course). For nearly 2 decades, the occupational health nursing education in Thailand has developed, producing occupational health nursing specialists who have the skills to work in the occupational safety, health and work environment teams to meet the needs of the Thai workforce.

Role and function of occupational health nurses

The role and function of occupational health nurses who work in the occupational medicine clinics of regional/general hospitals was launched in 2005 as a result of an agreement signed as a memorandum of understanding (MOU) between the Ministry of Public Health and the Ministry of Labour. The aim of the collaboration is to prevent and control occupational diseases, to develop the diagnostics or curative care of occupational diseases and to develop the network for occupational health at the local level. This collaboration has provided in-house occupational health services 1–2 days/week. These clinics have provided occupational health services including diagnosis and treatment of occupational diseases, health examination, prevention of occupational diseases, occupational health education and network collaboration. (7) In 2010, a total of 1,343 occupational disease cases were identified. Of these, 51.5% were musculoskeletal disorders (MSDs), 16.1% were diseases caused by physical agents, and 16.0% were occupational skin diseases. Apart from the in-house services, 91.9% of the hospitals provided oc-

cupational health services in the workplace including periodic health examinations, occupational health education and work environment surveys. However, only 32.4% of them were able to conduct a monitoring project to control occupational disease based on the context of the enterprises in their areas. In terms of health promotion practice, the Department of Health established a guideline for occupational health nurses working in factories. Due to significant support for these health promotion activities, there are currently a great number of health promotion programmes and activities in the workplace. This is a new trend in Thailand.

Professional organization

The Thai Occupational Health Nursing Society was established in 1986 with the purpose of improving health services and developing a career network for its members. In 2010, it was changed to the Thai Occupational Health Nursing Association. Currently, it has more than 2,000 members including the Occupational Health Nursing Association in the northern region of Thailand. (8)

Trends in occupational health nursing in Thailand

Occupational health nursing in Thailand has been intensively developed in the past 15 years by various organizations. The Ministry of Labour is in the process of passing a law specifying the qualifications and functions of nurses who work in the occupational health setting. This legislation will guarantee that every nurse entering occupational health services has received at least 4 months training in occupational health nursing. Several universities, colleges of nursing, and hospitals are offering training programmes of 60 hours up to 4 months in occupational health nursing and some private universities are in the process of developing a Ph.D degree programme. Occupational health nurses provide health promotion activities, introducing healthy lifestyles and supporting the maintenance of such lifestyles with appropriate information. Counselling and educational measures are also undertaken as part of the occupational health and safety programme.

Conclusion

The journey of occupational health nursing in Thailand over six decades has been one of the significant achievements in occupational health development in Thailand. Us-

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ing the skills of these OHS professionals has made a substantial contribution to the health of the Thai working population. The workplace is acknowledged as a key influence on the health of the public.

Assist. Prof. Dr. Chantana Chantawong

Community Nursing Department
Faculty of Nursing, Burapha University
169 Longhaddbangsaen Road
Tambon Saensuk, Muang District
Chonburi, Thailand 20131
Email: chantana@buu.ac.th



Occupational health nurse interviews an employee.

Zarina bte Jumat, N.B.P. Balalla, Brunei

Occupational health nursing in Brunei Darussalam

Introduction

Occupational health nursing is a subspecialty of public health nursing (1) and comprises a variety of goals working towards maintaining the health of workers. In the USA, occupational health nursing has been described as the application of nursing principles to conserve the health of workers in any occupation by preventing, recognizing and treating illnesses or injuries. According to the Royal College of Nursing, Society of Occupational Health Nursing, UK (RCN SOHN) the main aim of occupational health nursing is to protect workers from workplace health hazards and contribute to and maintain the physical and mental well-being of employees. (2)

As such, an Occupational Health Nurse (OHN) is required to perform multiple tasks – i.e. curative, preventive, promotional and rehabilitative tasks. An OHN is a member of multi-professional team and at the frontline in protecting and promoting the health of the working population. The

OHN creates a link between employer, employees and other professional groups, such as occupational health physicians, occupational health and safety officers, ergonomists, industrial hygienists etc., to reduce work-related illnesses, injuries, sickness absences and make workplaces safer and healthier.

An occupational health nurse is a qualified, registered nurse with additional training in occupational health. Some work in industrial settings and others in government agencies. However, the nature of their duties depends on where they practise as there is wide variation in their job functions from place to place and country to country.

The worker population of Brunei Darussalam in both government and private sectors is 198,800 (3) and occupational health nursing care for the majority of the workforce is provided through the Occupational Health Division of the Ministry of Health. In addition, several industries, in particular oil and gas industries have employed their own occupation-

al health nurses to deliver an occupational health nursing service to their employees (4).

Historical perspective

The Occupational Health Division was established as a unit in 1993 under the Department of Health Services, Ministry of Health Brunei Darussalam with one medical officer with an occupational medicine background to develop programmes and activities related to Occupational Health. Subsequently in 2000 and 2001 two community health nurses joined the division. Currently five (one on overseas training) occupational health nurses are attached to the division and four of them have undergone occupational health nursing training. In addition, one has completed a short course in industrial hygiene overseas.

Role of occupational health nurse (OHN)

The main aim of occupational health nursing is to promote health at work and to protect the health of workers. Occupational health nurses perform diverse activities compared to their counterparts in hospitals and clinics. These activities include health assessment, health surveillance, managing occupational health services, case management and health promotion. Some of the nurses are involved in teaching, clinical supervision, mentoring, audits, research, surveys and investigation (1).

The occupational health nurses working in the Occupational Health Division of the Ministry of Health perform a variety of functions, as outlined below:

1. Employment-related health assessments

Workers' health surveillance is a vital component in any occupational health service. Workers are subject to health assessment in a number of situations, i.e. pre-employment, periodic, return to work, after a prolonged sickness absence, workers' compensation, medical board, etc.

The rationale behind carrying out Pre Employment Health Assessment medical examinations is (i) to ensure client is fit to work in all types of employment in accordance to the physical, psychosocial and environmental demands of the job; (ii) to evaluate existing health conditions with respect to any potential aggravation by job activities and provide baseline data for future refer-

ence; and (iii) to collect and record baseline health status for future comparative purposes particularly in the event of disability, illness or injury.

The purposes of conducting Periodic Health Assessment medical examinations are (i) to ensure that the workers are fit to continue in the current employment; (ii) to ensure that workers' health is not affected by their working conditions, and (iii) to detect any previously unrecognized health problems or undiagnosed health effects for appropriate management, referral and/or monitoring.

Occupational health nurses are at the frontline in this health assessment process. They interview each client that attends the clinic, i.e. employment purposes, periodic health assessments, referred by employers, medical board, workers' compensation, accidents at work, in particular needle stick injuries, etc. OHNs spend a considerable amount of time gathering information related to the patient's occupation, medical condition, social history, family history, hazards at work, personal protective equipment usage etc., using standard medical forms. In addition, supplementary questionnaires are filled in, where necessary, e.g. stress questionnaire and rating. Following this, occupational health nurses also conduct a number of additional investigations, such as hearing (audiometry), lung functions (spirometry), electrocardiography (ECG), vision, and clinic-based blood cholinesterase tests.

2. Activities related to improving the work environment

As occupational health nursing is a preventive specialty, occupational health nurses are required to engage in improving the work environment in order to prevent and control workplace health and safety hazards. They are part of OSH inspectorate team and take an active role in workplace occupational health and safety inspections, audits, risk assessments, etc. On average, in a week, a minimum of 3 fields visits are conducted by the inspectorate team of the Division, where occupational health nurses participate in field activities in turns.

During the work site visits, occupational health nurses carry out following tasks and collect information with regard to the workplace health and safety;

- * participate in discussions with management regarding OHS at workplaces

- * collect information on OSH facilities at workplace
- * conduct walk-through surveys and participate in hazards identification, risk assessment and provide advice on control measures
- * assess and advise on first aid facilities of the workplace
- * assist in environmental monitoring, e.g. noise, dust, lighting, toxic gases, humidity, temperature
- * prepare OHS inspection/audit reports and submit to relevant personnel for necessary action.

3. Investigation of workplace deaths, injuries, work-related diseases and complaints

Occupational health nurses in the Division take part in all investigatory activities conducted by the Division in relation to workplace deaths, injuries, work-related diseases and any complaints on workplace health and safety. They play an important role in this investigatory process.

4. Health promotion and education activities

Occupational health nurses are involved in health education and promotion during preliminary interviews which are carried out prior to physical examination. Occupational health nurses spend some time advising and educating clients on general health matters, such as vaccination, weight reduction, balanced diet, smoking cessation, stress management, and also matters related to occupational health and safety in the workplace, i.e. prevention of workplace hazards, proper use of personal protective equipment, etc.

In addition, occupational health nurses deliver educational health talks on occupational health and safety in workplaces, when requested by employers.

5. Training activities

Trainee nurses (basic, post-basic, nursing assistants) of the College of Nursing (currently Institute of Health Sciences, University of Brunei Darussalam) and the Ministry of Health are attached to the Division for 1–2 weeks, as a requirement of their training curriculum. This creates an opportunity for trainees to get some experience in occupational health nursing. These trainees are supervised and evaluated by the occupational health nurses of the Division.



Occupational health staff carry out workplace assessment.

Table 1. Summary of activities of the Occupational Health Division (2009–2011)

Activity	2011	2010	2009
Employment related health assessment	4308	4385	4578
Worksite visits	233	125	122
Health education and Training sessions on OH&S	39	28	57
OH&S exhibitions	01	01	-

Source – Annual Reports, Occupational Health Division, Ministry of Health (5)

Additionally, the occupational health nurses conduct a respiratory fitness testing training programme for healthcare personnel of the Ministry of Health and also take part in OHS seminars, workshops which are organized by the Division. Furthermore, they deliver awareness lectures on occupational health for their colleagues in other sectors of the Ministry, in the continuing nursing education programme.

6. Data collection and reporting

Occupational health nurses of the Division are involved in collecting data particularly in relation to occupational vaccinations, man-toux test, clinic attendance and nursing activities and preparing monthly and annual statistical reports.

Occupational Health Nursing Manual

The standard operational procedures for above nursing activities have been described step by step in “Occupational Health Nursing manual” which was prepared in 2005.

Table 1 provides a summary of the division’s activities for the period of 2009–2011, where occupational health nurses played their role in executing these services for the public.

A way forward

It is worthwhile mentioning here that occupational health nurses of the Ministry of Health have been nominated to be appointed as authorized “Occupational Health and Safety Inspectors” under the “Workplace

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Safety and Health Order 2009” in Brunei, which will be implemented soon.

Conclusion

The occupational health nursing service is equally as important as any other service sector in healthcare delivery system. Occupational health nurses of the Occupational Health Division of the Ministry of Health carry out diverse functions compared to their colleagues in hospitals and clinics. Their contribution is invaluable for occupational health service which aims to create safe and healthy workplaces. The Division intends to expand its services including occupational health nursing service in order to achieve a wider coverage of occupational health services, in the future.

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Zarina bte Jumat, Staff Nurse
Dr. N.B.P.Balalla, Head

Occupational Health Division
Ministry of Health
Block 2 G5-03
Jalan Ong Sum Ping
Bandar Seri Begawan BA 1311 BSB
Brunei Darussalam
Email: occuphealth@moh.gov.bn

Advancing health in the workplace in Mongolia

The MCA (Millennium Challenge Account)-Mongolia Health Project “Prevention and Control of Major Non-Communicable Diseases and Injuries (NCDIs)” is a 5-year project financed by the Millennium Challenge Corporation. The project’s short-term objective is to increase access to information and services about NCDIs. The project’s long-term objective is to increase the adoption of behaviours which aim to reduce NCDIs among target populations and improve medical treatment and control of NCDIs with the final objective to increase the productive lives of Mongolians. The priorities identified for the project are hypertension, type II diabetes, breast and cervical cancer, smoking and drinking amongst youth, myocardial infarction (MI), stroke and injuries related to road traffic accidents.

Following the World Health Organization (WHO) settings approach, which acknowledges the workplace as a key setting for promoting health, and recognizing that the working population spends most of their time in the workplace, initiatives have been undertaken to introduce the concept of workplace health promotion to contribute to healthy workplaces and a decrease in NCDIs. The four main risk factors targeted are physical inactivity, unhealthy nutrition and salt consumption, smoking, and alcohol abuse. The Workplace Health Promotion component of the project focuses on guiding employers and employee representatives to create healthier workplaces through technical assistance, resources and financial assistance via a small grants programme. Twenty-nine Mongolian companies/institutions

benefited from the MCA-Mongolia grant programme funding with a total amount of 387,320 USD allocated for the implementation of workplace health promotion.

Workplace health promotion – a new concept in Mongolia

Workplace health promotion (WHP) is a new concept in Mongolia and only a small number of companies have been proactively investing in the health of their employees so far. Many enterprises are still struggling to implement occupational health and safety systems, which is especially important in a country, where many workplaces are in mining and related industries. An ordinance of the Ministry of Health on the “Selection criteria and procedures of health promoting workplaces” was issued in 1996 to stimulate the development of organizations that promote well-being at work. The ordinance was amended and re-approved in 2002 and 2009 as the selections of health promoting workplaces began to be carried out at national and local levels. Nowadays, the title of *Health Promoting Workplace* has been issued to 25 organizations at the national level and 450 organizations at local levels which is a low indicator in terms of quantity. While the MCA-Mongolia project has mostly been focusing on the personal resources of employees with regard to improving the aforementioned risk factors, it has also been advocating a more comprehensive healthy workplace approach, which follows the World Health Organization Healthy Workplace framework.

Initially, the MCA-Mongolia Health Project launched a series of dialogues and discussions between various local business companies, government and non-government organizations on creating a healthy workplace. An assessment of the situation with regards to WHP was conducted among 36 companies and institutions and results were presented to a wider audience comprising the participants and other stakeholders. Afterwards a comprehensive toolkit for workplace health promotion was created drawing on different best practice tools and the overarching guidance of the WHO Healthy Workplace Framework. Support is given to companies and institutions on an ongoing basis in applying those tools. In addition, a number of training activities (training of trainers (ToT), regional training, workshops and seminars) were held to further knowledge and skills in workplace health promotion programming.

Creating a sustainable infrastructure: the Mongolian Network for Health-Promoting Workplaces

One of the highlights of the workplace component of the MCA-Mongolia Health Project was the establishment of the Mongolian National Network for Health Promoting Workplaces in 2011. At the end of 2011, a strategic planning workshop was devoted to the formulations

Mongolia



- most sparsely populated independent country in the world with a population of around 2.75 million people
- 30% of the population are Nomads
- recent discovery of extensive mineral deposits has led to a booming mining sector
- mining accounts for 22% of GDP (agriculture 16%)
- average life expectancy is 68.5 years
- 27.6% of the population smoke*
- prevalence of hypertension is 27.3%*
- 39.8% of the population is overweight and 12.5% is obese*

*Mongolian STEPS Survey on Prevalence of NCDI and Risk Factors – 2009



The 1st National Forum on Workplace Health Promotion in Ulanbaatar, 4–5 December 2012

of vision, mission and goal of the network as well as on the identification of the strategy in a participatory way. A Steering Committee (SC) was elected by workshop participants, which since meets monthly to discuss and organize the activities of the network. The SC has three working groups: 1) Capacity Building; 2) Information Dissemination & Advocacy, and 3) Resource Mobilization. Initially a network strategy, action plan, and detailed work plan for each SC group were developed, discussed and approved in the meetings. The SC also created a Monitoring and Evaluation Group (auditing committee). Key stakeholders in further strengthening the role and influence of the network are the Mongolian National Chamber of Commerce & Industry (MNCCI), Federation for Mongolian Human Resource Management, the Trade Union Federation and the Mongolian Employer Federation. The MCA-Mongolia Health Project is providing support through an advisory group with participation of MCA-Mongolia Project Implementation Unit (PIU), WHO, Government Implementing Agency, Department of Health (GIA DoH), Ministry of Health (MoH), and the institutional contractor EPOS Health Management. Network members were further trained in workplace health promotion through a regional training programme. Ongoing support is provided with regard to raising funds for the network in order to sustain it after the project ends.

The Network sub-committees have been up to now successfully established in four

provinces (Khentii, Dornod, Sukhbaatar and Bayankhongor aimags). The sub-committees also collaborate with other healthy settings, such as kindergartens, schools and hospitals. All sub-committees encourage their members to become health-promoting workplaces. By the end of 2012, a total of 374 members have registered for the Mongolian Network for Workplace Health Promotion: 211 from aimags [administrative subdivision] and 163 from Ulaanbaatar.

So far three newsletters have been developed by the Network SC and EPOS Health Management staff and sent to all members of the National WHP Network by e-mail. The newsletters were also uploaded on the project website (www.ncdi.mn), which has a special subsection for network members. In September 2012, a study tour on workplace health promotion was organized by MCA-Mongolia Health Project to the USA for 15 participants. In December 2012, the first National Forum on Workplace Health Promotion was held in Ulaanbaatar hosted by the MNCCI. The participating stakeholders and interested parties discussed how to further advance workplace health promotion in Mongolia and agreed on a set of national and organizational recommendations.

Leading the way – good practice examples

The “Healthy Railway Worker” programme was launched and approved by the **Railway Authority** in 2011 and specifies dedicated funding until 2014. The Locomotive Depot

at Ulaanbaatar Railway Junction was selected to develop a health promotion programme and become an example for other sites and units to follow. The Healthy Railway Worker programme places emphasis on the screening of risk factors and health education seminars. After assessing risk factors for non-communicable diseases (NCD) by general practitioners, a health screening schedule for workers of 34 railway sites in the central region was developed and approved for 2011. So far, machinists of the locomotive depot and employees working at Railway unit II, the UB railway station, and the electricity delivery unit for the railway were screened and tested to establish fitness levels. Some 90%, or 1097 of a total of 1222 employees, participated in the screening. The outcomes of the screenings were summarized and presented to each enterprise. As a follow-up, training on risk factors for NCDs was conducted with the assistance of the Department of Training at the National Public Health Centre. Some 535 employees from the four enterprises attended the training in 2011.

In addition, a ToT programme was organized for the directors and training officers of the 34 railway sites as well as for the medical doctors working at four health centres along the railway. The Railway Hospital has been running the “Improving Knowledge, Attitude and Practice of Railway Employees about NCDs” programme, which has attracted approximately 100 employees to the educational sessions.

Additional seminars were held on:

- Risk factors for NCDs (alcohol, tobacco, lack of exercise, nutrition and stress) for 130 employees at Zuunkharaa;
- 110 employees with diabetes at sanatorium of locomotive depot were educated about foot care, nutrition and healthy practices;
- Smoke-free and alcohol-free environment campaigns for feldshers (healthcare professionals) of Bagakhangai and Baganuur Locomotive Depots. 10 workers quit smoking as a result.

Newtel Co. Ltd is a company which provides services for Mobicom Corporation, the leading cell phone operator in Mongolia, and has successfully been running health promoting workplace activities since it started business in 2000. The company is one of the biggest employers in Mongolia and is coordinated by 10 members of an administra-

tion team from 9 agencies, working to provide 170 types of services to the customers, nationwide through 10,000 retailers and 50 local branches and centres in Ulaanbaatar city with support of 200 part-time employees and 560 permanent employees. Overall, 87.6% of all employees of the company are younger than 35 years.

In August 2009, the company officially employed a physician who provides free primary health care and consultations for the employees, as well as conducts health screenings for all employees with the cooperation of private health centres. Employees who had been identified via the screening with specific health problems are supervised by the physician through regular check-ups and receive rehabilitation services as well as medical care. Last year the company conducted health screenings for all employees with the cooperation of a private health centre. The company organizes annual health promotion activities in May and allocates 35,000 tugrik for each employee. A contract was established with an organization, which provides activities such as swimming, aqua fitness, dance, yoga, meditation and fitness as proposed by the Newtel employees. Last year the group opened the fitness centre "Hearty" at the TEDY centre and employees and their family members may use the centre for a 35% discount of the regular fee. The programme includes a number of different activities:

- Quarterly health seminars which are organized through online teaching and in classrooms on different topics such as the prevention of non-communicable diseases, risky behaviours, healthy diet and physical activity. These are taught by physicians and specialists with degrees in medical sciences. For example, the training on "First aid for emergencies" with cooperation of Red Cross, Mongolia was attended by 150 employees.
- Employees take part in sports clubs, e.g. tennis, basketball, football, badminton, or a club for healthy nutrition. Regular sport competitions are organized among all employees and promoted by the company with all employees actively participating in these competitions.
- Most employees in the company have sedentary jobs and therefore some of the young employees of the company installed software for physical activity at workplace, which was initially developed by the National Centre for Health Development



Employees engage in desk-side exercises at Newtel.

ment to prevent problems from physical inactivity and maintain and support their health. The software was set up for all computers of the employees in the offices. Employees exercise at their desks every day at 11:00 and 16:00.

Groundbreaking research on health and productivity

A highly interesting research study on the "Adverse effects of temporary disabilities on productivity and performance" was recently conducted by Bolormaa Byambajav (Steering Committee member) of the Social Insurance Division of Bulgan Aimag. The study found steady growth in the number of the recipients of temporary disability allowances among the employees of the agencies and entities of Bulgan aimag in 2009–2011. The average period of 12.6 days of temporary disability per insurance holder resulted in employers paying 20 million MNT in total and the social insurance fund spending 37.4 million MNT in 2011 totalling 57.4 million MNT. The study concluded that there is a significant opportunity in decreasing the financial and service costs incurred by employers due to temporary disabilities through comprehensive workplace health promotion programming. It was recommended further research be conducted to document the negative cost impact of ill-health, if possible, on a national scale.

Accomplishments and knowledge acquired

The five-year MCA-Mongolia Health Project has made significant progress with regard to raising awareness of the business value of investing in the health of employees and of existing strategies and tools in workplace

health promotion. In particular, the establishment of the Mongolian National Network as well as the involvement of the MN-NCI can be considered a success as these two organizations will play a key role in sustaining the advancements made by the MCA-Mongolia Health Project.

Much work still needs to be done to create truly healthy work environments and improve the health of Mongolian employees beyond the completion of the MCA-Mongolia Health Project in September of this year. It is highly recommended that the following principles are kept in mind:

- It is essential to follow an intersectoral approach and involve all relevant stakeholders, especially more bridges need to be built between the private sector and government agencies.
- The Mongolian National WHP Network needs to be further strengthened as a forum of sharing and discussion of challenges and good practices; to achieve this relationship with an established organization should be explored.
- Workplace health promotion programmes should follow an integrated and comprehensive approach aligned with the WHO Healthy Workplace framework (which covers four main components: physical work environment, psychosocial work environment, personal health resources and enterprise-community involvement).

Wolf Kirsten

International Health Consulting
1216 E 14th Street
Tucson, AZ 85719, USA
Email: wk@wolfkirsten.com
Internet: www.wolfkirsten.com

Needs assessment for health promotion at worksite in Shanghai region

Introduction

The health promotion at worksite project in China emerged in 1993 after it had been advocated by the government health department (1). Several projects were developed within some large state-owned enterprises in Shanghai at the end of twentieth century. These projects reported their experiences in the WHO technological report in 2001. Since then and up until 2012, there have been a total of 147 papers published in Chinese journals and only a few papers reported employees' needs assessments and evaluated the effect of health promotion at work sites. At the same time, the annual forum organized by the Chinese Enterprises Promotion Association was supported by the Chinese National Institute for Occupational Health. A series of conferences about workplace health promotion were held which provided a platform for professionals from enterprises and research organizations to share their experiences and cooperation.

Some enterprises and organizations which are successful in health promotion have been named "healthy units" by the Healthy City Committee of the City Government and the local government hopes to expand the range of health promotion activities within work sites. Health promotion at work sites in Shanghai has been operating for about twenty years and it is the first area to develop and practise workplace health promotion projects. Many organizations and enterprises have contributed to the project, particularly since the Healthy City Project started in 2001. Some organizations have been award-

ed healthy organization status.

Only a few health promotion projects in the workplace have been implemented based on a scientific approach and incorporating system assessment with data collection and analysis, despite the fact that many projects have been developed during the past twenty years. Consequently, as a third party, we developed a cross-sectional survey to provide a system assessment for healthy units at Putou district according to the WHO Healthy Workplace Framework and Model (2) with four parts: physical environment, psychosocial environment, health promotion, and cooperation between enterprise and community. Below you will find the results report for the psychosocial environment assessment and workers' needs for health promotion.

Subjects and methods

Subjects

All survey participants were selected by population sampling from eight "healthy units" from Putou district in Shanghai, which had been named by the Shanghai Health Promotion Committee. All participants had been working at their respective companies for over one year. The data collection was completed in May and June 2010. The participants were recruited at their place of work, where they were given a questionnaire to complete on their own. During the recruitment process, employees received an information leaflet and their written informed consent was obtained. Some 4,000 workers gave their consent to participate in the survey and received questionnaires. The self-assessment questionnaires were answered anonymously and returned by 3,567 workers (89.2%). Among the 3,412 respondents who responded to the gender question, 948 were women (27.8%), 116 staff neglected to answer and the mean age was 37.94 years ($SD=11.97$ years). The protocol was reviewed and accepted by the Fudan University School of Public Health Ethics Review.

Questionnaire analysis

Psychosocial work environment characteristics

Psychosocial work environment characteristics were evaluated using the job demand-control model (3) (JDC) with a 15-item Chinese version of the Job Content Questionnaire (JCQ) which was revised from the Nordic JCQ sample. The following JCQ scales were used: psychological demand (5 items), control (decision latitude, 6 items), and social support (support from colleagues and superiors, 4 items). Responses to all items were scored on five points from 1 (absolute disagree) to 5 (absolute agree). Cronbach's alpha coefficient of all items was 0.80 among our survey. Cronbach's alpha coefficients of psychological demand, control, and social support of the sub-

Photos by Junming Dai and Huang Xiaoxia



Quality interview at worksite

jects were 0.71, 0.63, and 0.82, respectively. Participants who had a demand/control ratio score of 1.0 or higher were defined as being exposed to high job strain.

Job burnout is assessed by the Maslach Burnout Inventory-General Survey (MBI-GS), using 16 items in the Chinese version. Responses to all items were scored on a seven-point scale ranging from 0 (never) to 6 (every day). Cronbach's alpha coefficient of all items of MBI-GS was 0.85 among this survey. Cronbach's alpha coefficients of emotional exhaustion, cynicism, professional efficacy of the subjects were 0.90, 0.79, and 0.93, respectively. The scores of job burnout (4) computed with the original response scale ($0.4 \times \text{exhaustion} + 0.3 \times \text{cynicism} + 0.3 \times \text{lack of professional efficacy}$). The positive of job burnout was defined by a score over 1.5.

Well-being status is assessed by the WHO-five Well-being Index (WHO-5) (5) with five items in the Chinese version. Cronbach's alpha coefficient of WHO-5 was 0.924 among our survey. The cut-off point for increased well-being was 13.0.

Demographic characteristics and health status, need for health promotion

Information on gender, age, years of education, occupation, self-reported illness (any or no record of hypertension, coronary heart disease, cerebrovascular disease, respiratory disease, or other chronic disease) and health practices was also collected as potential confounding factors. Questions about personal needs for health promotion activities included which activity would be preferred next year and the reasons for this preference. Questions about personal behaviour dealt with current smoking status, frequency of alcohol consumption, participation in regular exercise, and personal interests. Current smoking status was classified into current smoker, and non-smoker. Drinking alcohol more than 3 days per week in the previous month was defined as frequent drinking, regardless of the amount and type consumed per day. Those who exercised more than half an hour per day and at least once per week in the previous month were defined as participating in regular exercise.

Statistical analysis

Upon completion of the field survey and data collection, data were transferred to the computer for statistical analysis. The database for

Table 1. The basic information relating to participants' characteristics

Indices	Male		Female	
	Mean±SD (%)	N	Mean±SD (%)	N
Age	37.75±11.87	2387	38.45±10.05	917
Less 30	45.4%	1081	41%	371
30-39	22.2%	528	21.7%	196
40-49	22.0%	524	37.0%	308
Over 50	10.5%	249	3.0%	27
Education				
9 years	22.1%	510	10.4%	94
12 years	29.6%	684	28.2%	254
14-15 years	21.1%	487	24.7%	223
Over 16 years	27.2%	629	36.7%	331
Position				
Front line	83.5%	1334	85.3%	617
Manager	9.1%	145	7.6%	47
Executive	7.4%	119	7.1%	44
Family income				
Low	15.9%	330	2.9%	21
Medium	35.2%	731	29.6%	217
Better	30.3%	628	39.1%	286
Good	18.6%	386	28.4%	208
Marital status				
Married	67.5%	1367	78.5%	621
Single	30.8%	623	18.1%	143
Others	1.8%	36	3.4%	27
Smoking				
Yes	40.1%	967	1.7%	16
Quit smoking	7.2%	173	0.5%	5
No	52.8%	1273	97.8%	928
Drinking	42.9%	1030	8.6%	82
Regular exercise	31.5%	458	16.0%	109

Note: some items have many missing values and the total is not the same number.

Figure 1 shows the health status of participants in terms of self-reported illnesses and the top three illnesses were neck pain (16.8%), fatty liver disease (12.6%) and hypertension (10.2%).

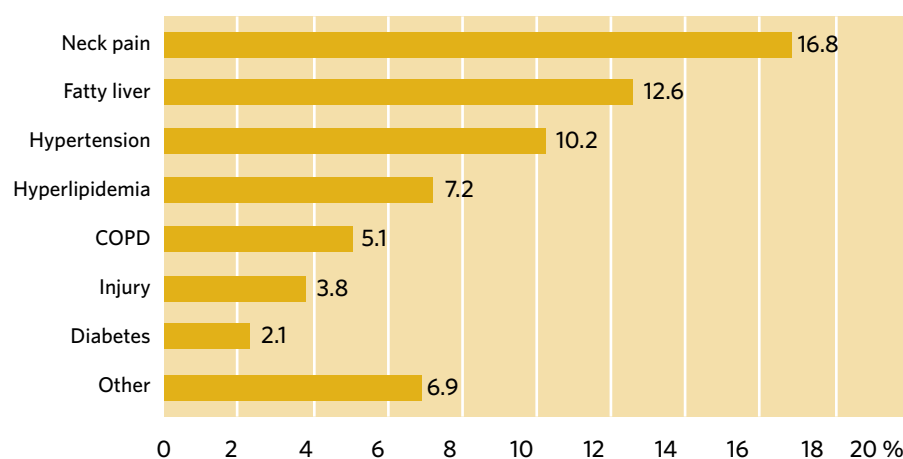


Figure 1. Prevalence of illness (self-reported) (n=3567)

this survey was developed with epi.data 3.1 in Chinese. Chi-square test or F-test analyses were used to test for significant differences (at $P < 0.05$) in various characteristics and psychosocial environment factors between gender groups (Table 1 and Table 2). All data were analysed using the Statistical Package for the Social Sciences version 16.0, and the

threshold for significance was set at $p < .05$ (two-tailed test).

Results

The basic information relating to participants' characteristics in this survey is shown in Table 1. There is a significant difference between gender, in terms of age group, ed-

ucation, family income, marriage, smoking, drinking and regular exercise. Female employees tend to have higher educational levels and income and are less likely to smoke and drink.

Table 2 presents the results of the psychosocial environment by gender. There was not a significant difference in demand-control among male and female participants, but the mean score of demand is much higher than that of control. Job strain in men is less significant than that of women. There was a significant difference between men and women in job burnout.

Discussion

All participants were selected from healthy units which have implemented a series of activities for health promotion during the past three years. This outcome shows that some effect may result from health promotion activities in their health behaviour, such as a lower prevalence of smoking in male staff. It is about forty percent in male participants of this survey and this is really low compared to other Chinese workers survey (6) data where it is often fifty or sixty percent or more. So some effect on health promotion may have emerged from our survey.

The results of psychosocial environment assessment demonstrate a positive outcome for health promotion at work sites. The rate of high job strain was about sixty six percent which is similar to other reports (about sixty or seventy percent in Shanghai workers (7)). However, the prevalence of job burnout was only about forty percent and in other reports it may reach sixty or seventy percent according to the same scale in Shanghai employees. The similar job stress level and less job burnout has probably contributed to health promotion activities at enterprises.

The results from self-reported health status with regard to non-communicable diseases were significantly less than those of the average population. The prevalence of hypertension among adults aged over eighteen is usually over twenty percent, but this was only ten percent among our survey participants. This may be due to "healthy worker effect" (8), which means workers have better health status compared to average population. Neck pain has become the number one complaint in this survey so we need pay more attention to MSD prevention in future. Fatty liver disease is also a frequent health problem and it may result from overeating

Table 2. Psychosocial environment assessment by WHO-5 and JDC and MBI-GS

	Male		Female		Total	
	Mean±SD(%)	n	Mean±SD(%)	n	Mean±SD(%)	n
Demand	3.47±0.580	2341	3.45±0.559	914	3.47±0.574	3255
Control	3.00±0.880	2341	2.95±0.861	914	2.98±0.875	3255
Social support	3.37±0.524	2341	3.26±0.544	914	3.34±0.532	3255
D/C	1.13±0.311	2341	1.15±0.297	914	1.13±0.307	3255
D/C >1.0	65.4%	1540	69.4%	634	66.5%	2164
MBI-GS						
Exhaustion	1.41±1.45	2324	1.27±1.35	920	1.37±1.45	3244
Cynicism	1.17±1.35	2324	1.06±1.18	921	1.14±1.30	3245
Professional efficacy	4.46±1.85	2324	4.72±1.65	920	4.54±1.80	3244
BNT	1.38±1.07	2324	1.21±0.97	920	1.33±1.04	3244
BNT positive	41.7%	968	33.6%	309	39.4%	1277
WHO-5	13.19±6.29	2346	13.37±5.80	920	13.24±6.16	3266
Good well-being	45.6%	1047	48.6%	447	46.4%	1517

Figure 2 presents the extent to which employees care about their health and their requirement for health promotion as there were only about fifteen percent who didn't care about their health out of a total 3492 participants.

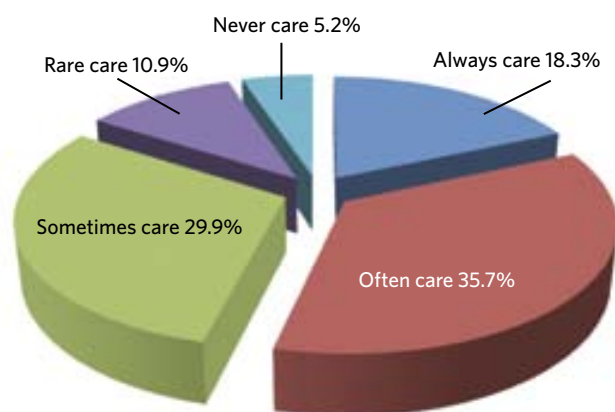


Figure 2. Care for health knowledge (n=3492)

Figure 3 presents the need of employees for health promotion activities and the top two preferred activities were exercise and a nutritional training programme. Approximately thirty percent of participants selected job stress management and information on how to seek health care service.

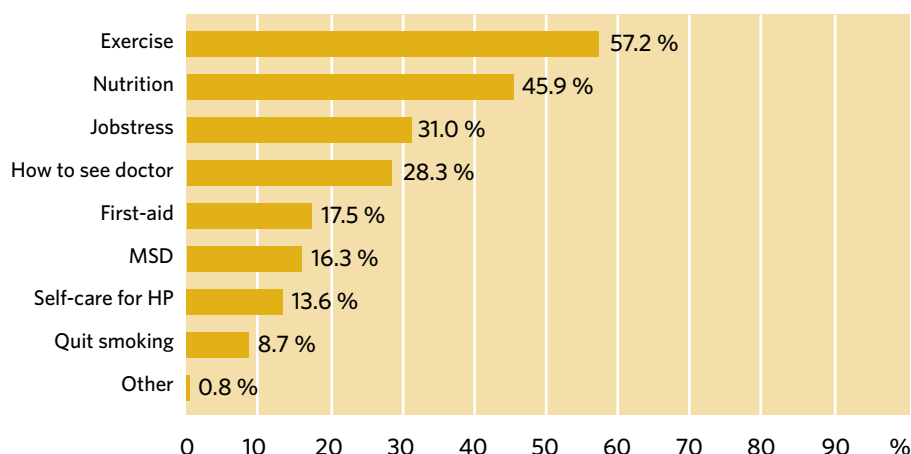


Figure 3. Preferred health promotion activities in future (n=3526)



Questionnaire survey

As Figure 4 shows, employees prefer activity types such as group activities (49.4%), expert consultations (31.3%), and the provision of leaflets on specific topics (12.9%).

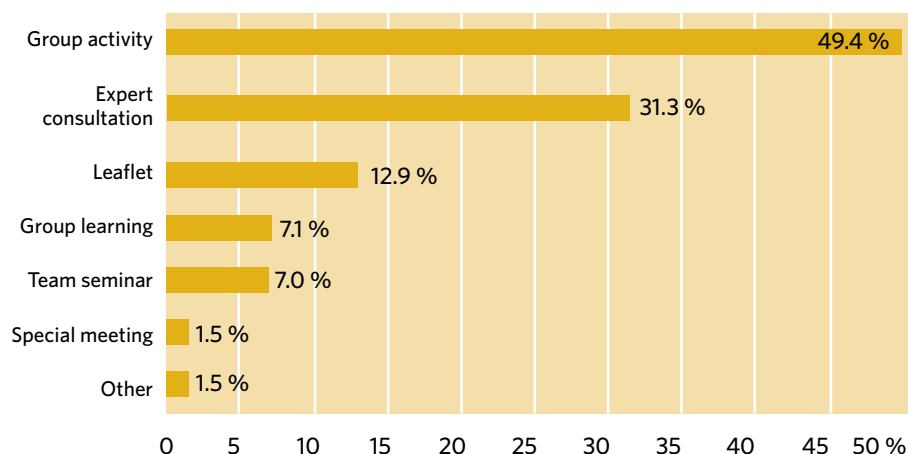


Figure 4. Employees preferring activities styles (n=3567)

and reduced exercise so there is still scope for health promotion activities to expand.

The results of the needs assessment for health promotion activities provide an important guide for arranging activities. Exercise and nutritional training were the top two preferred topics which contribute to preventing neck pain and fatty liver disease. So group activities with employee participation need further development in future because these types of activity are able to encourage more workers to attend health promotion activities. It is helpful to expand and promote the effects of health promotion.

The scientific needs assessment for health promotion is the first step in creating a more successful project to understand

which activities employees prefer. It is beneficial to encourage employees' participation as this can provide a more accurate direction for health promotion activities.

Limitation:

It is not accurate in a cross-sectional survey to assess the effect of health promotion because there is a lack of baseline data though population data can be used as a control. Moreover, the effect of health promotion needs to be based on the activities at the work site. The process assessment is the basis for the evaluation of effects but this project lacks this data. A scientifically designed experiment with specific cohort can be used for assessment in future.

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Conclusion

Closer attention needs to be paid to the psychosocial environment and mental health, and health promotion activities must be based on employees' needs.

Junming DAI, PhD, Associate Professor
(author for correspondence)

Hua Fu, PhD

School of Public Health
Fudan University
130 Dong-an Road
P.O Box 248
Shanghai, 200032, China
Email: jmdai@shmu.edu.cn

Xiaoxia Huang, MA

Minghong district, The Center for Disease Prevention and Control
Shanghai, China

Ping Zhu

Putou district, the health promotion committee
Shanghai, China

Promoting Human Factors & Ergonomics Programme in UNIMAS – Malaysia

Introduction

Malaysia is one of the rapidly growing industrially developing nations in South-East Asia. It is a multiracial country where diverse communities such as Malays, Chinese and Indians have been contributing to the national economy for a long time. Geographically, it is divided into two parts; Peninsular and East Malaysia. Most of the industries and educational facilities are located in the western part of Malaysia (Peninsular). The country's economy is also based on millions of migrant workers (1), imported machinery and new technology (2–3). Many of these matters are linked to either ergonomics issues or human factors in one way to another.

Human Factors and Ergonomics (HFs/E) is an exciting scientific field of study as it involves understanding our needs, abilities and limitations in order to improve our interaction with man-made environments. With the influx of foreign investment and changes in work processes in different industrial sectors in Malaysia, the HFs/E movement started in the early 1990s (2). The importance of HFs/E application drew public attention since early industrial workers had to readjust their physiological and psychological capabilities, and to fit with the latest industrial systems. Industrial enterprises became interested in HFs/E issues since the implementation of OSH Acts (www.skccct.com/OSHA%20Summary.htm) became part of NIOSH regulations. In the early 90s, human factors (HFs) were prevalent and were substituted with the name 'ergonomics' or 'workplace health and safety' or simply 'occupational or industrial safety' which was neglected in many developing countries (4–5). Now HFs/E is an emerging issue in improving human performance and productivity that can certainly contribute to the national economy. At the moment, there are not many professional experts involved in HFs/E practices in the country. Qualified skilled HFs professionals and ergonomists are increasingly in demand for positions within manufacturing industries, government agencies and various private sector players in Malaysia (2). Unfortunately, only a few universities teach HFs/E courses. The only curriculum designed for industrial ergonomics that is comprehensive in terms of HFs/E education and training is the Masters Programme of-

fered by Putra University (UPM) in Selangor and the industrial safety and health programme by the University Malaysia Pahang (UMP). Due to limited education and a lack of training and research in HFs/E, most Malaysian engineers and top level managers are not fully aware of this discipline (6–7). Therefore, establishing a HFs/E programme in a higher educational institute like UNIMAS is worth providing academic qualifications useful for industries and companies, as well as to enhance industrial production. The proposed programme designed anticipates academic collaboration with other faculties and research institutes which would be successful for socio-economic advancement through academia dealing with industries and other stakeholders in the country.

UNIMAS – education and research

The University Malaysia Sarawak (UNIMAS) is located in East Malaysia, at the south-west corner of Borneo. This university is an ISO-certified university, committed to expanding its educational and research activities. UNIMAS is equipped with modern teaching and research facilities, and successfully obtained Quality Assurance Certificates for providing higher education and research in the country. UNIMAS now belongs to the ASEAN University Network (8), recently placed at 165th among the 500 top Universities in Asia (9). The high teaching performance and leadership at UNIMAS have been proven to be excellent for acquiring academic qualification (10). UNIMAS welcomes any future initiatives with local and international collaborators. The University's Institute of Health and Community Medicine, Institute of Social Informatics and Technological Innovations, the Centre of Excellence for Image Analysis and the Spatial Technologies play a major role. The Quality Assurance Division, Centre for Technology Transfer and Consultancy, and the Centre for Applied Learning and Multimedia provide an enormous opportunity of teaching, training and research. UNIMAS has received scientific honours and acclaim from the international community for acquisition of research grants, publications and useful scientific findings conducted at different faculties, departments and research centres. The leadership model of UNIMAS provides an

opportunity for the staff members to build up their academic skills due to the working dynamics of the faculty members and mutual understanding of the Senate and Dean's Council. The Vice Chancellor's expectation is the driving force for all the faculty and staff members to achieve academic excellence that requires the cumulative support of everyone on campus. UNIMAS is aiming to achieve research university status by 2015 through the establishment of high quality research and international collaboration. At the moment, UNIMAS is offering eight research positions such as Tun Zaidi chair for medical chemistry; the Tun Openg chair for sago technology; the Shell chair for environmental studies; and the Sapura chair for information and communication technology. Nevertheless, development policies must be professionally-implemented so that teaching and research activities at UNIMAS comply with the normal democratic demands of transparency and accountability at all levels. We need to apply moral values with less room for deviation in the implementation of development policy. National educational policy must recognize the academic and research excellence of UNIMAS.

The proposed programme

The Institute of Design and Innovation (InDI) and the Faculty of Cognitive Sciences & Human Development (FCSHD) are jointly entrusted with and enthusiastic about the establishment of HF/E Programmes at UNIMAS to provide graduate students with guided experience that trains them in the theories and methods of HF/E application. With the collaboration of InDI and other faculties, the proposed programme is designed by FCSHD to focus on a wide variety of cognitive issues within productivity, system safety and human reliability. Our programme comprises a science core, HF/E design core, and a job-specific component customized to ensure graduates are suitably equipped for the needs of local industries. Keeping to socio-cultural values in Malaysia (11), this programme integrates labour management and economic issues that might be effective and beneficial for industrially developing countries (5). Our intended programme is a behaviour-based programme with a special concentration on HF/E procedures and planning. It also includes occupational safety and ergonomics as well as strategies for the reduction of human errors in the design of products,

Table 1. Programme specific and faculty specific courses

Program Specific Core Courses	Faculty Specific Courses
Contemporary Issues in Human Factors	Cognitive Ergonomics
HF's in Social & Organizational Context	Perception, Sensation & Errors
Disability and Ageing Design	Motor Learning & Psychometrics
HCI & Usability Evaluation	Elective Courses
System Safety and Human Reliability	Human System Modelling Seminar
Human Factors Policies & Compliances	Economics of Human Factors
Research Methods in Human Factors	Individual Project - 6 credits

Sustainable Borneo Indigenous Design and Innovation - SBIDI



processes and operations. This programme includes HF/E core areas to meet the future prospects of human-centred design concept which is supposed to be excellent for socio-economic advancement in the country. Forty hours of study will be counted for one credit and 42 credits are required to complete the whole programme that includes core or major subjects, faculty specific and elective subjects (Table 1). Additionally, three-credit courses are initially suggested for each of the courses. Students will be assigned to industrial system design, workplace evaluation, product safety and comfort issues. Students will also follow competency training in core areas of HF/E programme by identifying work-related problems, and be able to develop control measures through the promotion of HF/E issues, OSHA & NIOSH Regulations (4).

The programme synopsis includes principles and practice of cognitive ergonomics, contemporary issues in HF's, users' usability, HF's in social and organizational context as well as human computer interaction (HCI). This programme will focus on a participatory approach to ensure students acquire enough knowledge and skills through HF's modules, subject specific module and faculty specific modules. Our programme will pro-

Table 2. Components of the Proposed Programme

Major Concentration	Credit Value	%
Human Factors Module (Core Courses)	21	50
Faculty Specific Courses	12	29
Elective Courses	3	7
Project (Industrial Attachment)/ Thesis	6	14
Total Credit Value	42	100

vide graduate students with the skills they really need, and identify ergonomics hazards in human-technology-environmental systems. This programme is also designed to equip postgraduate student with the relevant competencies on Sustainable Borneo Indigenous Design and Innovation (SBIDI), especially for future employment in Asia and beyond. Major components of the proposed programme are illustrated in Table 2. At the end of the course, graduates would be able to extend their academic HF/E knowledge, personal skills and decision-making capabilities in the design of products, processes and industrial operations. Graduates will be able to advise management on potential liabilities by identifying impending hazards, discomfort or mishaps by evaluating risk factors and implementing appropriate control measures. Elective courses and industrial attachment training to complete this degree must be approved by the advisor of the programme. Individual projects are intended to integrate HF's methods and ergonomics procedures and students will be encouraged to work with an industrial company, wherever possible. Every student will be assigned to a committee member to monitor the students



Photos by UNIMAS

placements as part of the students' practicum in local industries or companies in Malaysia.

Discussion

Human Factors (HFs) specialists and ergonomists will be working within large corporations, industries, and as self-employed consultants. Therefore, the Ministry of Higher Education, industrial association and the country's research funding sources should be informed about the positive impact of introducing HFs/E programmes in higher educational institutes. Academics should be aware of the important cost-benefits of HFs/E education. The proposed programme has been designed for, and it is believed to be a unique programme for future employment opportunities. Also, this programme may need to be redesigned, if necessary, after market surveys and depending on the evaluation of industry's specific need for HFs/E expertise. With the present and future trends of technological advances in Malaysia, the HFs/E community should integrate concepts from examples that fit into the local educational system. Since certification is a crucial contributing factor towards recognizing the proposed degree, our graduates should be consulting with local associations (www.hfem.org) and international organizations (e.g., International Ergonomics Association, Human Factors & Ergonomics Society). Whatever the challenges may be, the proposed programme is scheduled to start by 2014. The proposed programme aims to produce the first human factors and ergonomics graduates in Malaysia with advanced knowledge and skills; to contribute to FSKPM's strength to help UNIMAS achieve academic diversity and research excellence; to enhance collaborative efforts within the faculties and institutions working for UNIMAS; to use expertise from the newly recruited lecturers in their fullest capacity and workload; and to seek European Union Partnership and Grants (12), if possible.

Conclusion

On the national development agenda, we now need better allocation of research funds for all the educational institutes located in the eastern part of Malaysia. Malaysia's nation-building outlook needs to be more multi-cultural and accepting of its rich diversity. Times have changed and globalization has swept over East Malaysia and Peninsular with both a positive and negative impact on country's socio-economic movement through community involvement. The country's progress in advanced education and funding for new initiatives such as the HFs/E programme should go forward. Since HFs/E education is truly important for national productivity and economy, collaboration is sought with local industries, government organizations, service sector employers and others. If necessary, changes should be made within the educational system and its processes. If we are not able to do that, we cannot produce enough professionals for the country.

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Associate Professor Dr. Rabiul Ahasan
Prof. Dr. Shahren Ahmad Zaidi Adruce

Faculty of Cognitive Sciences and Human Development
University of Malaysia Sarawak
(UNIMAS)
94300 Kota Samarahan
Sarawak, Malaysia
Email: arabiul@fcs.unimas.my

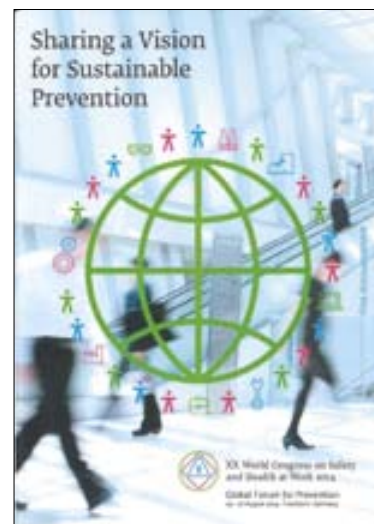
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Photo by Suvi Lehtinen

A new communicative 'game' was used for information dissemination in the 3rd International Strategy Conference on Occupational Health and Safety.



Suvi Lehtinen, Finland

Networking emphasized in Dresden

A total of 150 occupational health and safety experts from 33 countries gathered in Dresden on 6–7 February 2013 for the 3rd International Strategy Conference on Occupational Health and Safety. The importance of the Conference was well reflected by the number of organizers: DGUV as the main organizer in collaboration with WHO, ILO, ISSA, EU-OSHA, IALI, ICOH and IOHA.

The theme of the Conference was 'Networking as a driving force for a culture of prevention'. Prevention of occupational health and safety hazards and risks is by definition multisectorial, multidisciplinary and multifunctional activity. It is therefore important to stop and identify the key players in our societies in order to create a prevention culture. Prevention pays off; 92% of health expenditures in the world go to curative care. Occupational accidents and diseases are preventable in principle, and work-related diseases can be mitigated with appropriate preventive measures. The vast majority of the knowledge needed to improve the situation is already available. What we lack is informed

action and implementation.

The DGUV, together with ILO and ISSA, is preparing for the World Congress in Frankfurt, Germany, scheduled for 24–28 August 2014. This Strategy Conference was one milestone on the road to Frankfurt. For prevention culture, another stepping stone will be the forthcoming Symposium in Helsinki, Finland, on 25–27 September 2013. The aim of the Helsinki Symposium is to gather research and other evidence available worldwide on what can be done to promote a prevention culture and to ensure the safety and health of all working people and beyond.

In the Dresden Strategy Conference, the discussion in the Workshops revealed a need for the clarification of the concepts of prevention culture, prevention climate, safety culture, and well-being at work. These concepts will also be discussed in Helsinki in September.

One of the take-home messages was that of Dr. Walter Eichendorf: How can we prepare ourselves for and how can we manage the unexpected? This thinking reveals the

close relationship between safety culture, prevention culture and the crucial need for networking. This discussion will continue in Helsinki in late September at the Culture of Prevention Symposium.

Please mark in your calendars
25–27 September 2013, Helsinki, Finland
24–27 August 2014, Frankfurt, Germany

Cordial thanks are due to all our colleagues in DGUV for their organizing for such a successful Conference.

Suvi Lehtinen

Chief, International Affairs
Finnish Institute of Occupational Health
Topeliuksenkatu 41 a A
00250 Helsinki, Finland
Email: suvi.lehtinen@ttl.fi
www.ttl.fi

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Jalan Ong Sum Ping
Bandar Seri Begawan BA 1311 BSB
BRUNEI DARUSSALAM

Yang Nailian

National ILO/CIS Centre for China
China Academy of Safety Sciences and
Technology
17 Huixin Xijie
Chaoyang District
Beijing 100029
PEOPLE'S REPUBLIC OF CHINA

Ho Ho-leung

Deputy Chief Occupational Safety Officer
Development Unit
Occupational Safety and Health Branch
Labour Department
14/F, Harbour Building
38 Pier Road, Centrum
HONG KONG, CHINA

K. Chandramouli

Joint Secretary
Ministry of Labour
Room No. 115
Shram Shakti Bhawan
Rafi Marg
New Delhi-110001
INDIA

Tsoggerel Enkhtaivan

Chief of Inspection Agency
Ministry of Health and Social Welfare
Labour and Social Welfare Inspection Agency
National ILO/CIS Centre
Ulaanbaatar 210648
Baga Toirog 10
MONGOLIA

Lee Hock Siang

Director
OSH Specialist Department
Occupational Safety and Health Division
Ministry of Manpower
18 Havelock Road
Singapore 059764
SINGAPORE

John Foteliwale

Deputy Commissioner of Labour (Ag)
Labour Division
P.O. Box G26
Honiara
SOLOMON ISLANDS

Le Van Trinh

Director
National Institute of Labour Protection
99 Tran Quoc Toan Str.
Hoankiem, Hanoi
VIETNAM

Seiji Machida

Director
Programme on Safety and Health at Work
and the Environment (SafeWork)
International Labour Office
4, route des Morillons
CH-1211 Geneva 22
SWITZERLAND

Evelyn Kortum

Technical Officer, Occupational Health
Interventions for Healthy Environments
Department of Public Health and
Environment
World Health Organization
20, avenue Appia
CH-1211 Geneva 27
SWITZERLAND

Jorma Rantanen

ICOH, Past President
FINLAND

Harri Vainio

Director General
Finnish Institute of Occupational Health
Topeliuksenkatu 41 a A
FI-00250 Helsinki
FINLAND

