The development and testing of the Burden on Community Health Volunteers (BCHVs) instrument and the measurement of burden experienced by community health volunteers in Taiwan

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This thesis has been made possible through the support of the following people:

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Declaration on Ethics

The research presented and reported in this thesis was conducted within the guidelines for research ethics outlined in the National Statement on Ethics Conduct in Research Involving Humans (1999), the Joint NHMRC/AVCC Statement and Guidelines on Research practice (1997), the James Cook University Statement and Guidelines on Research Practice (2001). The proposed research methodology received clearance from the James Cook University Experimentation Ethics Review Committee (approval number HREC No.: H3402).

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Glossary

Community health promotion: The community is the most basic unit for implementing government policy. In Taiwan, it is hoped that, through public learning and participation, community consciousness and self-determination may be aroused to establish a healthy and supportive environment and build a healthy community together.

Volunteer and volunteering: Volunteer and volunteering involves active freely participation or contributions of time, energy or ability for whatever motivations; is not primarily motivated by financial gain; and focuses on the common good thing.

Community health promotion volunteers: Community health promotion volunteers work for a variety of institutions known as the Community Health Promotion Development Centres (CHPDC) or the Community Health Development Centres or the Community Health Building Centres, such as the Health Promotion Department of hospital, the Community Development Association and the Public Health Centre (Clinic) base. These services are funded with assistance from the Public Health Bureau of the County Governments. The volunteer must be nominated by the leader of a local association and attend a volunteer training course.

Burden: Burden is defined as a workload, work difficulty, work challenge or work barrier as perceived by volunteers of the community health promotion activities.

Abstract

Background: The work of volunteers increases the service hours and range of services available at community health centres in Taiwan. Without these volunteers, many health promotion activities in Taiwan would cease to be available to people. While we know the government's resources are limited, the strength of the civilian community is enormous. Since the Taiwan Government funding for community health promotion diminished, some centres have not been able to continue to recruit volunteers, offer health promotion in the community, or integrate manpower and materials from the local community for the purpose of delivering health promotion to members of the community. Community health volunteers often face negative attitudes to their role from community members that lead to frustration. The volunteers may also be engaged in other forms of volunteering, which could lead to burden and result in attrition from the role. To date however there has been little empirical evidence regarding the burden experienced by community health volunteers in Taiwan and no instrument to measure the phenomenon.

Objectives: To develop and test a questionnaire to measure burden experienced by community health promotion development volunteers and to investigate the current burden experienced by this cohort of volunteers in an area of Taiwan.

Methods: A sequential mixed method exploratory design was chosen as the best way to conduct the study. The study incorporated the following three phases: initial development of a questionnaire, testing of the questionnaire, and surveying a large sample of volunteers using the developed questionnaire.

Results: The 20 item instrument designed to measure burden on community health promotion volunteers (the BCHVs) in Taiwan showed good internal consistency, content validity, and construct validity.

The Burden on Community Health Volunteers (BCHVs) scale

		Never	Seldom	Some -times	Often	Almost Always
1.	I feel the low participation by the community residents in planned healthcare activities impacts on my role	☐	☐	☐	☐	☐
2.	I feel I lack support from members of the community residents in carrying out my role	☐	☐	☐	☐	☐
3.	Misunderstanding by the community residents about the health service availability affects my role	☐	☐	☐	☐	☐
4.	I feel the presence of fraudulent groups in Taiwan makes my role as a health care volunteer more difficult	☐	☐	☐	☐	☐
5.	I feel the adaptation courses provided for volunteers did not adequately help me to conduct my role	☐	☐	☐	☐	☐
6.	I feel the lack of volunteers makes my role more difficult	☐	☐	☐	☐	☐
7.	I feel the benefits for volunteers are inadequate	☐	☐	☐	☐	☐
8.	I feel my role is affected by missing or broken equipment	☐	☐	☐	☐	☐
9.	I feel the difficulty associated with completing the required paper work impacts on my role	☐	☐	☐	☐	☐
10.	I feel the frequent change of supervising strategies of the health government impacts on my role	☐	☐	☐	☐	☐
11.	I feel that I have too many community activities to conduct to be effective	☐	☐	☐	☐	☐
12.	I feel the courses provided for volunteers did not adequately prepare me for the health problems I manage	☐	☐	☐	☐	☐
13.	I find it difficult to communicate with some of the community residents, such as immigrant residents, and this makes my role harder	☐	☐	☐	☐	☐
14.	I am unclear about the expectations of my role	☐	☐	☐	☐	☐
15.	I feel lack of communication and/or interaction with other volunteers makes my role more difficult	☐	☐	☐	☐	☐
16.	I feel that the dangers associated with the health services and home care impact on my role	☐	☐	☐	☐	☐
17.	I feel physically exhausted due to my volunteer role	☐	☐	☐	☐	☐

		Never	Seldom	Some -times	Often	Almost Always
18.	I feel the lack support of my family makes my role more difficult	☐	☐	☐	☐	☐
19.	I feel it is difficult to arrange health schedules during holidays	☐	☐	☐	☐	☐
20.	Overall, I feel the burden associated with the volunteer's role is heavy	☐	☐	☐	☐	☐

Using a stratified random sampling approach 435 participants in a region of Taiwan completed the final questionnaire in phase 3 of the project. The findings indicate that overall the burden experienced by the community health volunteers was low to medium. However, volunteers who undertook more hours, were responsible for greater numbers of clients, were without partners, and had poorer personal physical health experienced an increased level of burden.

Conclusions: Community nurses in Taiwan will be able to use the BCHVs instrument to assess the burden experienced by volunteers in the future. The identification of the factors associated with burden in the current sample will allow the government, nurses and those in leadership positions to develop strategies to help reduce the burden on these volunteers in the future. Further studies using the BCHVs across Taiwan will assist with the identification of the factors related to burden and provide evidence for the introduction of national strategies to reduce the current rates of attrition of volunteers in Taiwan. Given the role of volunteers in complementing the work of community nurses, this is an important study.

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Chapter 1. Introduction

1.1 Introduction

Volunteers are an important addition to health service delivery in many countries of the world. Especially important in countries where there are high densities of people needing health services, these volunteers provide a vitally needed service (Ministry of the Interior) (MOI, 2008). The work of volunteers increases the service hours and range of services available at Community Health Promotion Development Centres (CHPDCs) in Taiwan by complementing the work of health personnel including nurses. Without these volunteers, many health promotion activities in Taiwan would cease to be available to the people. However, health promotion volunteers may not only face negative attitudes that lead to frustration in their role, but also be engaged in other forms of volunteering, which could result in a high attrition rates.

Volunteer activity is a positive experience for many; for others it can become a burden Research has demonstrated that the burden on other types of informal carers, such as carers of the elderly and the mentally ill, is immense. As little is known of the work or roles of community volunteers, especially those who work in the area of health promotion in Taiwan, it is unclear if these volunteers experience the same burden as informal carers. While little is known of the burden experienced by community health promotion volunteers in Taiwan, others health workers are known to experience significant amounts of burden associated with their roles. However, specific studies of health volunteers in other countries have identified burden including work load around physical labour, emotional and time loading; deficiency of information; insufficient

emotional support from family, volunteers, Community Health Nurses, residents; lack of instrumental support; deficits in communication skills; lack of cooperation skills and lack of confidence (Campbell, Nair, Maimane, & Sibiya, 2008; Chuang, 2001; Guan, 2002; Knight, Fox, & Chou, 2000; Nan, 2002; Zheng, 2001).

A recent study on community volunteers was undertaken in Japan to describe and validate a tool designed to measure the burden on health promotion volunteers in Japan. This study appears to explore the burden experienced by a similar group of volunteers to those of interest in this study. However, due to insufficient information published about the study and the role of the volunteers, it was difficult to understand how the scale was developed and whether it was used to measure the exact type of volunteer role that is the focus of this study (Murayama, Taguchi, & Murashima, 2006). Further, most of the manuscripts of interest related to the study were only available in Japanese and translation caused some confusion. Other than the study by Murayama et al. (2006), there is no available information that addresses the burden placed on health promotion volunteers in the carrying out of their role in Taiwan or a similar country, or a scale developed for the purpose of the measurement of burden in this particular cohort.

The study described in this thesis utilised a sequential mixed method design for instrument development. In this design the research is driven by the quantitative paradigm, which is dominant, with the qualitative or exploratory phase adding information essential for the conduct of the quantitative phase. The design incorporates three phases. Based on the literature review (etic perspective) and analysis of focus group data (emic perspective), multiple items were identified for inclusion the item pool

(Durham et al. 2011). In Phase two these items were then subjected to reduction and testing. Phase three incorporated a distribution of the survey tool to a large sample of volunteers followed by analysis of the level of burden experienced by the different levels of volunteers.

This chapter provides an overview of the important factors involved in the study undertaken to develop and test a scale to measure burden on community health volunteers and to measure burden on a sample of current volunteers in Taiwan.

1.2 Aim of study

The aim of this study was to explore the burden of volunteering on a subset of community health promotion volunteers in Taiwan. In order to do so, a tool to measure burden on community health volunteers was initially developed and tested.

1.3 Study objectives and questions

This research project had four main objectives:

- To explore the burden of volunteering on a subset of community health volunteers in the community in Taiwan;
- To use this information to develop and test an instrument to identify the level of burden on current volunteers;

- To apply and analyse the outcome of a survey using the developed measurement tool across the fundamental member, cadre member, the leader, and the chief groups of volunteers in Taiwan; and or across the types of CHPDCs in Taiwan;
- To use the outcomes of the assessment to identify possible support interventions.

The research questions are defined as the following:

- What is the current level of burden on volunteers in Taiwan?
- How do novice, experienced, and veteran health volunteers describe their current level and experience of burden?
- Do all groups share similar burden?
- What differences in burden experienced by volunteers can be identified within / across the diverse base types of Community Health Promotion Development Centres?
- What differences in burden can be identified within / across the fundamental members, cadre members, leader members, and the chief of health volunteers?
- What support mechanisms could be employed to support community health volunteers in the future?

1.4 Significance

Although many studies of helping roles have been conducted previously, especially in discipline areas such as psychology, most of the studies to date are of caring roles by family members or relatives as opposed to that of community volunteers. There has also been some focus on helping in contexts where a potential helper is faced with an

unexpected need for help (Chopra, Munro, Lavis, Vist, & Bennett, 2008; Grube & Piliavin, 2000; Haski-Leventhal & Bargal, 2008; Taylor & Pancer, 2007), such as situations where policy makers have implemented strategies to improve volunteer resources, particularly for health in countries with low and middle incomes (Kloseck, Crilly, & Mannell, 2006). Other research has been undertaken to explain how volunteers may experience conflicts between the demands of their general and specific role identities (Grube & Piliavin, 2000).

In the case of volunteers, however, it is always important to remember that they are putting up their hand to help others. Even so, there is also the possibility of negative consequences for the volunteer, such as feelings of inadequacy while trying to help and the development of burnout, a syndrome characterised by emotional exhaustion and withdrawal from the helping relationship. These negative effects have already been reported as a result of lack of support and a lack of training in volunteers (Lewig, Xanthopoulou, Bakker, Dollard, & Metzer, 2007). Indeed, to retain community health volunteer workers as part of health programs is not easy, even when the volunteers have been trained. This lack of retention may be related to the complexity of community services and the resulting requirement for enhanced health-related knowledge and skills for those involved in delivering care (Daniels, Hc, Clarke, Dicka, & Johanssonb, 2005; Gaugler, Roth, Haley, & Mittelman, 2008). How to retain trained volunteers in a community setting or program is an important concern for public health policy makers, administrators and nurses in Taiwan as well as elsewhere in the world (Bennett, Ross, & Sunderland, 1996; ErbinRoesemann & Simms, 1997; Haddad, 2004; Ross, Greenfield, & Bennett, 1999). By developing a better understanding of the burden

experienced by volunteers, recommendations for strategies to improve retention may be developed.

It is possible that volunteers are affected by the same type of negative impacts, or burden, as experienced by family carers (Gaugler, et al., 2008; Papastavrou, Kalokerinou, Papacostas, Tsangari, & Sourtzi, 2007). The burden for this group of carers have been identified as including: personal strain, role strain, relational deprivation related to the management characteristics of the care recipients, patient psychopathology and the use of emotional-focused coping strategies (Kao & McHugh, 2004; Papastavrou, et al., 2007; Steven H. Zarit, Todd, & Zarit, 1986). Perhaps volunteers in community health roles experience similar burden. Currently, there is little known about the burden placed on Taiwanese volunteers in the community health area and a further gap exists related to whether a difference exists between the burden experienced by novice, experienced, and veteran volunteers. If this information were available, it could be used to alert the Community Health Nurses and the administrators of community health promotion development centres to assist with the development and delivery of programs to assist in preventing the potential loss of volunteers in the future. Furthermore, there is currently no tool available for measuring the burden on community health volunteers in Taiwan. Therefore, in order to measure the burden in this cohort effectively, a tool for its measurement must first be developed and tested. This study developed a tool, tested the psychometric properties of the tool, including its reliability and validity, and used the tool to measure the level of burden in a sample of current community health volunteers in Taiwan.

1.5 Declaration and Contribution Table for Thesis Chapter One

The following discussion paper situates the study, provides an overview of the context and background of the study, and discusses the importance of community health volunteers to nurses in Taiwan.

Declaration by candidate

The extent of candidate contribution to the following publication is as follows.

Publication # 1: Gau, M., Stewart, L., Buettner, P., & Usher, K. (Under review). Community health promotion volunteers in Taiwan: their value to nurses. *Australian Journal of Advanced Nursing*

Thesis	**Article**	**Publication Details**	**Author Contributions**	**Impact Factors**
Chapter one: Introduction	Community health promotion volunteers in Taiwan: their value to nurses	*Australian Journal of Advanced Nursing*	Gau (50%) Stewart (10%) Buettner (10%) Usher (30%)	0.5

Declaration by co-authors

The undersigned hereby certify that:

- The above declaration correctly reflects the extent of the candidate's contribution to the work and the extent of contribution of each co-author;

- They meet the criteria for authorship in that they have participated in the conception, execution, or interpretation, of at least part of the publication in their field of expertise;

- They take public responsibility for their part of the publication, except for the responsible author who accepts overall responsibility for the publication;

- There are no other authors of the publication according to these criteria;

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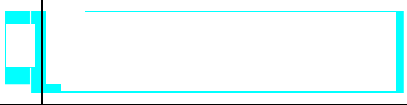
Signature 1		Date 30/11/11
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Abstract

In Taiwan, volunteers make a significant contribution to the health workforce. In this paper, we explain the volunteer's role and describe both the benefits and barriers associated with volunteering as a health worker in Taiwan. We also outline the crucial function of volunteers in supporting community nursing work.

Key words: Community health promotion; volunteers; Taiwan; nursing;

Word count: 2350

Introduction

Community health worker volunteers play an important role in communities that are underserved and disenfranchised (Spencer et al 2010). The volunteers make a significant contribution to health care delivery in the community where they add significantly to the workforce. Since 2001, the service performed by volunteers in Taiwan has increased gradually as indicated under the Regulations of Volunteer Service. The number of volunteers in the government, such as the Department of Cultural Affairs, Education, Environment Protection, Medicine, Health, Finance, Economic Affairs, Agriculture, National Defence, Fire Prevention, Police, and Social Welfare, numbered approximately 500, 000 at the end of 2007. For example, approximately 12,000 people registered in Taiwan to become volunteers during 2007. There are more than 100,000 volunteers in the social welfare field alone. They currently host a variety of volunteer groups working on social welfare and assist the welfare service in areas such as disability, aging, women and children, consultant and community welfare services. The volunteers provided an average of 2.07 hours per week in 2007 which assisted to increase the quality of welfare work overall (MOI 2008). To become a health promotion volunteer in Taiwan, the volunteer must be nominated by the leader of a local association and attend a volunteer training course. Training for volunteers has become a requirement of each Community Health Promotion Development Centre (CHPDC) funded by the Taiwanese government (Taiwan DOH 2000). The current occupation of volunteers includes students, teachers, housekeepers, labourers, businessmen, government employees, retirees, and other professionals.

In Taiwan, health promotion volunteers work for a variety of institutions known as Community Health Promotion Development Centres, such as the Health Promotion Department of a hospital, the Community Development Association, or the Public Health

Centre (Clinic). The chief of a Community Health Promotion Development Centre integrates and organises local community resources as well as enhances the training for the various participants of the community. These services are funded with assistance from the Public Health Bureau of the County (Bureau of Health Promotion 2008). Volunteers must be nominated by a community leader prior to selection. As a result, they are trusted and respected members of the community. After completing the course, participants are formally commissioned by the leader or the chief of a Community Health Promotion Development Centre. Overall, volunteers make a significant contribution to health care in Taiwan (Chambers et al 2005; Gee et al 2005; Campbell et al 2007; Flicker 2008).

This paper describes the role of community health promotion volunteers in Taiwan, addressing issues regarding the volunteers' role, benefits and barriers to volunteering and the important function volunteers undertake regarding supporting community nursing work.

The role of community health promotion volunteers

The role of health promotion volunteers in Taiwan is similar to the role of other paid community health workers. It includes working with people with a disability, the elderly, and women and children. Health promotion volunteers are expected to connect with and help coordinate households, visit families, record and report, provide blood pressure measurement service, provide in-home care, and conduct health behaviour change programs such as cessation of smoking and chewing betel nut (Taiwan DOH 2000). Similarly to other community health workers, the volunteers are expected to maintain and promote the health of the community.

There are different levels of health promotion volunteers in Taiwan. The fundamental volunteers are newcomers who have just entered into a commitment as a volunteer. Cadre volunteers are those who are more experienced, capable of providing actual assistance to clients and leading a section of work. The leaders are the most experienced volunteers who undertake health promotion activities in the community and lead the work of other volunteers. These levels of volunteer in Taiwan correspond to novice, experienced and veteran community health volunteers in Japan. In Japan the novice volunteer is someone with between one to three years experience; the experienced volunteer has four to eight years experience and the veteran has nine or m ore years of experience (Murayama, Taguchi, and Murashima 2008).

Benefits and barriers for community health promotion volunteers

Benefits of volunteering in health related programs indicate that volunteers receive something in return for their time and commitment. For example, volunteers have reported an increase in self-esteem and a sense of personal accomplishment (Daniels et al 2005), a sense of involvement in worthwhile work, positive feelings about self (Rodrigez et al 2003), a sense of belonging, valuable work experience, access to health information and skills through training or contact with program staff, and a feeling of being energised as a result of volunteering (Davis, Leveille, and Logerfo 1998; Flicker 2008; Murayama et al 2008; Scorer 2007). However, the volunteer role is also known to be associated with many burdens such as lack of time to spend with family (Daniels et al. 2005), not enough time for activities like shopping, hobbies and work (Murayama et al 2008, 2010), lack of support for the role (Kang'ethe 2009).

Challenges in recruiting and retaining community health promotion volunteers

Most of the Community Health Promotion Development Centres in Taiwan commit themselves to grass-roots health care. Since this involves many enthusiastic community workers taking actions that require professional health care knowledge, the leadership style of the coordinator plays a decisive role. Either for the Community Development Association or for the Community Health Promotion Development Centre, their leaders need to carefully survey these organisations' founding objectives, service spectrum, working performance, as well as members of the related supervising councils (Steedman and Rabinowicz 2006; Petriwskyj 2007; Skoglund 2006; Brennan and Brown 2008; Nemcek and Sabatier 2003; Theodori 2008; Fedi, Mannarini, and Maton 2009; Sung et al. 2006; Huang and Chang 2010). The success of any community development project relies not only on the efforts of general managers, board of supervisors, directors and members of certain councils, but also on the support of all the residents in the community (Robertson and Minkler 1994; Theodori 2008; Fedi, Mannarini, and Maton 2009). The supervision and active support of the sponsors in the county/city government is essential to the performance of many organisational and professional tasks. These include the routine operation of a centre, volunteer recruitment and management, direct caring service, data archiving, financial management, as well as a robust process for evaluation of outcomes (Haddad 2004; Yoshioka-maeda et al. 2006; Munns et al. 2004). A recent positive development is that most of the sponsors in the county or city government have already engaged academic resources such as tertiary colleges and professional teachers in full-time community consulting. This practice is an encouraging sign for active communities (Munns et al. 2004; Molloy and Caraher 2000; Murashima et al. 2002; Taylor and Pancer 2007).

Upon initial establishment, most of the Community Development Associations in Taiwan begin their operation by cleaning up the community environment. Environmental teams can still be found in nearly every community. Personal safety and protection are also a priority leading to the formation of mutual helping teams for neighbourhood patrol and vigilance (Huang and Chang 2010; MOI 2008; Huang and Wang 2005). With accumulated experience, community work begins to take on a more professional approach. Caring for community members becomes a major concern and a new list of services are developed and provided, for example, women's talent developing classes, life adjustment courses for foreign spouses, meal services and caring for the elderly.

Usefulness of volunteers to nurses in Taiwan

Health promotion volunteers work alongside community health nurses affiliated with the local community. The nurses recommend the relevant health promotion activities that volunteers should undertake and attend regular health promotion volunteer meetings (Murashima et al. 2002; Yoshioka-maeda et al. 2006). Meeting at regular intervals can provide useful consulting and enable effective communication to help volunteers deal with any problems arising from the volunteering process. Interactions among volunteers often bring forth opinion leaders who can further facilitate problem solving among a group of volunteers. For example, the community health nurses initially take responsibility for coordination and planning. Eventually, volunteers begin to cooperate with one another spontaneously (Akintola 2011; Healy et al. 2008). Volunteers working at a 'Health Promotion Vitality Station' sometimes provide blood pressure measurement services for community residents. In some cases, residents who are surprised by their high blood pressure suspect volunteers' ability or the blood pressure meter's functioning. Mistrust by residents is something volunteers have difficulty dealing with. However, through role-playing and communication training provided

in the regularly held consultation meetings, volunteers learn to overcome their frustration and anxiety.

The fact that volunteers offer their services of their own free will does not mean that they are not in need of emotional and spiritual support. Besides a greatly diversified multi-dimensional training program, the volunteers need to appreciate their achievements to strengthen their self-confidence. When volunteers start to share healthy living practices with their neighbours, this could be interpreted as a sign that the community health promotion has indeed taken root (Campbell et al. 2008; Sung et al. 2006).

The Ottawa Charter for Health Promotion identifies five action areas: (a) build healthy public policy, (b) create supportive environments, (c) strengthen community action, (d) develop personal skills, and (e) re-orientate health care services toward prevention of illness and promotion of health (WHO 1986). Thus, it is vital to go beyond personal skills to include community actions to facilitate desired effectiveness and implementation. Volunteers provide support to community health nurses in all of these areas.

Community development aspires to the principle of 'bottom-up' preventive health practices. In Taiwan, however, this still requires coordination and cooperation between government (the Bureau of Public Health and the Public Health Centres) and civil society—the principle of both bottom-up and top-down—to drive the movement further. Obviously, community health nurses are crucial to these processes, and suggestions have been put forward regarding the roles and functions of the Community Health Nurses (Guo, Hsu, and Lin 2008; Murashima et al. 2002; Lindsey, Sheilds, and Stajduhar 1999).

These include:

(1) Understanding the local demands and building up the community databases before proposing any health issues:

A sensible way to begin community health development is to utilise proper evaluative instruments to collect various kinds of community information, for example, health statistics, demographic characteristics, and a survey of community health demands. The collected databases can then be further archived and managed. The database should not only include community culture, custom and health activity documents, but also demographic information and health statistics. Management of this database entails categorisation according to the characteristics of illness or of health. The archiving and management of the database provides a good foundation on which later developments can be based. Only with a comprehensive understanding of what the community desires, can development centres mobilize residents' support and engagement to achieve the ideal of healthy daily life.

(2) Mobilising volunteers to cultivate the organizational culture to implement the ideal of health promotion:

Volunteers are the key to community health development. Many surveys show that residents will, after volunteers' introduction of health concepts, follow the physicians' advice and adjust their behaviour accordingly (Kaczorowski et al. 2011; Releford et al. 2010; Flora and Gillespie 2009; Coady 2009). Examples here include that the clientele will comply with a suggestion regarding healthy, optimum amounts of exercise and regular monitoring of their own blood pressure and blood sugar levels. Volunteers are an indispensible human resource and they perform various functions, from committee member to program participant.

(3) Themes and strategies of health promotion activities should be multi-dimensional and based on daily life:

Often, residents ignore the significance of their own self-management as a result of ascribing health management issues as the responsibility of medical professionals. However, the literature clearly reflects the notion that good practice in daily life is essential for illness prevention. In this regard, some creative and refreshing health issues have been useful. For example, an interactive lecture 'Do food and medicines belong to the same family?' assists people to distinguish and select correct foods from Chinese medicines or herbs. On the other hand, topics like 'Searching for spiritual oasis!' are aimed at calling residents' attention to the different aspects of holistic health: body, mind, and spirit.

(4) Enhancing scientific study on community health issues:

The ideal of community health development is a community-based service that aspires to explore and integrate resources in the community to form a health caring community in action. At different stages, the centres will present and share their achievements with the populace and hope to invigorate the volunteers' and residents' aspirations. A gradual investigation and analysis of health key issues, including community health problems, health awareness, service satisfaction and community participation of the resident, provides an important reference for policy strategies. These investigations are fertile ground for community health care nurses. In this way, they can address the prevalence of community health problems or investigate the risk factors of relevant diseases. They can employ descriptive methods in epidemiology to analyse the prevalence of health problems in the community and their impact on the community.

Conclusion

The staff of the Public Health Centres in Taiwan at all levels, such as village, town and city, habitually receive orders from the Bureau of Public Health. Consequently, they often have difficulty either in taking the initiative or in handling problems flexibly. It is an issue of

enduring importance to transform the role of the community health nurses and volunteers to one of information-provider, sponsor, counsellor, and evaluator. Without this shift in understanding their roles, the desired enhancement of the staff's ability could hardly be expected. The learning and adjustment process of the new role requires coordination and planning (Guo, Hsu, and Lin 2008; Yoshioka-maeda et al. 2006; Huang and Chang 2010).

Finally, it is vital for community health nurses and volunteers to encourage community residents to live up to the principles of both 'cherishing oneself' and 'caring for the community' at the same time. This is a way of living that involves practicing healthy lifestyle and learning and spreading correct health information. Furthermore, the ideal of 'healthy public policy' can be realized via effective action in communities that intend to become healthy, harmonious environments for all.

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1.6 Summary of this chapter

This chapter has outlined the research problem and significance and provided an overview of the study aims, research questions and design. The chapter also includes a discussion paper on the usefulness of volunteers. The main ideas expressed in this chapter conclude that while community health volunteers are a valuable asset to health care in Taiwan, there is little evidence of the stress or burden placed upon. It is also evident that there is not a validated and reliable tool that can be used to measure the burden experienced by the volunteers.

1.7 Summary of this thesis

Chapter two includes an overview of the literature available related to the burden placed on volunteers in general and community health volunteers in Taiwan in particular. The chapter also includes an integrated literature review manuscript currently under review. Chapter three addresses the design, methods and procedures of the study. It also covers ethical issues. Chapter four presents the qualitative results used to guide the initial development of the instrument. These results are presented in the form of a manuscript offered for publication. Chapter five presents the findings of the tool development and testing. Once again this is primarily achieved through a manuscript prepared and submitted for publication. Chapter six presents the overall results of the survey of a sample of community health volunteers in Taiwan using the newly developed the Burden on Community Health Volunteers (BCHVs) instrument. A manuscript that presents these results is included in the chapter. The final chapter provides the limitations of the study, describes the recommendations resulting from the study, and concludes the thesis.

Chapter 2. Literature review

2.1 Introduction

This chapter commences with a discussion of the history and current concept of health promotion issues including healthy setting and community, community development and community health promotion development in Taiwan. In addition, the concept of volunteers and volunteering, including an overview of the current volunteering situation in community health in Taiwan, is offered. The review concludes with an overview of the literature surrounding the burden experienced by community health volunteers, including the relevant literature from Asia and Taiwan where available, focusing specifically on community health promotion volunteers. Very little information about community health volunteers in Taiwan was identified after an extensive literature search (Cinahl, Medline, PsycINFO, Proquest and Web of science). Using the terms such as: burden, work burdens and work burnout; health promotion volunteers and lay health workers; community health promotion development, community health building, healthy community, healthy city; a review of the literature was conducted (Cooper, 1989, 1998, 2010). The search demonstrated a gap in knowledge about the burden experienced by community health volunteers, especially the type used in Taiwan and similar Asian countries. An integrative review of the burden on community health volunteers is included in the chapter as a manuscript under review for publication.

2.2 Background to the study

The life expectancy in Taiwan has been increasing steadily over the past 30 years from age 67 to 78.2 years. This increase is linked to the improving level of life standards, the

performance of appropriate public health strategies and the improvement of medical technology (Ministry of the Interior) (MOI, 2008). Ageing population is a global trend and to maintain a high quality of life, the prevention and control of chronic diseases are extremely important.

While the major cause of death in the 1950s was due to infectious diseases, in recent years the major causes of death have changed to include chronic degenerative diseases; cardiovascular and cerebral vascular disease have increased most significantly. From 1992 to 2010 the nine main causes of death in Taiwan included cerebral vascular disease, heart disease, diabetes mellitus, hypertensive disease, nephritis, nephritic syndrome and nephropathy, accounting for 31.1% to 38.8% of total deaths (D. o. H. Bureau of Health Promotion, 2008a). The prevention and protection against chronic disease arises primarily from a healthy lifestyle approach to life. The notion of healthy lifestyle needs to be communicated to the general populace through health promotion activities, which aim to ultimately reduce the incidence, prevalence, disability limitation, and mortality associated with chronic diseases(Couto, 1990; Gine-Garriga et al., 2009; Librett, Yore, Buchner, & Schmid, 2005).

2.2.1 Health promotion performed via community health promotion development

Industrialised and developing countries across the globe have reformed their policies to promote citizen health in recognition that life-style plays a significant role in health (Lalonde, 1974). Health professionals and governmental organisations originally led most of these health-promoting projects. However, community health promotion development programs provide a process to break traditional boundaries between

governmental and non-governmental organisations, consolidate community resources and enhance the active participation of community residents in promoting community health (D. o. H. Bureau of Health Promotion, 2011). The community health promotion development programs in Taiwan have now become a means of dealing with local concerns. Furthermore, the majority of research highlights the best accomplishment of this type of activity as being led by healthy community volunteers (Han, Kim, & Kim, 2007; Librett, et al., 2005; McBride & Korczak, 2007; McMurray, 2007; Shenson, Benson, & Harris, 2008).

2.2.2 The role of volunteers in community health promotion development centres

The work of volunteers increases the service hours and range of services available at community health centres in Taiwan. Without these volunteers, many health promotion activities in Taiwan would cease to be available to the people. The volunteers take on many roles such as: encouraging the use of health centres for high risk groups, reinforcing healthy diets and exercise, promoting regular screening, establishing occupational health management to prevent metabolic syndrome and other work and lifestyle related disorders, providing appropriate health education for illiterate elderly or those with only elementary school education, building healthy attitudes for long-term medication users, and educating people how to live with chronic disease, as well as performing self-care (Daniels, et al., 2005; Haddad, 2004; Lan, 2006).

2.2.3 The situation regarding volunteers working in community health development

As a result of the introduction of volunteers into health promotion activities in Taiwan, the Community Health Nurses must not only apply their professional knowledge and

techniques to promote relevant health activities and provide care in the community, but they must also pay attention to the latest health promotion strategies in order to provide up-to-date training courses for the community health volunteers. Without the provision of up-to-date knowledge and training, the role of the volunteers in helping to establish a healthy community would be diminished (Chuang, 2001). While we know the government's resources are limited, the strength of the civilian community is enormous. There was a total of six years of (2002-2007) funding assistance from the government for the establishment of community health centres in Taiwan. Since funding ceased, unfortunately some centres have not been able to continue recruiting volunteers nor integrating manpower and materials from the local community, nor health promotion by and with the community (MOI, 2008). As a result, several community health centres withdrew slowly but surely without stable funding and other resources from the government or community. However, some centres have used volunteers extensively and successfully as a way to continue to offer health promotion activities for their community as a low cost alternative.

2.3 Background to the Problem

In Taiwan, there are a total of 150-300 Community Health Promotion Development Centres in cities and counties. These centres have contributed to the healthy community-development programme from 1999 to 2006 (Department of Health, the Executive Yuan, 2006). The volunteers of each community health centre directly educate and promote on-site residents to encourage healthy lifestyles. Volunteers are important to the delivery of health services because they help to implement healthy concepts and healthy lifestyle education in their local community and complement the paid workforce in the area (C. M. Chen & Yang, 2006; Z. G. Chen, 2001; Couto, 1990;

C. L. Huang & Wang, 2005). However, community health volunteers may not only face negative attitudes that lead to frustration in their work, but also be engaged in other forms of volunteering, which could result in a high attrition rate. Research has demonstrated that the burden on other types of informal carers, such as carers of the elderly and the mentally ill, is immense. The burden for these carers includes work load about physical labour, emotional and time loading; deficiency of information; insufficient emotional support from family, volunteers, Community Health Nurses, and residents; lack of instrumental support; deficits in communication skills; lack of cooperation skills and lack of confidence (Campbell, et al., 2008; Chuang, 2001; Guan, 2002; Knight, et al., 2000; Nan, 2002; Zheng, 2001). A recent study on volunteers was undertaken in Japan to describe and validate a tool designed to measure the burden on health promotion volunteers in Japan, but due to insufficient information published, it was difficult to understand how the scale was developed and whether it was used to measure the exact type of volunteer behaviour that is the aim of this study (Murayama, et al., 2006). Other than the study conducted by Murayama et al. (2006), there is no available information that addresses the burden experienced by community health volunteers in the carrying out of their role in Taiwan or a similar country, or a scale developed for the purpose of the measurement of burden on this particular cohort.

The availability of a burden assessment questionnaire for health promotion volunteers in Taiwan would allow Community Health Nurses to use the scale to assess volunteers and develop and implement indicated interventions to reduce attrition as required. Ultimately, the outcome would be improved retention of health promotion volunteers because burden could be identified early and strategies implemented to help overcome the problem. This is urgently needed as community health volunteers in Taiwan are

currently lost at a rate which could be significantly reduced if a better understanding of burden was available For example, the number of volunteers who obtained an honorary award for volunteer services of more than five hundred hours a year in Taoyuan County Government, was reduced by approximately 10% in the last year (Taoyuan County Government, 2011). Additionally, support of volunteers is essential to reduce the frustration about nonprofessional unpaid work, and could be brought about through a series of training programs. Thus, a study to develop and test a tool to measure the current level of burden on community health volunteers, and the measurement of the current burden experienced by that cohort, should be regarded as an important and urgent need (I. chuan Li, Lin, & Chen, 2007; M. C. Lin, Li, & Lin, 2007). This current research addresses what constitutes the burden experienced by volunteers, measures the degree of burden for volunteers, and suggests strategies that can be implemented to reduce the burden on volunteers as a way to reduce attrition rates in the future. The study will also assist to determine whether the burden experienced by volunteers differs between the different levels of novice, experienced and veteran health promotion volunteers.

2.4 Health promotion as stemming from WHO initiatives

The World Health Organisation (WHO) in 1978 declared in “Health for All” (WHO, 1978) that every person should be able to obtain Primary Health Care. It was expected that this programme could be achieved by the 2000 Alma-Ata for the Primary Health Care Seminar. Seven world conferences portrayed sustaining statements for health promotion and healthy public policy (WHO, 2009). One of the first implementations of the WHO goals was the Ottawa Healthy Community Project in 1986. The original committed approach from the Ottawa Charter was on Health Promotion to improve the

quality of life with, additionally, emphasis on the main challenges for executing the health promotion process, such as, (1) formulating a healthy public policy in all sectors and at all levels, (2) creating supportive environments so it is easier to be healthy, (3) strengthening community action with self-help and social support, (4) developing personal skills as people take responsibility for their own health and (5) reorienting health services toward promoting health and preventing disease. The WHO (1986) also presented the Health Promotion Emblem (figure 2-1). These challenges would be standardised to apply appropriate strategies at local, regional, and national levels (Couto, 1990; WHO, 1986).

Figure 2.1: The Health Promotion Emblem

Since the 1980s, important efforts have been made to improve health by focusing on changing the behaviour of individuals in order to achieve healthy lifestyles. Unfortunately, lifestyle changes are extremely difficult for many people, especially the

poor or low-income earners and those with little education; they lack the resources to make the non-obligatory personal changes. Several studies have recommended that health promotion should move beyond lifestyle changes to the formation of supportive environments within which healthy living can take place (Casey, 2007; Edwards & Tsouros, 2008; Flocke, Gordon, & Pomiecko, 2006; McBride & Korczak, 2007; Naumanen, 2006). Therefore, community development and broader environmental approaches to health promotion have become more popular.

In the past 30 years, there has been an enormous growth in the volume of research relevant to health promotion. This expanding research has advanced knowledge, especially as to how non-communicable diseases are speedily emerging to replace communicable diseases in developing countries (WHO, 2006). It has also improved understanding of the determinants of health in populations and has acquainted those working in the health promotion field with information as to how to bring about change in those determinants to improve health . Arising from this, the following two health determinations have been identified by the WHO: 1. reducing the burdens of non-communicable diseases is believed to dependent on controlling several modifiable risk factors, including healthy life styles; 2. unhealthy lifestyles are considered a major risk factor for a number of chronic diseases, including cardiovascular diseases, diabetes mellitus, obesity, osteoporosis and certain types of cancer (WHO, 2002). Lack of healthy lifestyles is also linked to other health problems such as prematurity and maternal mortality (dos Santos, da Ros, Crepaldi, & Ramos, 2006; Kelley & Abraham, 2007; Markle-Reid et al., 2006; Meng, Wamsley, Eggert, & Van Nostrand, 2007; Seedsman, 2007; Tseng & Lin, 2008; Zunker et al., 2008).

2.4.1 The means for health promotion

Health promotion is not static in space and time, and as a process does not involve a single act and a clear outcome (WHO, 2003). For example, at the Second International Conference on Health Promotion participants recognised that governments promote health by linking economic, social and health policies for the equity of health need and the development of new partnerships with business, trade union, nongovernmental organisations and community groups (WHO, 1988). In addition, people empowerment and community participation were seen as essential factors in a democratic health promotion approach and the driving force for self- reliance and development that was reinforced in the Third World Conference in Sundsvall (WHO, 1991). Health promotion action comprises understanding changes among all participants and addressing preliminary concerns from the community, not from a health agency. This is, in essence, a decision-making process figured by a broader context established by all relevant divisions and all levels in order to create supportive environments for health (Altman, 1995; Brennan & Israel, 2008; Taiwan Department of Health [DOH], 2000). Health promotion practice is adapted to the local needs and takes into its description social, cultural and economic circumstances. Health promotion works through strengthening community actions (Edwards & Tsouros, 2008).

Furthermore, five priorities for health promotion in the 21st century were mentioned in the Jakarta Declaration (WHO, 1997): 1. Promote social responsibility for health, 2. Increase investments for health development, 3. Consolidate and expand partnerships for health, 4. Increase community capacity and empower the individual and 5. Secure an infrastructure for health promotion. The spirit of this process is the empowerment of communities; their ownership and control of the factors that create health. Effective

community action is community development that focuses on existing community resources to increase mutual help and social support and to develop flexible systems for strengthening public participation in health matters (C. M. Chen & Yang, 2006; Courtney, 1995). Community empowerment and participation are seen as essential factors in a democratic health promotion approach and the driving force for self-reliance and development (Z. G. Chen, 2001; WHO, 1992). In health promotion, partnerships for health and social development are consolidated and expanded among different divisions at all community levels. Partners must mutually understand and respect each other. Through the sharing of expertise, skills, and resources, partnerships can offer mutual benefits for health (WHO, 1992). This community empowerment and participation is seen to be more effectively implemented through programs to develop the community (Edwards & Tsouros, 2008; WHO, 2003).

2.4.2 Healthy cities and settings for health promotion

The development of the healthy cities and community's movement has been guided by the concepts of health promotion and health policy. The healthy cities/communities movement for health promotion, encouraged by Hancock and Duhl, was first implemented in 1986 through the Healthy Cities Project. They reflected health promotion concepts in the definition of a healthy city (Hancock, 1993, p. 7).

"*A healthy city is one that is continually creating and improving those physical and social environments and strengthening those community resources which enable people to mutually support each other in performing all the functions of life and achieving their maximum potential*."

The European Healthy Cities Project started with 11 cities in 1986. Within 5 years, 35 cities were officially registered in the project, and an additional 400 European cities and towns were less closely affiliated (Hancock, 1993). By 2000, the movement was represented in every WHO region, and had spread to more than 3,000 communities in more than 50 countries (Norris & Pittman, 2000; WHO, 2009).

In response to the concepts of "Healthy City" from the WHO, many counties and cities in Taiwan, such as Tainan City, Taipei City, Miaoli County, Hualien County and Kaohsiung City, have launched "Healthy City Project" since 2003. The projects were integrated by professional investigation teams and local governments who viewed the city residents' health needs and problems in terms of enhancing the relationships across different governmental departments, academic units and public and private sectors to establish healthy policies through a cooperative mechanism. Each county or city has its unique characteristics and different operational models would be valuable to further examine and study.

The general objectives of the Healthy City Project are: (1) to establish a Healthy City Network in Taiwan and to set up a nationwide healthy city indicators for the cities and counties; (2) to assist cities or counties to build up healthy city programs and to exchange related experiences; (3) to promote international cooperation and to help cities and counties to participate in "the Alliance for Healthy Cities" (AFHC), Western Pacific Region, WHO, such as the Healthy City Certification of Hualien County from AFHC in 2007; (4) to compare the impetus mechanism and the pattern of healthy cities in Taiwan and (5) to suggest future policies and recommendations for initiating healthy city projects (D. o. H. Bureau of Health Promotion, 2008a, 2009, 2010).

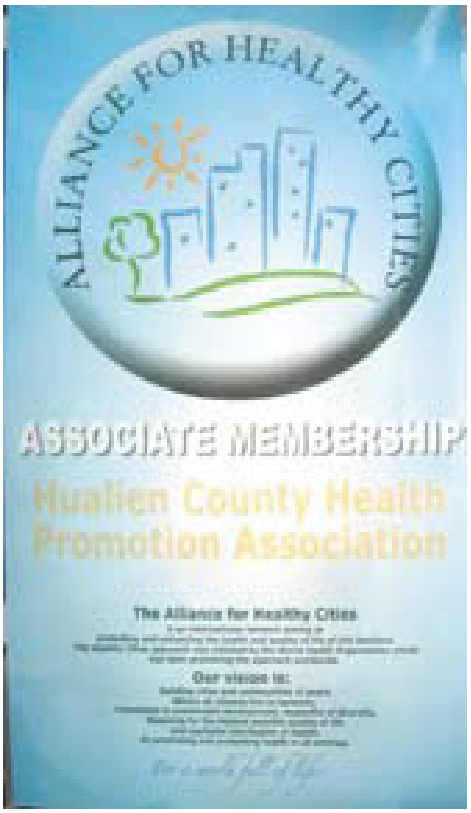

Figure 2.2: Healthy City Certification of Hualien County from (AFHC), Western Pacific Region, WHO

Nevertheless, Theodori (2005) has argued, in relation to the project of Healthy Communities in Canada, that healthy communities should be the preferred term rather than healthy cities for three reasons: the first was the term "cities" was too “exclusionary” because many of its members were small municipalities and lots of places had not been considered as “cities” in Canada. Then, there was a concern with the need to develop projects in smaller sections of municipalities rather than the whole city. Finally, a strong community mobilisation was required to perform health promotion. Therefore, the project changed the term into “health setting or health community” because it includes many small communities. That means that community organisations can be supported from the beginning, while they work to put the project on the local political agenda. As Norris and Pittman (2000, p. 119) portrayed in their overview of a healthy community: *“Healthy communities are powerful because they*

help unleash human potential. They build trust and relationships. They mobilize the creativity and resources of the community toward a shared vision for the future. Healthy communities call for inspired leadership from every corner of the community."

2.4.3 Health promotion performance in Taiwan

The earlier stages of Taiwan's community development in the 1960s was dedicated to carrying out various governmental policies, such as ameliorating personal and environmental sanitation to control infectious disease, improving nutrition and family planning to diminish Taiwan's high birth rate (Z. G. Chen, 2001). Today, community development initiatives have a quite different focus, for example, identifying issues and problems affecting community life; developing and implementing plans for change; enhancing community strength and self-sufficiency; and establishing and maintaining cooperative and harmonious relationships (Gee, Smucker, Chin, & Curlin, 2005) (Table 2.1). As such, community development is not a just a 'health intervention', neither is it a community-based programme, although all approaches may contribute to improving the community's health such as personal and environment sanitation, health education and populace nutrition. Community development is viewed as a democratic process and a social process (Altman, 1995; Neil Bracht, 1999; Guan, 2002) and a means by which the community can become actively involved in improving its well-being (N Bracht, Kingsbury, & Rissel, 1999; D. o. H. Bureau of Health Promotion, 2011).

TABLE 2.1: THE DEVELOPMENT PROCESS OF COMMUNITY HEALTH DEVELOPMENT IN TAIWAN

year	Regulations and issues	Participation	the main challenges for executing

		of community	the health promotion process from the Ottawa Charter
1951-1977 the main issues are: improve the environment and service the local community			
1951	"To improve the sanitation of the environment" is one of the reforms	Passive and top-to-bottom community service	(1) formulating a health public policy (2) creating supportive environments
1954	1. To establish "a supervised group to improve the sanitation of the environment of Taiwan Province" 2. To monitor and regulate " the, bonus-penalty system for improving the sanitation of the environment which gives rise to community competition"		(1) formulating a health public policy (2) creating supportive environments
1959	1. To set up the bureau of health education within the department of health. 2. To promote relevant health education in the districts for community development. 3. To carry out model community group in improving the sanitation of the environment		(1) formulating a health public policy (2) creating supportive environments
1963	Public Health Nurses set into action to conduct local people in improving personal and environment sanitation		(1) formulating a health public policy (2) creating supportive environments (4) developing personal skills
1966	To promulgate the facilities of community public sanitation of the reformative project, such as to build public toilets and community wells		(1) formulating a health public policy (2) creating supportive environments, (4) developing personal skills
1968	To promulgate the outline of brief works of community development		(1) formulating a health public policy
1969	To promulgate the eight-year project of community development		(1) formulating a health public policy
1972	1.To modify the project; extend it to a ten-year community development project 2. To built an appropriate route for community development		(1) formulating a health public policy
The World Health Organisation (WHO) in 1978 declared in "Health for All" (WHO, 1978) that every person should be able to obtain Primary Health Care. It was hoped that this programme could be achieved by the 2000 Alma-Ata for primary health care seminar.			
1979-1998, the stage of community health issues committee development; local residents commence participation in project.			
1979	1. Commence the establishment of	Community	(1) formulating a health public

	15 health issue promotion committees in townships, towns, and cities. 2. The leaders of communities participate along with the Health Department to consider the policies and affairs of community health issues.	residents are active and participate in the health decisions of the local town, but the effect is paucity in some health promotion committees	policy, (3) strengthening community action,
1991	To set up community development associations, and to outline the social development work.		(1) formulating a health public policy, (2) creating supportive environments (3) strengthening community action (4) developing personal skills, services
1995	To establish 336 health promotion committees in every township in Taiwan		Same as above
1994	Council for Culture Affairs, Executive Yuan addressed the "Community Integral Construction Project" and expected to establish "mutual awareness between the local communities " in Taiwan. (This challenge was emphasised to allow coordination between local residents, private enterprise and government. The main criteria were based on the characteristics and history of each particular community and assisted local residents to explore their specific natural resources).	The process is bottom-up and community residents are active in health promotion	(1) formulating a health public policy (2) creating supportive environments (3) strengthening community action (4) developing personal skills
1999-2001 The commencement of community health promotion development - pilot study			
1999	The Department of Health declared "community health promotion development 3-year Project" for a pilot study.	The process is bottom-up and encourages community participation in the action	(1) formulating a health public policy (3) strengthening community action (4) developing personal skills
2002	The Department of Health supported funds for "New Counties for the Community Development Project"		(1) formulating a health public policy (2) creating supportive environments (3) strengthening community action (4) developing personal skills, and (5) reorienting health services
2002 Addition of health issues such as healthy environment and safe community			

2003	Total of 31communities set into action for healthy environment and safety space development: 1. To evaluate the model communities 2.To set into action non-smoking restaurants, industries and schools to reduce the damage of secondary smoking		(1) formulating a health public policy (2) creating supportive environments (3) strengthening community action (4) developing personal skills services

❋Formatted by the researcher

Although there was extensive global growth of the Healthy City Projects, Taiwan did not commence offering healthy community development schemes until 1999. In 1999 the Taiwanese Department of Health announced the political commitment to build a healthy nation through the Healthy Cities Project (Department of Health (DoH), Executive Yuan, Taiwan, 1999). Community organisations, established from some institutions such as the Health Promotion Departments of hospitals, Community Development Associations or the Public Health Clinics (Centres), were called upon by this nationwide proposal to establish Community Health Promotion Development (Building) Centres for health promotion. The Department of Health (DoH, Executive Yuan, Taiwan, 1999) also identified many essential health issues for communities: healthy lifestyles in terms of healthy diet and physical fitness, oral health, prevention of tobacco and betel nut use and medication safety. It is believed that concentrating efforts in these areas will enable community organizations that are not health care based to focus on health promotion, health protection and illness prevention.

In addition, according to the vision of the Department of Health, this has always been set on establishing 'A Healthy Taiwan – Providing the Public a Healthy and Safe Lifestyle'; such as, serving as a catalyst in improving the health of the people, educating the people toward a healthy lifestyle, paving the road for the health industry and participating in international health affairs. Therefore, five strategies were suggested on

integrating health management into populace lifestyles (D. o. H. Bureau of Health Promotion, 2006, 2010):

- Establish a eugenic health care-friendly environment.
- Establish a public policy on health in order to develop the country's health risk evaluation mechanism.
- Establish a supportive environment in order to build a healthy lifestyle.
- Enhance community mobility for the development of healthier metropolitan areas.
- A comprehensive chronic disease care network paving the way for integrative preventive health care services.

The Community Health Promotions Development Programme is expected (1) to be a process that breaks traditional boundaries between government and non-governmental organizations and different professional strengths, (2) to stimulate the populace and initiate participation in the mechanism of the local community's decision-making, (3) to respect cultural poly-tropism, (4) to induce health in daily life, (5) to establish self determined health in the community's residents, (6) to look after the demands of different priorities, (7) to establish a health life support environment together with the residents, (8) to practice healthy lifestyles with the mutual support of the residents and (9) to build health promotion together within the community (D. o. H. Bureau of Health Promotion, 2011) (H. S. Chen, 2004; Z. G. Chen, 2001). In 2000, The Bureau of Health Promotion of the Department of Health announced the sustaining and the significance of community health promotion as very important and emphasised the following goals and strategies (Table 2.2):

TABLE 2.2: GOALS AND STRATEGIES AS EMPHASISED BY THE BUREAU OF HEALTH PROMOTION

goals	strategies
◎ focus on work that is presently feasible	◎ everybody prepares well: identifying and planning health promotion activity before beginning
◎ maintain simplicity and flexibility	◎ use ones spontaneity and energy to stimulate the community's potential power
◎ stimulate and maintain the strength of the action	◎ do not momentarily forget to seek out talent
◎ identify health benefits to the individual and the community	◎ foster and create vitality when people commit together
◎ find a way to keep going	◎ grant credit to others, praise others' contribution publicly

The community is the most basic unit for implementing the government policy. It is hoped that, through public learning and participation, community consciousness and self-determination may be aroused to establish a healthy and supportive environment and build a healthy community together. The contents and tasks of the program include:

- "Engage in community resource integration and operation based on the existing foundation of the promotion committee.
- Volunteers are recruited and trained to organise and operate systematically and fulfil the functions of demonstration and promotion.

- Encourage community residents to attend preventive services screening and health promotion activities through organized community health-building strategies.
- Promote the following health issues:

  (a) Tobacco hazards prevention and control

  (b) Depending on the characteristics and life styles of the community respectively, propose at least one optional community health promotion issue, such as mental health, cancer prevention and control, prevention of health hazards of betel quid chewing, chronic diseases prevention and control, accidents and injury prevention and control, prenatal care, teenager sex education, oral health care, vision care, safe medication practice, building support network, e.g. foreign spouse health promotion, breastfeeding, menopause health care (including prevention and treatment of osteoporosis and incontinence), elderly care…." (D. O. H., Bureau of Health Promotion, 2008b, p.1).

In other words, the authorities hope that community members or volunteers can take responsibility for the control of their individual health issues. The community populace or volunteers know how to work together in finding the health issues which affect their health condition, then, making improvements as a part of everyday life through the different capabilities and resources that the community association have to offer. It is a further expectation that local populace would take the opportunity to promote activities appropriate to their community in promoting an overall healthy environment, which also serves to raise the quality of life and health literacy (D. o. H. Bureau of Health Promotion, 2008a, 2011). Members of the community and volunteers work together to

address an issue and at the same time become fitter and healthier. The group decides to form a self-regulating committee and seeks assistance from community healthy development experts. Group members or volunteers then devise plans to deal with community health issues and even set down an agreement for community members or volunteers to sign, agreeing to continue community health standards. Through the experience, the population finds an important outcome of the process is a socialised public health policy. They find if they embrace rational debate and dialogue, then a common compromise can be accomplished and provide a basis for general community health as well as the best policies for local health needs (D. o. H. Bureau of Health Promotion, 2008a, 2011).

By the middle of 2005, Government funded community health promotion programmes had set up 325 Community Health Development Centres in 368 townships in Taiwan (C. M. Chen & Yang, 2006). The DoH suggested that the field of community health promotion development lacked an appropriate infrastructure to develop an evaluation programme (Guan, 2002), such as monitoring the performance of volunteers and the health promotion organisation, the retention strategy of volunteers, the state of health of local residents, and so on. A grounded theory approach was used to explore the performance of these centres in Taiwan. Three in-depth interviews with managers of the Community Health Promotion Development Centres were conducted in early 2003. The research identified four themes to emphasise sustainable strategies for community health promotion development: (1) community, health and development are established through the core strategies because they are based on prior community health assessment, (2) healthy lifestyle, presenting a model of volunteers is the best health promotion tool for successful sustaining of health promotion activities in a local

community, (3) a healthy life results from the local health promotion model considering cultural characteristics and (4) integration extends the health concept, bringing even other communities into the local community (C. M. Chen & Yang, 2006).

A further research project on the successful implementation of Community Health Promotion Development Centres in the north of Taiwan made the following recommendations:

(1) The characteristics of community health centre leaders should be developed from community grassroots; those who helped identify barriers to health and designed community solutions, served as the voice of the community by being liaisons between communities, organizations, and institutions. By serving these traditional roles, the leader promoted the concept of community mutual health promotion projects by networking through local churches, temples, organisations and work places.

(2) The mobilisation of volunteers should be flexible. First, new members must be recruited via the Mechanism for Recruiting to replace those who leave or expand a centre or organisation. Second, those in need of services must be matched with centres or organisations that can serve their needs. Finally, centres or organisations must continually reassess how well they are serving the community.

(3) The management systems of volunteers should be strengthened such as the standardisation of the encouragement system, the development of funding resources, the building benefit of a three way (government, community and individual) win-win situation, the establishment of cooperation with interested relevant organisations to arrange alliances to enable the sharing of resources and support (Gau, 2006). Thus, all the strategies and themes emphasise the meaning and significance of volunteers.

2.5 Volunteers and volunteering

2.5.1 The definition of volunteers

A volunteer may or may not get paid or receive compensation for services rendered (BLS, 2009; Jeni Warburton & Oppenheimer, 2000). Volunteers work for the benefit of the environment primarily because they choose to do so. The word comes from a French derivative that is translated as "will" (as in doing something out of one's own free will). Many such services occur through a non-profit organisation (NPO) – sometimes referred to as formal volunteering, but a significant number also serve less formally, either individually or as part of a group.

Volunteers and volunteering are exceptionally important worldwide and are historically significant, as well as being important for the political, social and economic systems (Jeni Warburton & Oppenheimer, 2000). Volunteering could occur in many forms: serving food at the local homeless shelter, providing computer technical support to a non-profit organisation, acting in a leadership capacity on a charitable organisation's board of directors or coordinating the emergency response in the case of a disaster (BLS, 2009). Around the world volunteer centres exist to support the voluntary sector and make a difference in the communities that they serve.

Omoto, Snyder and Hackett (2010, p. 1706), explain, "volunteerism includes freely chosen and deliberate helping that extends over time, that is engaged in without expectation of compensation, often through organizations or agencies, and that is performed on behalf of causes or individuals who desire assistance". This concept of volunteering is summarised from their various studies regarding AIDS volunteerism.

Merrill (2006, p. 10) identified the four defining tenants of volunteering:

"… (a) The volunteering act involves active participation or contributions of time, energy or talent; it is not giving of financial or material resources as a sponsor. (b) Volunteering Individuals give of their time, energy and talent freely and for whatever motivations. (c) Volunteering is not primarily motivated by financial gain. The financial remunerations have been termed reimbursement, stipend or living expenses, but never salary. (d) Volunteering focuses on the common good. …"

Specifically, according to the research of Petriwskyj and Warburton (2007), the definition of volunteering is an activity that is undertaken: with a primary purpose other than financial reward (philanthropic service giving), for a common goal or the good of others (mutual aid or self-help activities), of the person's own free will and without coercion, without the intention to cause harm.

In addition, the research project undertaken by Kenny, McNevin, and Hogan (2008, p 46) used the voluntary activity definitions, meaning "an activity (a) is of benefit to the community; (b) is undertaken without coercion; and (c) is without monetary reward, " as well as is limited to activity that takes place in an organised context (Kenny, McNevin, & Hogan, 2008). The authors also portrayed the voluntary activities in Australia that were "…ranging from traditional civic commitment (such as supporting opportunity shops), volunteer involvement in service delivery (such as meals on wheels), participation in decision-making roles (such as community planning and management activities), to self-directed social and political activities (such as 'philosophy in the pub,' a local book club or political activism)…" (p. 46) City Councils

encourage and support voluntary activity of community members to assist in the development and conduct of community plans. Some Council fund and facilitate the work of community organisations and support community members to link with overseas communities.

2.5.2 The participative motivation of volunteering

The participative motivations of people volunteering include factors such as desire for personal development, use of free time appropriately to help and provide service to others, obtain social experiences and qualifications, give feedback to the society, from altruistic values, provide a sense of understanding of the world, and so on (C. L. Chang, 2006; Finkelstein, 2010; Finkelstien, 2009; O'Brien, Townsend, & Ebden, 2010). One study identified how a difference in motivation can encourage a person's volunteering as primary motivators- "response to God" and "response to human needs in their community and the ways that they can make a difference"—those motivators that lead volunteers to become involved initially; and as secondary motivators -"human beneficial relationships" and "other personal benefits"—benefits that volunteers experienced in the process of volunteering that became motivations along with the primary motivators, for continuing to serve (Garland, Myers, & Wolfer, 2009, p. 28).

Further, Omoto and Snyder (2002) utilised an exploratory and confirmatory factor analysis techniques in multiple samples to identify five primary motivations for AIDS volunteerism. The investigations of the motivations of volunteerism had indicated: (a) their personal values or to satisfy felt humanitarian obligations to help others, (b) community concern. (c) greater understanding of AIDS and how people live with HIV disease, (d) reasons related to personal development such as to challenge themselves or

enlarge their social networks, and (e) to fulfil esteem enhancement needs such as to feel better about themselves or escape other pressures. In addition, findings revealed complex motivations underlying volunteering in AIDS care in South Africa. Consistent with functional theorising, most of the volunteers reported having more than one motive for enrolling as volunteers. Of the categories of motivations identified, those relating to altruistic concerns for others and community, employment or career benefits and a desire by the unemployed to avoid idleness were the most frequently mentioned, an opportunity to learn caring skills or to put their own skills to good use, for personal growth and to attract good things to themselves, a religious call, hoping to gain community recognition, dealing with a devastating experience of AIDS in the family or motivated for social reasons (Akintola, 2011), were most common.

However, to understand volunteer efforts, the particular activity undertaken by the volunteer should be reflected in the different aspects related to volunteer work: activity and training, emotions and perceptions, attitudes and behaviour, perceived benefits and costs and relationships with the organisation, peers and recipients. That is, to learn the engagement process of volunteers' experiences within the organisation prevents volunteers to turn from formal to informal sources (Haski-Leventhal & Bargal, 2008).

2.5.3 The participative limitations of volunteering (people who become volunteers)

A number of studies have described the reasons people tend not to participate in volunteer activities. Firstly, unwillingness to volunteer may be related to factors such as not recognising the advantages of volunteering, not wanting to participate even if

advantages of volunteering are understood, and not identifying with being able to accomplish volunteering. Secondly, there may be limitations of ability, such as timing, health condition, personal knowledge and personal ability or talent. Thirdly, there are factors of chance, for example, not being asked to participate, not having information about the volunteer service because very few in their circle of relationships know about the service or because there is no appropriate volunteer service in the local community (T. Y. Chen, 2003; M. C. Lin, et al., 2007; Merrill, 2006).

2.5.4 The factors involved in long-term or on-going volunteering

Haddad (2004), in a case study in Japan, found that volunteer participation should be conceptualised as more than just the function of an individual choice, but instead related to the legitimising, organising, and funding support of governmental and social institutions in particular. The study not only highlighted the importance of state-society interactions and cooperation in facilitating volunteer cooperation, but also drew attention to the important role that traditional, community-based organisations, such as neighbourhood associations, offered by providing valuable services to their communities. That is, vibrant volunteer participation in more traditional groups could not be undervalued, as the importance of these local organisations in providing services and spreading community norms is of great value (Haddad, 2004).

A further research study conducted by Grube and Piliavin (2000) obtained two samples of volunteers for the American Cancer Society (ACS) in an attempt to understand performance and retention of volunteers. This study used identity theory and included both general and specific role identity as well as organisational variables. The researchers explored the determinants and limits of threshold pressure beyond which

volunteers will simply leave rather than continue to suffer social pressures with which they are unable to comply. This study was thought to provide useful information to researchers and those who must manage volunteers: specific role identity was argued to be far more useful in the prediction of important organisational outcomes than the concept of organisational commitment (Grube & Piliavin, 2000).

A community-based perspective to understanding volunteers is particularly important as municipal (and national) governments struggle to provide services in the face of increasingly serious budget crises. Haddad (2004) suggested mechanisms that city employees and civic activists can use to encourage volunteer participation, thus enhancing the delivery of services in their communities. Ultimately, however, it is the practices of the state and society -how well they legitimise, fund, and organise volunteers- that determine the level of volunteer participation in a community. This community-based perspective opens up new avenues for thinking about the roles of volunteer organizations in democracies and points to concrete ways that citizens can improve volunteer participation in their own communities (Haddad, 2004).

2.5.5 The stages and transitions of being volunteers

Most researchers have divided volunteering into three stages of organisational socialisation: (1) anticipation or early socialisation, as people prepare to join; (2) accommodation, as people enter the organisation and learn the job; (3) adaptation, as people become full members (Farmer & Fedor, 2001; Grube & Piliavin, 2000). Others have described three sequential stages: (1) antecedents; (2) experiences; (3) consequences (Omoto & Snyder, 1995; Omoto, Snyder, & Martino, 2000). Table 2.3

provides an overview of the volunteer process model outlined by Omoto and Snyder (2002).

TABLE 2.3: THE VOLUNTEER PROCESS MODEL

Level of analysis	Stages of the volunteer process		
	Antecedents	Experiences	Consequences
Agency	Identify volunteers Recruit volunteers Train volunteers	Assign volunteers Track volunteers Delivery of services	Quantity and quality of services Retention and reenlistment Fulfilment of mission
Individual volunteer	Demographics Prior experiences Personality differences Resources and skills Motivations Identify concerns Expectations Existing social support	Volunteers' choice of role Volunteers' performance Relationship with client Support from agency, staff and other volunteers Organisational integration Satisfaction Stigmatisation	Changes in Knowledge, attitude, behaviour, motivation Identity development Commitment to volunteering Evaluation of volunteerism Commitment to organisation Recruit other volunteers Length of service
Social system	Social climates Community resource Culture context	Recipients of services Volunteers' social network Client's social network	Social diffusion Public education System of service delivery

(Omoto & Snyder, 2002, p. 849)

In brief, volunteering patterns have been found to have similar trends across the globe. These were described by Merrill (2006, p. 9) as: (1) the effect of timing pressure regarding to balance among the giving volunteering, family and friends; (2) the value of volunteering needs to illustrate the intrinsic action such as reciprocity, connectivity, participation and citizenship; (3) the volunteering programs are dependent on different demographic changes result in the extremes of the age continuum; (4) Volunteer recruitment, engagement and management require the greater development of pluralistic approach because of multicultural societies, the role of service, the gap between the rich and poor and so on; (5) the assessment of the value of volunteering such as impact on communities, organisations, volunteers or recipients takes to recognise the importance of reciprocity, social solidarity and citizenship.

Haski-Leventhal and Bargal (2008) completed an ethnographic study with Israeli volunteers working for at-risk youth. They described the organisational socialisation process of volunteers: the Volunteering Stages and Transitions Model (VSTM), the process through which one learns the job, internalises organisational values and goals, and becomes an effective and involved volunteer. The authors identified five different stages in volunteers' socialisation: nominee, newcomer, emotional involvement, established volunteering and retiring. The importance of the model is explained in the way the volunteers move between the phases and details the process, experiences, and emotions in each phase (Haski-Leventhal & Bargal, 2008). The detailed descriptions and aspects of volunteering are organised through five stages as shown in Table 2.4.

TABLE 2.4: THE CHANGE IN ASPECTS OF VOLUNTEERING THROUGH FIVE STAGES

Theme/ Phases	Activity	Emotions	Relationships	Motivation and commitment	Attitudes and perceptions	Costs and benefit
Nominee (1-2 months before entrance)	Applying to volunteer	Excitement mixed with fears and fantasies	Some have relationships with other volunteers; attraction to target population; attraction to organisational image	Motivation to volunteer: altruistic, egoistic and social; low commitment	Romantic idealism; high ambiguity; low satisfaction	A good feeling emerges as one applies to volunteer
Newcomer (first month)	Entering the field; trying to help as many as they can	Avoidance and frustration	Marginal members of group and organisation; recipients distrustful; helping by 'being' and focusing on quantifiable factors of help	Contact commitment; do not feel particularly needed	Limited idealism; high ambiguity; low satisfaction	Emotional strain; Frustration and sadness
Emotional involvement (4-8 months of volunteering)	Giving actual help	'Ups and downs'; deep sadness with high satisfaction	Close relationship with recipients may cause dilemmas; helping by 'doing'; focusing on quality of help; important group members	High commitment; identifying with organisation and clients	Sober idealism cause sadness; low ambiguity; high satisfaction	High emotional costs and secondary trauma mixed with feeling of satisfaction and meaningfulness
Established volunteering (after a year)	Giving actual help to fewer clients	Detached concern, burnout and fatigue	Close relations with fewer clients, no new contacts, helping by 'being', central and influential group and organisation members	Levels of commitment and feeling needed are low again	Realism, cynicism; low ambiguity (mainly regarding long-term results)	High awareness of the variety of costs and benefits related to volunteering
Retiring (after a or two years of volunteering	Separation from organisation, group and clients	Sadness mixed with relief	Separation and rites of passage, remembering the clients	Commitment to volunteering in general and social change	Gain back some general idealism	Putting all they gained from volunteering into perspective; hard to let go

(Haski-Leventhal, & Bargal, 2008, p. 76).

The benefits have been identified for the volunteers who participate in health programs, which indicate that the volunteers receive something in return for their time and commitment. For example, volunteers have reported an increase in self-esteem, a sense of involvement in worthwhile work, positive feelings about self, a sense of belonging, valuable work experience, access to health information and skills through training or contact with program staff, and a feeling of being energised (Davis, Leveille, & Logerfo, 1998; Flicker, 2008; Murayama H, 2007; Scorer, 2007) as a result of volunteering.

Interestingly, volunteers were described in six aspects of personal health as experiencing higher well being when compared with non-volunteers, for instance, happiness, life-satisfaction, self-esteem, and sense of control over life, physical health and depression. Indeed, volunteers who had greater well-being were found to invest more hours in volunteer service (Pushkar, Reis, & Morros, 2002; Thoits & Hewitt, 2001).

In addition, Crook, et al. (2006) examined the AIDS service organisation-volunteer relationship from the volunteer's point of view. The qualitative study conducted 18 interviewees and it was revealed that the benefits of maintaining volunteering, for example- (a) Intrinsic rewards: improving self-esteem, autonomy, the financial resources for independence, the need for self-determination, the need for self-actualization or self-improvement, For a number of the volunteers, leading to improve health, enriching interpersonal relationships and having interactions with others were identified importantly as benefits of volunteering. (b) Extrinsic rewards: volunteers identified recognition and appreciation as benefits they received from their work,

identified as accruing from the AIDS service organization-volunteer relationship, identified as the opportunity to participate in making decisions satisfaction in being viewed and treated as contributing, reported satisfaction stemming from the organizations' investment in their development and growth and expressed appreciation for the training, education, and skills cultivation (Crook, Weir, Willms, & Egdorf, 2006b).

Daniels (2005) described the benefit experiences of those lay health workers caring for community TB patients in South Africa where data were collected through focus groups with incumbents. Fifty lay health workers depicted, for instance, (a) to deal with the "small things" such as diarrhoea, fever or colds and deal with emergencies and correctly identifying ailments through the training they learnt to change old practices; (b) the health care skills respondents gained were appropriate to the resource constraints of the community settings in which they worked; (c) in their interaction with their communities' respondents attempted to transfer their skills and engage in health promotion and (d) some felt that what they learnt was of relevance to their personal life and it helped them grow spiritually.

2.6 Volunteers and volunteering in Taiwan

Since 2001, the service performed by volunteers in Taiwan has increased gradually as indicated under the Regulations of Volunteer Service. The number of volunteers in the government, such as the Department of Cultural Affairs, Education, Environment Protection, Medicine, Health, Finance, Economic Affairs, Agriculture, National Defence, Fire Prevention, Police, and Social Welfare, numbered approximately 500, 000 at the end of 2007. For example, approximately 12,000 people registered to become

volunteers during 2007. There are more than 100,000 volunteers in the social welfare field alone. They currently host a variety of volunteer groups working on social welfare and assist the welfare service in areas such as disability, aging, women and children, consultant and community welfare service. The current occupation and proportion (Figure 2-3) of the volunteers included: students, teachers, housekeepers, labours, businessmen, government employees, retired people and other professional technologists. The age distribution of volunteers was shown in Figure 2-4; the majority proportion was around 60% aged between 30-64 years old and approximately 70% volunteers were female (MOI, 2008, 2011). The volunteers provided an average of 2.07 hours per week in 2007 which assisted to increase the quality of welfare work overall. As shown in figure 2-5 (MOI, 2011), the average volunteer service hours per week of the Social Welfare Department in Taiwan Government from year 1996 to 2010 increased gradually. The total number of registered social welfare volunteers grew from 58,700 in 2001 to 155,000 in 2010; other figures of demographic statistic data of the social welfare volunteering were integrated and are shown as following Figure 2-6~2-10.

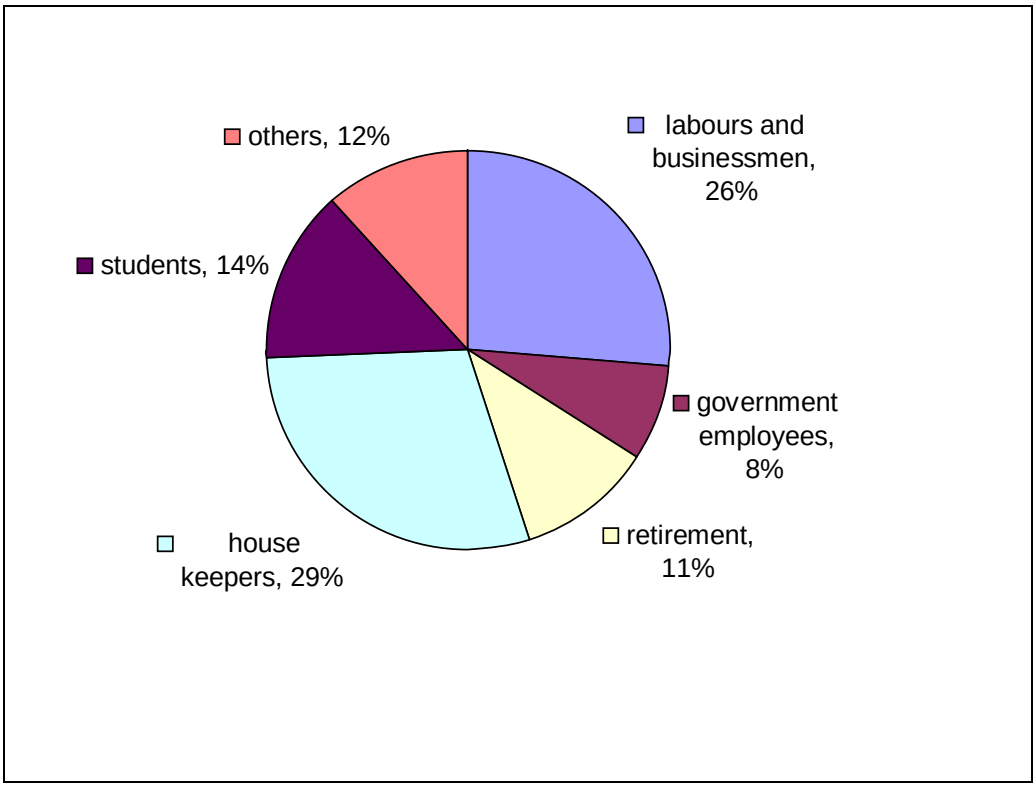

Figure 2.3 The proportion of volunteers in Taiwan, 2007

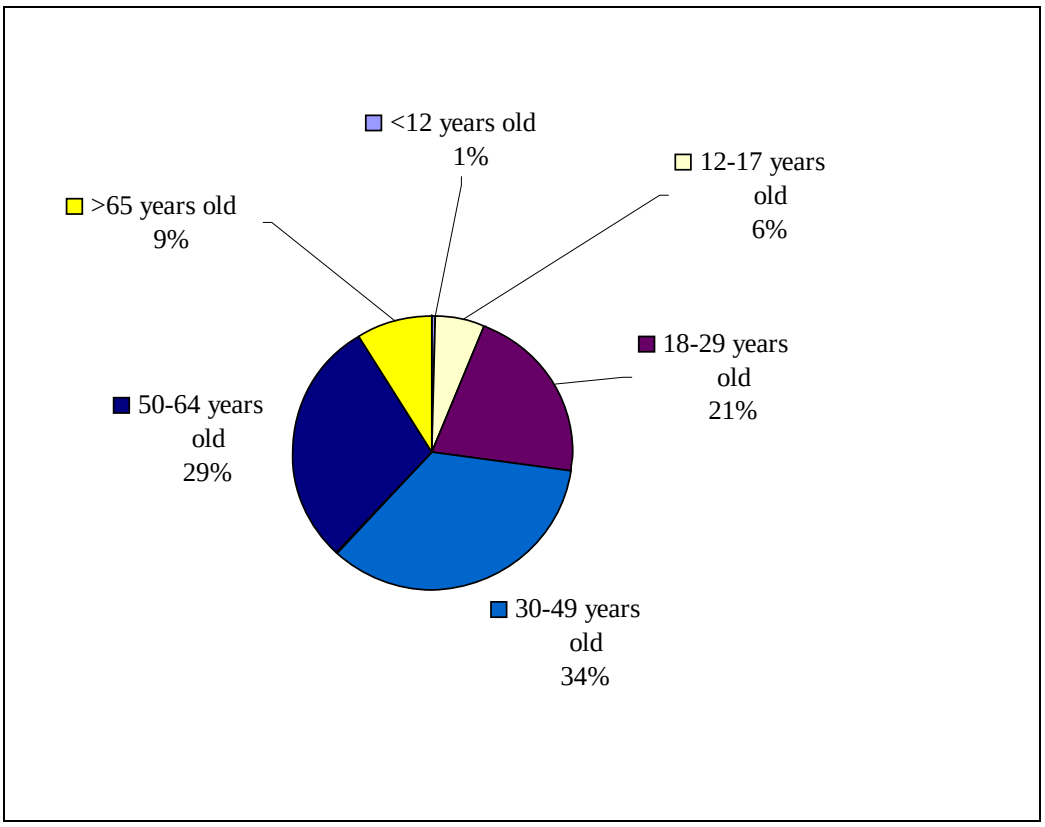

Figure 2.4: The age distribution of volunteers in Taiwan, 2007

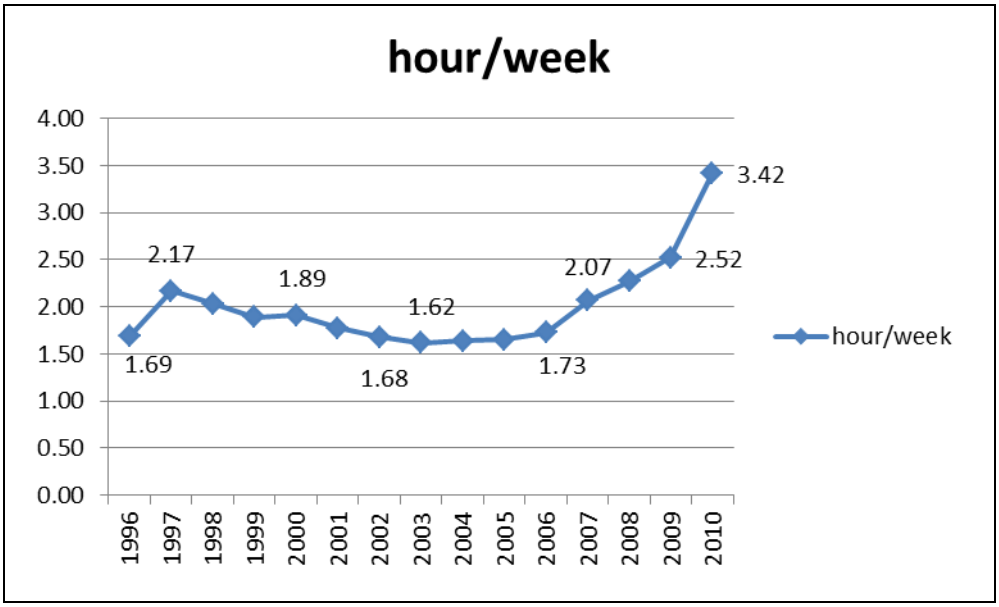

Figure 2.5: Average hours per week of Volunteers of Social Welfare Department of Taiwan Government from year 1996 to 2010

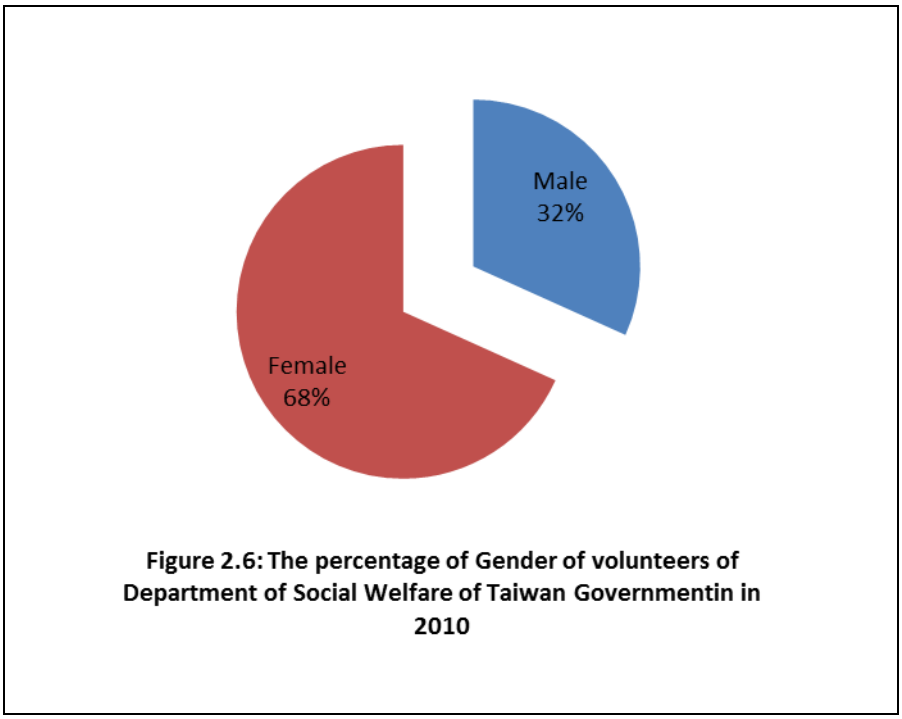

Figure 2.6: The percentage of Gender of volunteers of Department of Social Welfare of Taiwan Governmentin in 2010

Figure 2.6: The percentage of Gender of volunteers of Department of Social Welfare of Taiwan Government in 2010

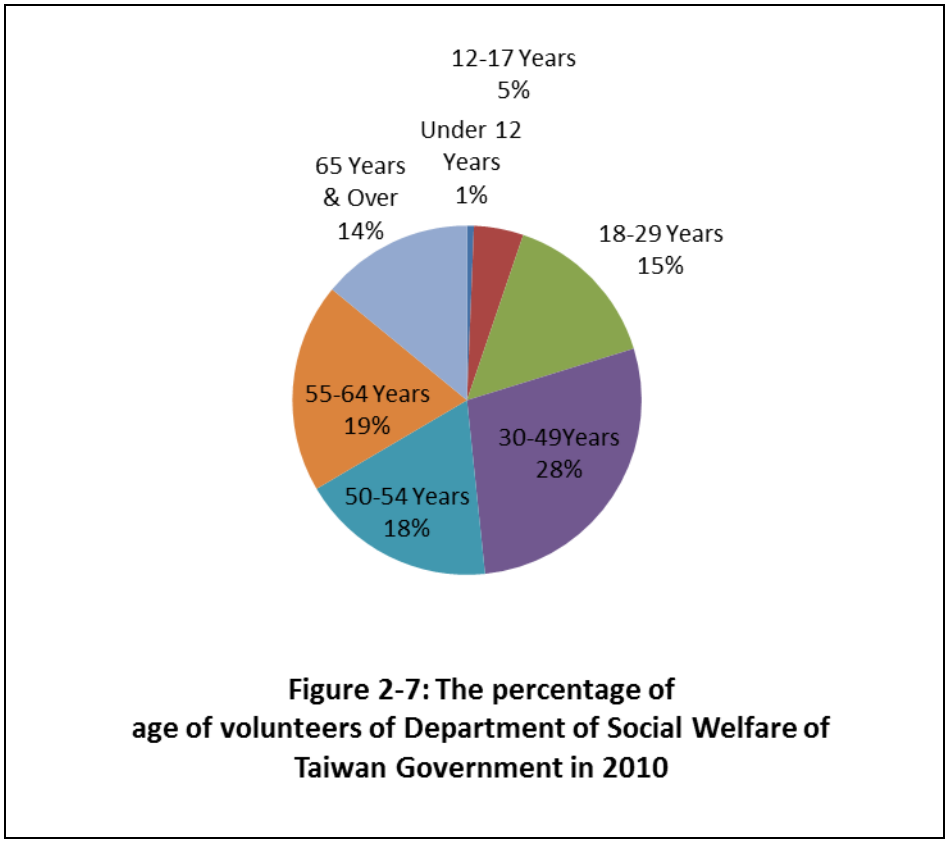

Figure 2-7: The percentage of age of volunteers of Department of Social Welfare of Taiwan Government in 2010

Figure 2.7: The percentage of age of volunteers of Department of Social Welfare of Taiwan Government in in 2010

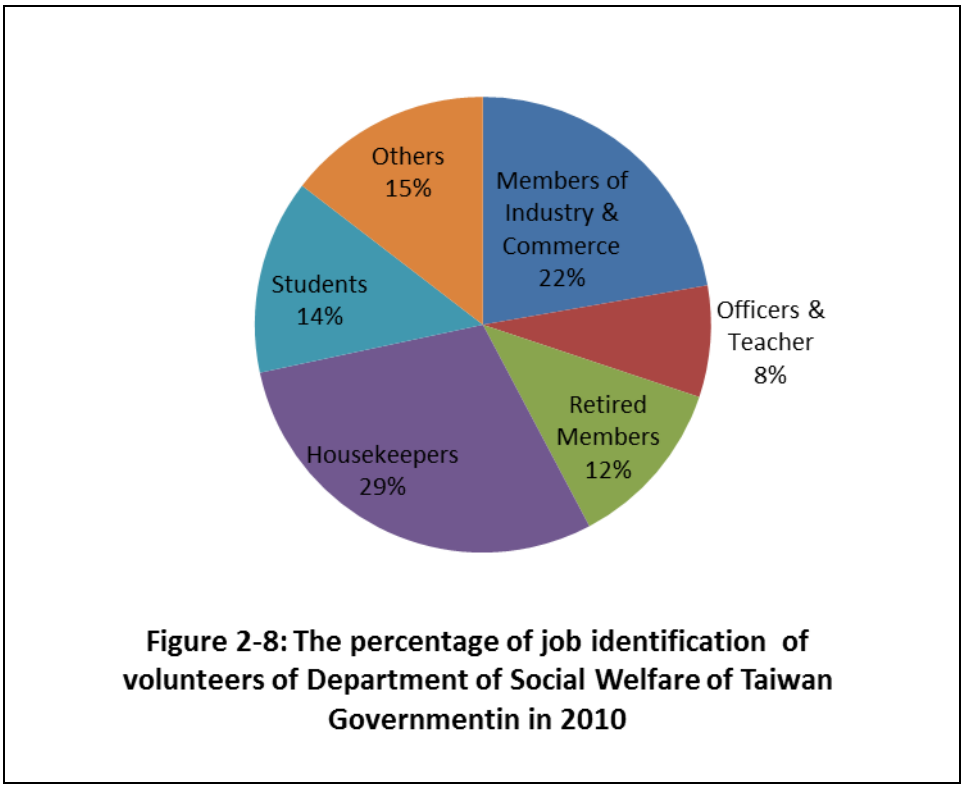

Figure 2-8: The percentage of job identification of volunteers of Department of Social Welfare of Taiwan Governmentin in 2010

Figure 2.8: The percentage of job identification of volunteers of Department of Social Welfare of Taiwan Government in 2010

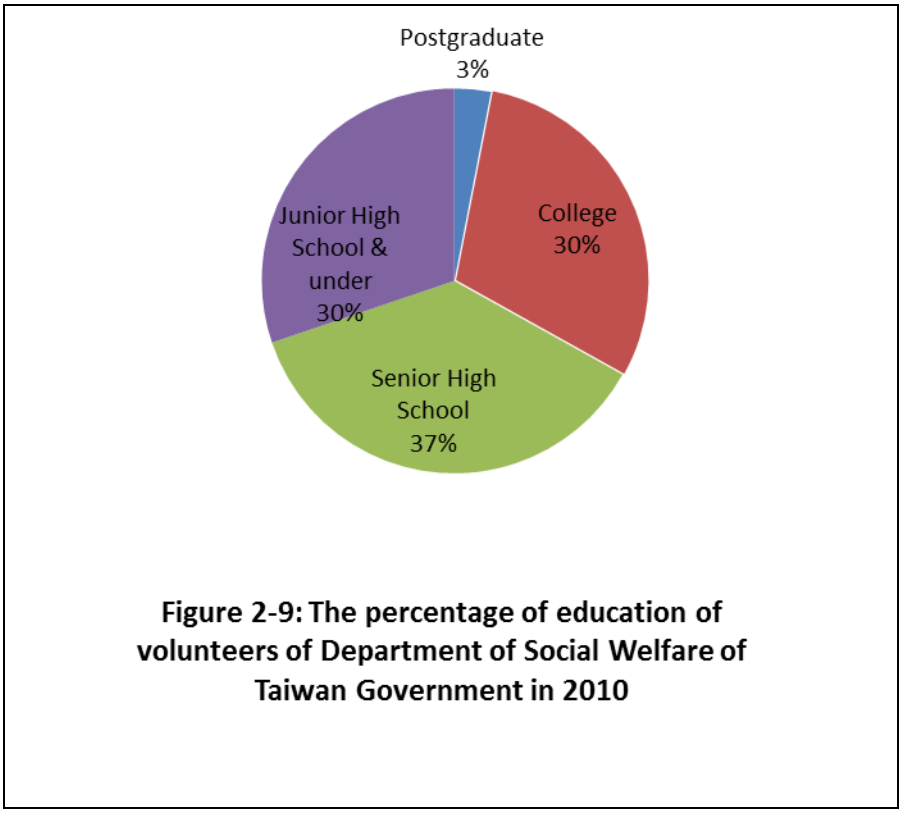

Figure 2.9 : The percentage of education of volunteers of Department of Social Welfare of Taiwan Government in 2010

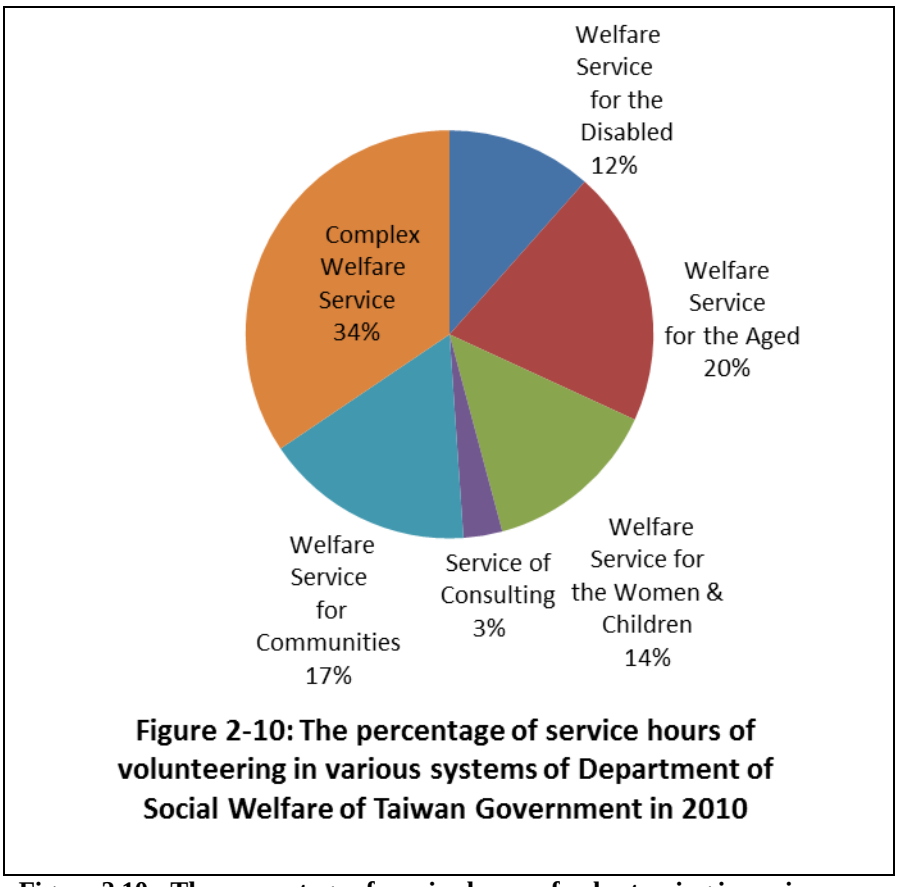

Figure 2.10 : The percentage of service hours of volunteering in various systems of Department of Social Welfare of Taiwan Government in in 2010

FIGURES FROM THE MINISTRY OF THE INTERIOR (MOI) INDICATE MANY VOLUNTEERS ARE MOTIVATED TO IMPROVE THEIR COMMUNITIES AND SOCIETY AS A WHOLE, AND MORE INDIVIDUALS CHOOSE COMMUNITY SERVICE THAN ANY OTHER CATEGORY OF VOLUNTEER WORK. FOR EXAMPLE, MORE THAN 30 PERCENT OF ALL VOLUNTEERS IDENTIFIED THEIR EFFORT IN COMMUNITY SERVICE WITH THE IDEA GRADUALLY BECOMING POPULAR AND EVERYONE COULD GETTING INVOLVED IN VOLUNTEERING IN DIFFERENT WAYS. ALONG WITH CHANGES IN THE NATURE OF VOLUNTEERISM, THE NUMBER OF SOCIAL WELFARE VOLUNTEERS IS ALSO INCREASING (A. WANG, 2008). INCREASINGLY, SMALLER COMMUNITY ORGANISATIONS ARE STRIVING AND TURNING TO ALTERNATIVE SOURCES OF FUNDING.-RANGING FROM INDIVIDUAL DONATIONS TO MORE CREATIVE AND ENTREPRENEURIAL SELF- FINANCING STRATEGIES.

On the other hand, a Taiwan Ministry of the Interior national survey of participating volunteers in 2002 (MOI, 2003) found in one year, the volunteering rate of adults was 11.6%, of which more than 2/3 participated in environment protection and community and social welfare services. This can be compared with other countries, such as the United States and Australia, where the national percentage of volunteers is more than one third the adult populations (BLS, 2009; Lewig, et al., 2007; Linacre, 2007; Mitchell, 2006; Thoits & Hewitt, 2001).

Thus, the Taiwan Government have developed polices and strategies to assist in the recruitment and retention of volunteers. To encourage people to participate as a volunteer, the MOI in Taiwan needs to promote the relevant policies, for instance, (1) to regulate and perfect the volunteer service legal system; (2) to educate and train volunteers property; (3) to confirm and encourage volunteers' relationships via the volunteer relation bulletin; (4) to enhance volunteer rewards and to display their honours; (5) to provide volunteers with a higher level of accident insurance; (6) to establish a national volunteer service information system (MOI, 2008).

2.6.1 Volunteers in community health promotion activity in Taiwan

In Taiwan, the health promotion volunteers work for a variety of institutions known as the Community Health Promotion Development Centres (CHPDC) or the Community

Health Development Centres or the Community Health Building Centres, such as the Health Promotion Department of a hospital, the Community Development Association or the Public Health Centre (Clinic) base. The chief of Community Health Promotion Development Centre integrates and organises local community resources as well as enhances the training for the various participants of the community. These services are funded with assistance from the Public Health Bureau of the County Governments (Z. G. Chen, 2001).

Within the three bases of community resources available in Taiwan, human resources are essential, especially volunteers. Volunteering also provides a sense of community participation and often leads to new social contacts and friendships (Couto, 1990; Johnson, Green, Anderson-Lewis, & Wynn, 2005; McBride & Korczak, 2007; Norris & Pittman, 2000). Overall, volunteers make a significant contribution to health care (Campbell, Nair, & Maimane, 2007; Davis, et al., 1998; Flicker, 2008; Gee, et al., 2005; Karwalajtys et al., 2009; Merrell & Williams, 1999).

In addition, various studies portrayed that community lay health worker programs do have a legal and important role to participate in the delivery of primary health care in several countries. Because are as trusted and respected members of the underserved community, they can reduce inequalities in access to and utilisation of formal health care services by underprivileged communities. Lay health workers possess Indigenous skills, such as verbal and nonverbal language skills, social and environmental familiarity and an understanding of the community's health beliefs, health behaviours and health barriers (Healy, Lyons-Crew, Michaux, & Gal, 2008; Ingram, Sabo, Rothers, Wennerstrom, & de Zapien, 2008; Johnson, et al., 2005; Merrill, 2006). Some

international studies have shown various important effects of volunteers in such programs including, for example, interaction with AIDS patients (Akintola, 2008; Campbell, et al., 2008; Crook, Weir, Willms, & Egdorf, 2006a; Ross, et al., 1999; Stolinski, Ryan, Hausmann, & Wernli, 2004), and low income pregnant women (Roman, Lindsay, Moore, & Shoemaker, 1999).

The forming and training of voluntary community lay health workers at the grassroots level is one of the important indicators of effectiveness when developing a healthy community (C. M. Chen & Yang, 2006; Z. G. Chen, 2001; Couto, 1990; McBride & Korczak, 2007; Taylor & Pancer, 2007; Winangnon et al., 2007). Therefore, training has also become a requirement of each Community Health Promotion Centre when healthy community development is funded by the Taiwan Government. Based on the expectations of the Taiwan Government, the broad functions of voluntary community health workers as part of the development of a healthy community are as follows: connecting and coordinating with households, visiting families, recording and reporting, providing blood pressure measurement services, in-home care, and finally conducting programs to stop smoking and chewing betel nuts (D. o. H. Bureau of Health Promotion, 2006, 2008b).

To become a health promotion volunteer in Taiwan, the volunteer must be nominated by the leader of a local association and attend a volunteer training course. After completing the course, participants are formally commissioned by the leader of a community health promotion development centre. Health promotion volunteers are also assisted by Community Health Nurses that affiliate continuously with the local community who recommend to them about health promotion activities and attend

regular health promotion volunteering meetings (D. O. H. Bureau of Health Promotion, Taiwan, R.O.C. , 2000).

As a result, there are diverse levels of health promotion volunteers in Taiwan, such as (1) the fundamental members who are newcomers and enter into a commitment, (2) the cadre members who give actual assistance and lead a section of work and (3) the leaders and the chief who provoke sections of health promotion activities in the community; these are similar to the three sequential stages: (1) antecedents, (2) experiences and (3) consequences on the volunteer processes that have focused on volunteer service programs that have emerged in response to the epidemic of HIV and AIDS in the United States (Omoto & Snyder, 1995; Omoto, et al., 2000) (Omoto & Snyder, 2002); and three groups by respondent years of experience volunteers: (1) 1–3 years which is called novice, 4–8 years which is known as experienced and 9 years or more which is named veteran, classified by Murayama, Taguchi and Murashima in health promotion activities in Japan (Murayama, Taguchi, & Murashima, 2008).

The majority of the Community Health Promotion Development Centres in Taiwan commit themselves to grass-roots health care. Since this involves many enthusiastic community lay workers or volunteers taking actions that require professional health care knowledge, the conceptual leadership of the coordinator play on an influential role. Either for the Community Development Association or for the Community Health Promotion Development Centre, the leaders or chief need to carefully survey these organizations' founding objectives, service spectrum, working performance, as well as members of the related supervising councils (Chiou, 2001; C. L. Huang, 2003). The success of community development projects relies not only on the efforts of general

managers, board of supervisors, directors and members of certain councils, but also on the support of all the residents in the community (Carey & Braunack-Mayer, 2009). The supervision and active support of the sponsors in the County/ City Government is essential in order to perform some professional tasks: such as routine operation, volunteer recruitment and management, direct caring service, data archiving, financial management, as well as appropriate correspondence for the evaluation process from the authority. Merely bureaucratic routine, like civil servants granting permission to the community, is no longer adequate. A recent positive development is that most of the sponsors in the local County or City Government have already drawn on academic resources such as colleagues and professional teachers in full-time community consulting. This practice goes beyond a mechanical give-and-take relationship and is an encouraging sign for active communities (H. S. Chen, 2004; Y. C. Chen & Huang, 2003; Tsai, 2009).

In other words, as soon as a centre is established, the Community Development Associations in Taiwan begin their action by cleaning up the community environment. This explains why one can find a volunteer environmental protection team in nearly every community. What concerns the community next is personal safety and protection, a reason that leads to the formation of mutual helping teams for neighbourhood patrol and vigilance. With accumulated experience, community development work begins to takes on a more professional outlook. 'People' become the new focus of community caring and a new list of service is added to the program: such as women talent and skill developing classes, life adjustment courses for foreign spouses, meal services and caring for the elderly.

Also, the benefit issues relating to volunteering are important to the Taiwan Government as it views building sustained civic involvement through volunteering as a way of addressing a range of government priorities such as promotion of social justice, biodiversity conservation, community building cohesion, improving individual welfare, health and skills development (D. o. H. Bureau of Health Promotion, Taiwan, 2006; C. M. Chen & Yang, 2006; Downie, Clark, & Clementson, 2004; MOI, 2008; Thoits & Hewitt, 2001)

2.6.2 The functions of Public Health Nurses of CHPD

Community health promotion development changes according to participants and circumstances and offers an integrated approach to community health care (D. o. H. Bureau of Health Promotion, 2011). Partnership and empowerment between Community Health Nurses and the community, including key persons, volunteers and residents, are concurrently involved in the entire process of community health promotion development practice to encourage the community to adopt healthy change and to motivate the community to improve the community's overall well-being. Along with the various professionals engaged in community health, Public Health Nurses are considered to be a major health resource for the practice of health promotion. As stated within the range of practice, Community Health Nursing combines the knowledge and skills of nursing with those of public health science to maintain, protect, and promote the health of populations or aggregates (Murashima, Hatono, Whyte, & Asahara, 2002; SmithBattle, Drake, & Diekemper, 1997; Yoshioka-maeda et al., 2006).

As previously mentioned, community development requires residents' participation and encourages collaboration between the community nurses and the people in the

community. Community Health Nurses naturally work with people from different levels of social status and they are respected health professionals in the community; thus, they are well suited to promote healthy community projects (I. C. Li & Wu, 2001). Besides, Community Health Nurses have a responsibility to detect health problems and to build supportive environments for health promotion within the communities. Studies have shown that the involvement of Community Health Nurses has a great impact on healthy community projects (L. C. Chang, Liu, Yen, & Chen, 2007; Guo, Hsu, & Lin, 2008; Molloy & Caraher, 2000; Norris & Pittman, 2000; Yoshioka-maeda, et al., 2006). Therefore, community volunteers can be treated as supplementary to nurses and with training can help implement health promoting services and programmes (Haddad, 2004).

2.7 The concepts of burden

2.7.1 The definition of burden

According to the American Heritage Dictionary and Webster's Revised Unabridged Dictionary, the definition of “burden” is a noun identifying that which is carried, load, borne; that which is borne with difficulty, obligation, onus, grievousness, wearisomeness or oppressiveness; which is a heavy weight that is difficult to carry or something one must do because of prior agreement. It could be a verb that is to load heavily, to weigh down, to oppress or to load oppressively (burden. n. d.). Yet, another definition of “burnout” as a noun means a fire that is totally destructive of something; fatigue, frustration, or apathy resulting from prolonged stress, overwork, or intense activity; Physical or emotional exhaustion, especially as a result of long-term stress or dissipation (burnout, n. d.). That is, burnout is a response to chronic emotional tension

of dealing extensively with other human beings, particularly when they are troubled or having problems. Maslach (1982) defines burnout as a syndrome consisting of the following elements: emotional exhaustion, depersonalisation and reduced personal accomplishment. Emotional exhaustion represents a person becoming excessively involved emotionally and overextending one's-self; a person feels overwhelmed by the emotional demands imposed by other people. The second aspect of burnout is depersonalisation, which is defined as a detached, callous and dehumanized response to the other person. Reduced personal accomplishment is the third aspect of burnout. It occurs when the caregiver has a sense of inadequacy about their ability to relate to recipients or to deal with the job required and this may result in a self-imposed outcome of failure. These three aspects may occur in chronological order or may occur concurrently (Maslach, 1982).

2.7.2 The burdens of community health carer and volunteer

Burdens are thought to be a part of burnout, something that can lead to burnout and as a result, is something that can be avoided if the burdens are detected beforehand. The majority of the research on burden to date has focused on the burden of carers in the community, especially family carers of the elderly with dementia. For example, Zarit, Orr, and Zarit (1985, pp.69-70) represented the stress of dementia disorder's caregivers such as taking over the tasks that the patient is able to do no longer, often coping with patient's specific behavioural disturbances, undergoing a vast feeling of personal and psychological loss because of their relative gradually withering, obtaining rare assistance from the daily tension, being criticised by other relatives and possibly not attaining sufficient care skills, and lacking other family or relatives and social support to provide in coping with difficult behaviours. Further, Zarit, Gallagher and Zarit

developed the burdens instrument that has good reliability and validity for measuring role strain (stress due to role conflict or overload) and personal strain (how personally stressful the experience is) subscales to reflect the important aspects of caregiving (Whitlatch, Zarit, & von Eye, 1991).

Pearlin, Mullin, Semple and Skaff (1990) suggest four main areas that contribute to caregiver stress. Firstly, the background context influences their ability to cope, such as the level of support and the impact of other life events. Secondly, the primary stressors of the illness such as the patients' cognitive ability, the level of help required for everyday living and the behavioural and psychological symptoms The next field covers secondary role strains such as family conflict, relationship quality and social life outside of the caregiver role. The final area considers the intra-psychic aspect of the caregiver such as the personality, level of confidence and competence and role captivity experienced by the caregiver (Pearlin, et al., 1990).

However, a longitudinal study of the burden of caregivers of people with senile dementia by Zarit, Todd and Zarit (1986) portrayed the caregivers' ability to tolerate problem behaviours actually increases, even as the disease progresses. In fact, caregivers explained they had learned to manage problems more effectively, or they simply did not let problems bother them anymore. Another factor is that the total frequency of people with senile dementia memory and behaviour problems did not increase over the 2-year period (Steven H. Zarit, et al., 1986). It could be implied that the burden relief was a result of caregiver's adjusting to the daily care events because of accepting professional assistance, education, or via social network support.

Definitely, community health worker volunteers have been used in many countries and for numerous purposes such as in response to the epidemic of HIV and AIDS in South Africa (Akintola 2008) and the United States (Crook, et al., 2006b; Omoto & Snyder, 1995; Omoto, et al., 2000), in rural areas of China, Russia and other similar countries (Spencer, Gunter, & Palmisano, 2010)(Spencer et al. 2010), and for health promotion activities in Japan (Murayama, et al., 2008) and Taiwan (Chuang, 2001; H. C. Huang, 2004; Wu, 2001). These community health volunteers are also known by many different names including lay health workers (Bhutta et al. 2011), eldercare volunteers (Ferrari et al. 2007), health advocators (Greenhalgh, Collard, & Begum, 2005), community health workers (Cherrington et al. 2008), and health promotion volunteers (Murayama et al. 2010).

For the literature review about the work challenge, work overload, work barrier or difficulty experienced by community health volunteers, the majority of prior research has involved qualitative approaches using focus groups and in-depth interviews. For example, Daniels, et al. (2005) described the experiences of a group of lay health workers' intervention in TB treatment in the farming areas of the Western Cape, South Africa. Data was collected through focus groups with trained lay health care workers who were engaged in a wide range of activities, beyond simple health care. The majority of the lay health workers disclosed the stressors of becoming a lay health worker, for instance: 1. the initial training experiences presented hesitancy and anxiety about being in an unfamiliar learning environment because a few had completed secondary school only; 2. qualities such as (1) advocacy,(2) trustworthiness, (3) availability and willingness to help and (4) interpersonal effectiveness, as well as possessing the appropriate health care skills, such as administering drugs or cleaning

wounds were needed to perform health care tasks adequately - far broader than the ability to perform simple health care tasks; 3. to be able to perceive community and personal benefits of becoming a lay health worker; 4. to be able to reflect on their role in TB care specifically; 5. facing mistrust and criticism from their families and communities and 6. lack of an opportunity to build up a network of supporters with similar experiences to their own with whom they can share confidences. As a result, the study illustrated the interventions needed to ensure that the tasks required of lay health workers are complementary to their everyday roles, rather than adding a competing set of responsibilities (Daniels, et al., 2005).

Another qualitative study examined the AIDS service organisation-volunteer relationship from the volunteer's point of view. Factors that led to a relationship with an AIDS service organisation included personal values and individual characteristics and needs. Volunteers also encountered challenges that included role demands, role ability fit, and stress/burnout concerns as well as limited organizational resources and structural obstacles. These results suggest that care must be taken to ensure that the volunteer role meets the needs, skills, and abilities of the individual volunteering (Crook, et al., 2006b).

Moreover, Ball and Nasr (2011) found the scope of the needs and challenges of lay health workers (trainers) using qualitative data in northern and central England in 2007-2009, for instance, 1.*Views of training*: (1) Although the initial health trainer training programme was viewed as very comprehensive, interviewees were uncertain to what degree they would be ready for service at the end of it. (2) The majority of health trainers felt that working one to one with clients before completing their training was

'too demanding and inappropriate' and should be avoided. Participants felt instead that training needed to be more 'practical' and include role-play, case studies and shadowing qualified colleagues to enhance the learning experience. (3) A significant gap in training provision was the lack of counselling and motivational interviewing training; participants discovered that once in practice they did not have the knowledge required to actually *support* members of the community with specific problems. (4) Many participants felt that a more formal process of individual assessment would have been valuable in consolidating learning and developing self-confidence. 2. *The role was 'still evolving and changing'*: This resulted in a degree of uncertainty about what individuals were expected to do and consequently had a detrimental effect on the perception of the role among other health professionals and community members. 3. Frequently found that what was *available did not meet their clients' needs*. There were therefore frustrations and participants felt constrained by their role description, which stipulated that they could not set up alternative, more appropriate services for clients, or accompany (and thereby support) clients to pre-existing events or groups. This, they felt, had a negative impact on their effectiveness 4. *Challenges within the role:* (1) the role had continued to evolve into something far broader and more complex than the original vision; participants therefore expressed growing concerns relative to their personal confidence and competence, and raised a need for more-structured peer support and mentorship. (2) The level of client dependability placed on the health trainer, which was difficult to cope with at times. Many described how they frequently had to learn to 'switch off' from the job in order to 'survive' (3) They expressed their frustration with current Department of Health performance measures, which they deemed inappropriate and consistently failing to credit the scheme with the full extent of its influence on health behaviour change.

While the impact of caring for relatives or friends has been researched and understood to some degree, it is unclear whether volunteers who are not family members experience the same type of burden. In particular, we do not know whether the burden associated with volunteer activities is the same or different in Taiwan or other Asian countries as most of the previous research has been conducted in Western countries.

2.8 Declaration and Contribution Table for Thesis Chapter Two

The following paper provides an integrative literature review of the evidence available on the burden experienced by community health volunteers.

Declaration by candidate

The extent of candidate contribution to the following publication is as follows.

Publicaton #2: Gau, M.,Usher, K., Stewart, L. & Buettner, P. (Under review) The burden of volunteering in a community health role in Taiwan: an integrated literature review. *Journal of Clinical Nursing*

Thesis	**Article**	**Publication Details**	**Author Contributions**	**Impact Factors**
Chapter two: Literature review	The burden experienced by community health volunteers: an integrated literature review	*Journal of Clinical Nursing*	Gau (50%) Usher (20%) Stewart (20%) Buettner (10%)	1.228

Declaration by co-authors

The undersigned hereby certify that:

- The above declaration correctly reflects the extent of the candidate's contribution to the work and the extent of contribution of each co-author;
- They meet the criteria for authorship in that they have participated in the conception, execution, or interpretation, of at least part of the publication in their field of expertise;
- They take public responsibility for their part of the publication, except for the responsible author who accepts overall responsibility for the publication;
- There are no other authors of the publication according to these criteria;
- Potential conflicts of interest have been disclosed to (a) grant bodies, (b) the editor or publisher of journals or other publications, and (c) the head of the responsible academic unit; and
- The original data are stored at the following location and will be held for at least five years from the date indicated below:

Location	School of Nursing, Midwifery & Nutrition, Townsville Campus, James Cook University.

Candidate signature		Date 30/11/2011

Signature 1		Date 30.11.11
Signature 2		Date 30/11/2011
Signature 3		Date 30.11.11

JCN Journal of Clinical Nursing

The burden of volunteering in a community health role in Taiwan: an integrated literature review

Journal:	*Journal of Clinical Nursing*
Manuscript ID:	Draft
Manuscript Type:	Review
Keywords:	Burnout, Caregiver Burden, Community

Table 1: Inclusion/exclusion criteria

	Web of science	Cinahl	Proquest	PsycINFO	Medline
Time period	1988->2010	1991->2010	1990->2010	1985->2010	1989->2010
Article no.	150	69	70	329	118
total	838				
Duplicative no.	766				
Exclusive no.	755				
Detailed Evaluation from abstract	82				

Table 2: Papers included in the review

author/published year	Study objectives	Category of carers/ types of clients/ Country area of focus	Research design/methods	Key results and conclusion
1. Akintola /2008	To explore the challenges experienced by volunteer caregivers of people living with HIV/AIDS and the strategies employed in coping with these challenges.	volunteer / patients with AIDS / South Africa	An ethnographic study, using observation and in-depth interviews, to collect data with 20 volunteers and other stakeholders in two semi-rural communities over a 19-month period in 2002/2003.	Eight themes highlighting these challenges **1. denial, stigma and discrimination** Families denied volunteers access to their homes fearing that their presence would make it easy for community members to identify and stigmatize them. Others insulted volunteers, suggesting that the care provided were of little or no value. Discrimination against patients was an on-going problem and a constant stressor for volunteers. **2. Waking up to reality** Volunteers had to come to terms with the reality of caring for bedridden patients who were in pitiable condition. **3. Becoming a competent caregiver** Patients had special care needs which might repulse caregivers and they doubted whether the volunteers were providing care willingly and 'from their hearts'. **4. Pushing ahead with caring work** Volunteers found that their competence was not good enough to significantly alleviate the pain and suffering of the patients. Their training in basic nursing care had limited effects, and they had to watch many of their patients die without being able to administer any pain-relieving or lifesaving medication. As a consequence, volunteers became discouraged, emotionally drained and found it difficult to continue with their work to the extent that some considered quitting. **5. Struggling to maintain confidentiality** While volunteers did not have problems keeping secrets or confidential information, it was stressful for them to maintain confidentiality about patients' HIV status.

author/published year	Study objectives	Category of carers/ types of clients/ County area of focus	Research design/methods	Key results and conclusion
1. Akintola /2008 (Cont)				**6. Managing attitudes and behaviours** Volunteers also deal with patients' emotional and behavioural issues, such as moodiness and anger, In addition, patients and their families made unreasonable demands of volunteers. **7. Confronting poverty** Volunteers confronted, first-hand, the poverty and needs of the affected families. Poverty was so serious that it was a major issue raised by all the participants. Volunteers' closeness to patients made them feel obliged to assist those who could not feed themselves or pay children's school fees. **8. Developing a thick skin** Volunteers did not receive any remuneration sometimes drew the ire of their friends and acquaintances, who insulted them. A clear understanding of how volunteers deal with challenges of caring for people living with HIV/AIDS can give insight into their weaknesses and strengths and can inform the design of interventions aimed at providing support. Studies are needed to facilitate better understanding of the processes of appraisal of challenges by volunteers and the effectiveness of coping strategies, and to track coping strategies over time.
2. Chung, /2009	To examine the values of a reminiscence programme, adopting an intergenerational approach, on older persons with early dementia and youth volunteers	117 youth volunteers /Forty-nine elderly participants with early dementia/Hong Kong	The youth participants acted as facilitators prompt the elderly participants to share and discuss events and experiences, and to support them to fabricate personalized life-story book. An occupational therapist provided ongoing support and monitoring.	The elderly participants were evaluated by the Chinese version of Mini-mental State Examination, Quality of Life-Alzheimer's Disease (QoL-AD), and Chinese version of Geriatric Depression Scale (CGDS) before and after the programme. *Dementia Quiz (DQ), Rosenberg Self-Esteem Scale and a 20-item feedback questionnaire on the programme were used to evaluate the youth participants.* Results: *Significant pre- and post-programme differences were found for* QoL-AD (mean change = -1.91; 95% CI = -3.18, -0.64) and CGDS (mean change = 1.86; 95% CI = 0.92, 2.80) among the elderly participants, and *for DQ (mean change = -1.14; 95% CI = -2.11, -0.17) among the youth participants.*

author/published year	Study objectives	Category of carers/ types of clients/ County area of focus	Research design/methods	Key results and conclusion
2. Chung, /2009				Volunteers also showed positive appreciation of older persons and opined that this community service provided them an opportunity to reflect on their relationship with elderly relatives. Some volunteers identified the burden of the time length spent to prepare for the community service **and heavy workload** of the programme. It is essential that they are adequately trained and that ongoing support and monitoring are provided.
3. Crook, et al. /2006	To understand the relationship of volunteers to their ASO (AIDS service organization) including their motivation, rewards, and challenges and to develop a model to explain the initiation and maintenance of this relationship.	ASO volunteers/ AIDS patient/Ontario, *Canada*	The grounded theory of method inquiry was used to understand the experiences approach in the form of one-on-one audio taped in-depth interviews with participants.	Challenge: 1. **Role demands**, (1) the pressures on their roles that it was emotionally taxing, as one put the role "was dredging up too much stuff in the past." (2) Challenges in their ability to effectively perform their role by insufficient knowledge or skills to assist diverse needs. 2.**When organizational resources are limited**, **workload, role effectiveness, and satisfaction may be adversely affected** to meet their demands: 3. Aspects of the organisational structure can present challenges to volunteers. **Inflexible scheduling** was one such structural feature identified by volunteers.
4. Daniels, et al. /2005	This paper describes the experiences of those lay health workers (LHWs) drawing on their experience of the role as burdensome.	LHWs/TB case /South Africa	data collected through focus groups with incumbents	Stressors: • **Experiences of the training**: They entered the training initially **hesitant and anxious** about being in an unfamiliar learning environment. Through the teaching style, respondents reported that these feelings were soon to overcome and replaced by feelings of gratitude for the opportunity. • **Perceived qualities and skills** respondents felt they needed in fulfilling their tasks; these qualities and skills were far broader than the ability to perform simple health care tasks such as cleaning wounds or administering drugs. As elaborated below, for respondents being a LHW involved their being: advocates, trustworthy, available, willing, and interpersonally effective and having appropriate health care skills.

author/published year	Study objectives	Category of carers/ types of clients/ County area of focus	Research design/methods	Key results and conclusion
4. Daniels, et al. /2005				• **Reflections on their role in TB care specifically**. Through the experiences related by respondents, it was clear that patients responded to direct observation in a varied manner. For some, once they had explained the process to patients, they found them willing to participate, but others encountered resistance and difficulty. • **The difficulties which come with the task**. Some reported doing their best but then facing mistrust and criticism from their families and communities. A lack of community co-operation negatively affected attempts at early TB case detection. Similarly a lack of support from the community residents also made it difficult for respondents to fulfil the task for which they had been trained.
5. Ferrari, et al. /2007	To Predict eldercare volunteers and employees experiences from service motives and sense of community.	Eldercare volunteers and employees/Australia	Volunteers (n = 52) and eldercare employees (n = 160) completed *measures of personal motives, sense of community, and satisfaction and stress* from assisting the elderly	**Caregiver Scale**, a 14-item, 7-point (1 = low; 7 = high) is an inventory designed to assess one's emotional experiences from working as a caregiver to others. Two subscales comprised the inventory: **a personal satisfaction subscale** (7-items; current sample coefficient alpha = .84) designed to assess one's overall satisfaction from helping others (sample items: ''Working is adding meaning to my life'' and ''Helping as an employee is worthwhile to me''); and, **an emotional stress subscale** (7-items; current sample coefficient alpha = .85) **used to assess the level of strain and exhaustion one may experience from helping others** (sample items: ''Helping someone as an employee has burned me out'' and ''Working with the elderly as an employee has exhausted me''). **Caregiver stress for volunteers was predicted by motives of low self-esteem, high needs for protection from similar situation, and a desire toward enhancing one's personal career goals.** For employees, stress was predicted by low levels of reciprocal responsibility and a desire for protection. Results suggest that eldercare satisfaction and stress are predicted by different variables for volunteer and employees requiring different program development for recruitment and retention.

author/published year	Study objectives	Category of carers/ types of clients/ County area of focus	Research design/methods	Key results and conclusion
6. Garland, et al. /2009	To identify what motivates religious volunteers involved in community service programs, how they sustain their service in the face of challenges, and what can do to recruit and sustain their involvement	Community volunteers/ community residents/ California	The study was conducted an in-depth interview of 25 selected volunteers from the research congregations	The most prevalent challenges these volunteers identified were **"boundaries,** as "setting limits to time, energy, personal relationships, and resources.'" **"fear,** "feeling uncomfortable, or even physically endangered," **"overwhelming need,** the needs of service recipients are far greater than the resources," **and "finding time."**
7. Kang'ethe, /2009	To discuss the challenges influencing the state of caregiving	Community caregiver-also referred to as 'volunteer') and nurses / HIV/AIDS patients/in the Kanye community home-based care (CHBC) programme in Botswana	The study was qualitative in design involving 82 primary caregivers in focus group discussions, and 5 CHBC nurses in individual interviews	Caregivers were challenged by **lack of community networks support, inadequate sanitary and care packages, poor shelter compromising privacy, inadequate income and food for their clients, inadequate care motivation as their volunteerism does not attract any payment, inadequate health personnel to offer psychosocial support like counselling, and an unconducive caring environment generally**. Putting in place policies ***to redress caregivers' poverty, helping caregivers start income-generating projects, increasing community assistance and caregiving facilities*** are recommended as factors to address caregiver challenges.
8. Kironde, & Bajunirwe /2002	To examine behavioural perspectives that attempt to address the issue of whether lay workers in such programmes should be paid for their services.	Lay workers in directly observed treatment (DOT) programmes for tuberculosis/Africa	A review of behavioural perspective.	**Challenges** to lay worker involvement in health programmes 1. Lay workers may be seen as **lowly aides** who simply assist clinic staff to achieve some desirable health service outcome or they may be seen as **not bio-medically well trained enough** to participate in the treatment of 'complex' diseases like TB. 2. If communities have negative attitudes towards the formal health system they are also likely to have **negative attitudes** towards lay health workers. Some communities do not **have full confidence** in lay workers 3. The health care system is l**acking and it may be difficult to harness community participation** 4. Lay workers in health programmes may **expect or demand payment** for services rendered.

author/published year	Study objectives	Category of carers/ types of clients/ County area of focus	Research design/methods	Key results and conclusion
8. Kironde, & Bajunirwe /2002				The debate on whether lay workers in health programmes should be paid is thus compounded by issues such as what factors one believes are responsible for motivation in particular contextual settings; how long lay persons are expected to perform tasks at hand; the capacity that exists to pay them and the sustainability of the motivating option chosen. The authors recommend more qualitative research to be done on this issue in high TB burden settings.
9. Murayama, et al. 2010	To develop Satisfaction and Burden Scales for HPVs in their community activities.	The subjects were 433 health promotion volunteers in two cities /Japan	Based on the findings of preliminary interviews, ten items for the Satisfaction Scale and fourteen items for the Burden Scale were prepared, and their content validities were confirmed in September 2005.	Two factors and nine items for the Satisfaction Scale and three factors and fourteen items for the Burden Scale were obtained based on factor analysis. Convergent validities of both scales and discriminate validity of the Burden Scale were supported by the results of the multitrait-multimethod matrix for Satisfaction and Burden Scales, and the reliabilities of both scales were confirmed with reference to the Cronbach's alpha coefficient. Moreover, all item-total correlations were moderately or strongly positive. **The burden scale** consists of three factors and 14 items. The first factor is "**burden on everyday life**", 5 items: • "HPV activities make me too busy," • "HPV activities interfere with my housework, shopping, and job," • "HPV activities do not leave me enough time for hobbies and other community activities," • "My individual HPV commitment is a burden," and • "HPV activities are an imposition on my family". The second factor is "**psychological burden**", 6 items: • "HPV activities leave me mentally exhausted," • "The HPV subject matter is difficult," • "HPV activities are not very interesting," • "It is awkward to approach local residents as an HPV," • "Being an HPV carries with it too much responsibility," and • "It is difficult to maintain a good relationship with other HPVs".

author/published year	Study objectives	Category of carers/ types of clients/ County area of focus	Research design/methods	Key results and conclusion
9. Murayama, et al. 2006, 2008, 2010				The third factor is "**workload burden**", 3 items: • "HPVs have a heavy workload," • "HPV activities are physically demanding," and • "HPV activities are hectic". The respondents answered on a 4-point Likert-type scale In the present study, Cronbach's was .888 for activity attachment, .890 for personal benefit, .843 for burden on everyday life, .758 for psychological burden, and .738 for workload burden.
10. Patterson, et al. /2007	How did the volunteer training program adequately prepare the volunteers to support older people to participate in a community-based physical activity leisure program?	volunteer leaders or physical activity motivators (PAM)/ the community elderly/Queensland	A focus group discussion was held with eight volunteers; A six-month follow-up questionnaire was mailed to the 34 older participants. The questionnaire included three open-ended questions and sought participants' views regarding the role of their volunteer leader	Responds of volunteers: **1. not adequately prepared to be a PAM** **2. legal liability for volunteers** **3. need to know how to properly approach and talk to people** **4. the elderly did not require any support from volunteer leaders valued because of their independence**.

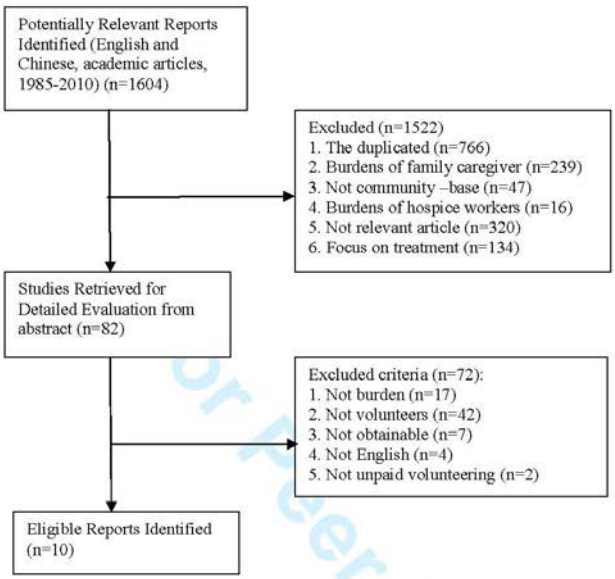

FIGURE 1: INTEGRATED LITERATURE REVIEW FLOW

Abstract

Aim: The aim is to review and critique the literature that explores the burden experienced community health volunteers.

Background: Community health volunteers are used in many countries for numerous purposes. Primarily, these volunteers complement the paid health workforce. While a detailed exploration of the burden experienced by family caregivers, little is known of the burden experienced by health volunteers.

Design: An integrative review was conducted.

Method: Data sources included Cinahl, Medline, Google Scholar, PsycINFO, Proquest, Web of science, Australasian Digital Theses Program, PerioPath Index to Taiwan Periodical Literature System from National Central Library Periodical Information Centre, Chinese Electronic Periodical Services (CEPS), National Digital Library of Theses and Dissertation in Taiwan, and statistics reports from the Taiwan Government.

Results: Concepts were analysed thematically to reveal the burden on community health promotion volunteers. Ten papers were included. Themes identified were: (i) challenges in carrying out the role; (ii) realities of working with people who are unwell; (iii) workload; and (iv) struggling with insufficient knowledge and competency.

Conclusion: While volunteers help deliver care to many people, they experience burden in many ways that has the potential to lead to burnout and result in attrition from the role.

Relevance: Volunteers are important for the delivery of health services because they provide the basis for teaching healthy concepts and healthy lifestyles in their local community. As volunteers are complementary to the nursing and health workforce,

retention of trained volunteers is vital for public health policy makers, administrators and community health nurses.

Key words: burden; community health volunteers; integrative review; volunteers;

Word Count: text-3365

Introduction

Community health volunteers play an important role in disenfranchised and underserved communities (Spencer, Gunter, & Palmisano, 2010) where they make a significant contribution to health care delivery (Campbell, Nair, & Maimane, 2007; Chambers, Kaczorowski, Dolovich, Karwalajtys et al., 2005; Davis, Leveille, & Logerfo, 1998; Gee, Smucker, Chin, & Curlin, 2005; Merrell & Williams, 1999). As trusted and respected members of the underserved community, these volunteers help reduce inequalities in access to and utilisation of formal health care services by underprivileged groups as they possess indigenous skills, such as verbal and nonverbal language skills, social and environmental familiarity, and an understanding of the community's health beliefs, health behaviours and health barriers (Healy, Lyons-Crew, Michaux, & Gal, 2008; Ingram et al., 2008; Johnson, Green, Anderson-Lewis, & Wynn, 2005; Merrill, 2006). Community health volunteers have been used in many countries and for numerous purposes such as in response to the epidemic of HIV and AIDS in South Africa (Akintola, 2008) and the United States (Omoto & Snyder, 1995; Omoto, Snyder, & Martino, 2000), in rural areas of China, Russia and other similar countries (Spencer et al., 2010), and for health promotion activities in Japan (Murayama, Taguchi, & Murashima, 2010) and Taiwan (Lin, Li, & Lin, 2007; Sung et al., 2006). These volunteers are also known by many different names including lay health workers (Kironde, & Bajunirwe, 2002), eldercare volunteers (Ferrari et al., 2007), health advocators (Greenhalgh, Collard, & Begum, 2005), community health workers (Cherrington et al., 2008), and health promotion volunteers (Murayama et al., 2010).

Individual benefits of volunteering have been reported as an increase in self-esteem, a

sense of involvement in worthwhile work, positive feelings about self, a sense of belonging, valuable work experience, access to health information and skills through training or contact with program staff, and a feeling of being energized (Davis et al., 1998; Flicker, 2008; Scorer, 2007). Burden on volunteers includes work load related to the physical and emotional nature of the role, the time taken to undertake the activity, insufficient emotional support from family, other volunteers, community health nurses, and residents, lack of instrumental support, poor communication skills, lack of cooperation and lack of confidence (Campbell, Nair, Maimane, & Sibiya, 2008; Knight, Fox, & Chou, 2000).

For the purpose of this review we defined volunteering as an active participation or contribution of time, energy and talent that is not motivated by financial gain (Safrit & Merrill, 2000). Our intent is to understand the burden imposed on community health volunteers.

Aim

An integrative literature review was undertaken, as we wanted to include studies with diverse methodologies, beyond RCTs. We utilised Whittenmore and Knafl's (2005) approach to a literature review which aims to analyse and synthesise a variety of primary sources and varying perspectives on a phenomenon using a systematic and rigorous process. As the extent of burden for community health volunteers has not been previously determined, the aim of the review was to examine empirical research that investigated the type and nature of burden faced by community health volunteers.

Search methods

Information about community health volunteers was identified by an initial literature search. Using the search terms: work burden and work burnout; workload and work stress; community health volunteers and lay health workers; community health promotion development, community health building, healthy community, healthy city. We accessed the following data bases: Cinahl, Medline, Google Scholar, PsycINFO, Proquest, Web of science, Australasian Digital Theses Program, PerioPath Index to Taiwan's Periodical Literature System from the National Central Library Periodical Information Centre, Chinese Electronic Periodical Services, National Digital Library of Theses and Dissertation in Taiwan, and statistics reports from the Taiwanese Government.

Figure 1 shows a flow chart of the article selection process. The following criteria were used in the search:

(1) The time frame from 1984 to 2010 was used, only English and Chinese articles were included, no restriction was placed on where the articles came from, and only academic articles were chosen.

(2) The researcher used the same search terms across all databases to select the studies reviewed. The studies identified from these databases were entered into a search chart by relevant characteristics.

Search outcome

A total of 1604 articles were identified. Of those, 766 were removed as they were duplicate articles. Other papers were excluded because they did not address the burden on volunteers, for example, burdens belonging to family caregiver (n=239), burden belonging to hospice workers (n=16), not community based (n=47), not a

relevant article (n=320), or focus on treatment (n=134). The researchers were then left with those papers relevant to the topic (n=82). The abstracts of the 82 remaining articles were accessed and read which resulted in the final papers for review (n=10). A number of the studies identified included a mixture of paid and unpaid community health workers; these studies were not included.

Table 1 outlines the article review process.

Table 2 outlines the study authors, objectives, category of carers/types of clients/country area of focus, research design/method, key results and conclusions. Characteristics of these articles include: eight articles related to community volunteers and two articles related to lay health workers (or lay health advisers) in terms of participant sampling; four articles were from rural and six articles from urban areas; two articles from an Asian country, two articles from North America, two articles from Australia, and four articles from Africa; and, two articles concerned community residents, three articles concerned people with HIV/AIDS, two articles concerned the community elderly, and two articles concerned people living in the community with TB.

Quality appraisal

The aim of this integrative review was to present the current state of empirical literature and synthesis findings from diverse sources to enhance the current understanding of the type and nature of burden experienced by community health volunteers. In keeping with this aim and the aim of an integrative review, no study was excluded from the review based on study design or methodology. Three researchers (Y-M. Gau, L.S & K.U) worked independently to undertake the quality

appraisal of selected papers using the CASP (2009) guidelines. The CASP tools contain a series of questions to assist the reviewer to determine the rigour and applicability of the research. The CASP tools provide a comprehensive checklist to enable the reviewer to assess the methodological quality of a paper and make a judgment about its suitability for inclusion in the review. Consensus on quality was reached regarding each paper included in the review process.

Results

The themes identified were: (i) challenges in carrying out the role; (ii) realities of working with people who are unwell; (iii) workload; and, (iv) struggling with insufficient knowledge and competency.

Challenges in carrying out the role

Difficulty getting community participation (Daniels et al., 2005; Kang'ethe, 2009; Kironde et al., 2002) has been reported in a number of studies. Families sometimes denied access to the home of the client (Akintola, 2008), some clients were unwilling to participate with the health worker (Daniels et al., 2005), and volunteers were mistrusted by families and communities (Daniels et al., 2005). At times denying access to clients in their home was linked to fears surrounding the stigma and discrimination related to HIV/AIDS (Akinolta, 2008). Others reported that communities do not respect or have confidence in the health worker role (Kironde et al., 2002).

Volunteers in the study undertaken by Kang'ethe (2009) reported how the lack of community support impacted on their role and left them feeling isolated and

unsupported. The volunteers also indicated that lack of support from family members made their work harder (Kang'ethe, 2009).

Lack of community networks and support for health workers was reported in a study of HIV/AIDS carer volunteers in Botswana (Kang'ethe, 2009). The volunteers reported that the lack of networks of volunteer groups, nongovernment organisations and other community based organisations added to the difficulty of carrying out their role effectively. Some volunteers reported that their own family criticised them because they lacked understanding of the role and questioned why it took them so long (Daniels et al., 2005).

Maintaining confidentiality was a burden identified by volunteers working with clients with HIV/AIDS (Akintola, 2008). In particular, they found it challenging to communicate with the family who continually asked about the client's illness. Lack of other health workers to support the volunteers was also identified as a problem (Crook et al., 2006; Kang'ethe, 2009; Garland et al., 2009). Lack of support from within the organisation led to lack of resources, increased workload, reduced effectiveness and impacted on role satisfaction (Crooke et al., 2006). The inadequacy of supplies to carry out the caring role was also burdensome (Crook et al., 2006; Garland et al., 2009; Kang'ethe, 2009; Patterson et al., 2007). One study identified concern because the need was far greater than the resources available (Garland et al., 2009). Volunteers also expressed concern related to the lack of recognition of the volunteer role and because the volunteers were perceived as too unskilled to assist with any complex health care delivery (Kironde et al., 2002).

Realities of working with people who are unwell

The reality of caring for sick people was described by the volunteers as emotionally taxing and mentally exhausting (Crook et al., 2006; Kang'ethe, 2009; Murayama et al., 2010). Akintola (2008) reported that volunteers sometimes found dealing with seriously ill people so confronting that they asked to be reassigned to other clients. Confronting poverty and poor health (Akintola, 2008), dealing with clients who do not have adequate income and food, and working in conditions which lack privacy or shelter in which to carry out their role, was a common finding across a number of studies, especially those conducted in poorer countries (Akintola, 2008; Kang'ethe, 2009). The study by Kang'ethe (2009) found that volunteers working with people with HIV/AIDS in Botswana were faced with delivering care in unsanitary or unhygienic conditions. The poverty of the client and their family meant that volunteers were caring for an incontinent person without water or appropriate shelter. The same volunteers described the difficulty of caring for people who did not have sufficient food because of poverty (Kang'ethe, 2009). Attempts to access support for their clients were frustrating and became a further source of stress for the volunteer (Akintola, 2008).

Dealing with stigma and discrimination was also a burden on volunteers who supported HIV/AIDS clients in the community (Akintola, 2008; Kan'ethe, 2009). Volunteers reported that discrimination of clients by family and community members was stressful and even though they tried to educate the families they were continually faced with the problem in their role (Akintola, 2008).

Fear of infection or the need to be protected from the condition was reported as a

concern by some volunteers (Ferrari et al., 2007; Garland et al., 2009). Garland et al. (2009) reported that volunteers reported feeling uncomfortable carrying out their role and at times even experienced volunteers were feeling physically endangered. The same volunteers outlined how at times they experienced discomfort trying to help people who differed from them in ways such as culture, religious beliefs, socio-economic status, and education (Garland et al., 2009). The study by Kan'ethe (2009) reported that volunteers feared infection with HIV, mainly because of inadequate conditions to support carer protection, and reported that some volunteers had already succumbed to the virus.

Workload

Length of time devoted to the role can be extensive (Chung, 2009; Crook et al., 2006; Garland et al., 2009; Murayama et al., 2010). As a result, it interferes with time for housework, shopping and occupation, and time for hobbies (Murayama et al., 2010). The volunteer role also impacts on the family of the volunteers and some volunteers reported how they were concerned that the time given to the volunteer role reduced the time they had available for their own family (Murayama et al., 2010). A program where young people volunteered to assist elderly residents with early stages of dementia was reported as having a high workload and time commitment placed on the youth involved which led to high dropout rates among the volunteers (Chung, 2009). Psychological burden related to caring for people also has a high impact on the volunteer and may lead to them leaving the position (Kang'ethe, 2009; Murayama et al., 2010). Further, inflexible schedules or rosters for volunteers were also identified as a burden which took its toll and added to the stress surrounding the role (Crook et al., 2006).

Struggling with insufficient knowledge and competency

Lack of preparation for the volunteer role was described in many studies (Patterson et al., 2007; Crook et al., 2006; Akintola, 2009; Daniels et al., 2005). Some volunteers reported they were hesitant and anxious initially because of their lack of knowledge and skills to carry out the role (Daniels et al., 2005). In another study the participants indicated how client and family lack of confidence in the skills of the volunteer made them work harder to learn faster on the job (Akintola, 2008). The need to know more than they were actually taught, such as how to approach and talk to people effectively (Patterson et al., 2007), was also reported. Insufficient knowledge to carry out the role caused stress to many volunteers (Crook et al., 2006; Akintola, 2008; Daniels et al., 2005). In one study the volunteers actually considered quitting because they felt overwhelmed by their lack of knowledge and skills, and the difficulties they experienced trying to manage to care for people with inadequate resources (Akintola, 2008). Participants also identified their concerns that clients and family members considered them inadequately prepared for the role (Kironde et al., 2002) and some participants expressed concerns that the training they did receive was not sufficient as they required knowledge and skills to carry out more than merely simple health care tasks; rather they needed to be health advocates, have good interpersonal skills and appropriate health care delivery skills (Daniels et al., 2005).

Discussion

This integrative review aimed to determine the type and nature of burden experienced by community health volunteers. Ten studies that addressed the topic were identified and reviewed. These studies were conducted across a variety of countries including

those from the developed and developing world. Community health volunteers are a major component of the health workforce in some countries, for example Asian countries such as Japan, China, and Taiwan. Apart from the studies by Murayama et al. (2010) in Japan, little is known of the burden experienced by these community health volunteers in Asia. It is possible that the burden of carrying out the role may be related to the high attrition rates reported in some countries (Kirone & Klaasen, 2002; Sung et al., 2006).

An important finding of the review is that the actual workload associated with the community health volunteer role was extensive for volunteers (Chung, 2009; Crook et al., 2006; Garland et al., 2009; Murayama et al., 2010). The workload was so extensive for many that it interfered with time for housework, family, shopping and occupation, and time for hobbies (Murayama et al., 2010). Workload is known to be a key factor involved in burnout (Pearlin, Mullan, Semple, & Skaff, 1990), is linked to attrition of nurses' as well as overall dissatisfaction with their role (Zeytinglu, et al., 2007). The stress of high workload has previously been linked to burnout in family caregivers (Zarit, Todd, & Zarit, 1986). As community nurses oversee the role of many community volunteers, it is essential that they recognise the high workloads being expected of some volunteers in order to be able to taking the necessary steps to alleviate the situation in the future.

Volunteers also reported feeling they had insufficient knowledge and competency for their role (Patterson et al., 2007; Crook et al., 2006; Akintola, 2009; Daniels et al., 2005) which in turn caused stress for the volunteers (Akintola, 2008; Crook et al., 2006; Daniels et al., 2005). In some cases the volunteers were even criticised by the

people they were assigned to who also thought the volunteers were not adequately prepared for the role (Kironde et al., 2002). Crook et al. (2006) suggested feeling unprepared to carry out the role well was a significant stressor for Taiwanese community health volunteers. In addition, Lin, Li, and Lin (2007), who conducted work with volunteers in Taiwan, suggested the frequency of training courses was related to role satisfaction. Feelings of inadequacy and unpreparedness may be leading to attrition from the role. These negative effects have already been reported as a result of lack of support and a lack of training in volunteers (Lewig et al., 2007). Indeed, to retain community volunteer workers as part of health programs is not easy, even when the volunteers have been trained. This lack of retention may be related to the complexity of community services and the resulting requirement for enhanced health-related knowledge and skills for those involved in delivering care (Daniels et al., 2008; Garland, 2008). How to retain trained volunteers in a community setting or program is an important concern for public health policy makers, administrators and nurses (Bennett, Ross, & Sunderland, 1996; Haddad, 2004; Ross, Greenfield, & Bennett, 1999). If volunteers are to be effective in their role, the issue of workload needs to be addressed in relevant policy and by those who oversee the work of volunteers.

Psychological or emotional burden related to caring for people who are unwell also had a high impact on the volunteers and may also lead to attrition from the role (Kang'ethe, 2009; Murayama et al., 2010). Burnout is a response to the chronic emotional tension of dealing extensively with other human beings, particularly when they are troubled or having problems. Maslach (1982) defined burnout as a syndrome that consists of emotional exhaustion, depersonalisation and reduced personal

accomplishment. Emotional exhaustion occurs when a person, such as a volunteer, becomes excessively involved emotionally and, as a result, over extends. This is an issue that community nurses will need to address in the future with volunteers during initial assessment and training for their role.

Limitations of the Review

This literature review of the burdens placed on community health volunteers is limited in three ways. First, the set of studies reviewed were limited in number, which may have biased the results. Further, only articles published in English and Chinese were selected for review. Secondly, the result of this review was limited to research available where volunteers received no remuneration for their services. Finally, two thirds of articles identified were qualitative studies, which therefore did not make mention of the differing demographic characteristics of volunteers. However, considering the numbers of volunteers mobilised yearly, we believe this review to be an important addition to the existing literature on community health volunteers and it clearly highlights the need for further research on this topic.

Conclusion

An integrative literature review of the burdens and challenges experienced by community health volunteers was undertaken to provide recent and reliable information on the impact of the community health volunteer role on volunteers. Ten papers were included in the review, mostly based on qualitative research. The themes that the review identified include: (a) challenges in carrying out the role; (b) realities of working with people who are unwell; (c) workload; and, (d) struggling with insufficient knowledge and competency. Volunteers are important for the delivery of

health services in many countries because they provide the basis for educating communities about healthy concepts and healthy lifestyles and complement the paid health services workforce. The review demonstrated that while these volunteers help deliver care to many people, the volunteers experience burden in many ways that has the potential to lead to burnout and results in attrition from the role. Community nurses and policy makers need to take action to reduce the burden currently experienced by volunteers in order to aid in their retention in the future.

Implications for practice

Burdens in work can lead to burnout. Burnout can be avoided if the burdens are detected beforehand. Community health volunteers may not only face negative attitudes that lead to frustration in their work but also be engaged in other forms of volunteering, which could result in a high attrition rate. Indeed, to retain community volunteers as part of health programs is not easy, even when the volunteers have been trained. Currently, there is little known about the burdens placed on community volunteers in the health services.

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2.9 Summary of this chapter

In sum, the volunteers in each Community Health Promotion Development Centre directly educate and promote on-site residents to encourage healthy lifestyles. Volunteers therefore are important for the delivery of health services because they introduce healthy concepts and healthy lifestyles in their local community. They also complement some of the paid workforce in the area. However, community health volunteers may not only face negative attitudes that lead to frustration in their work but also be engaged in other forms of volunteering, which could result in a high attrition rate.

Moreover, research has demonstrated that the burden on other types of informal carers, such as carers of the elderly and the mentally ill, are immense. The burden for these carers includes work load related to physical, emotional and time loading; deficiency of information; insufficient emotional support from family, volunteers, Community Health Nurses, residents; lack of instrumental support; deficit in communication skills; lack of cooperation skills and lack of confidence (Campbell, et al., 2008; Knight, et al., 2000; Zheng, 2001). However, to date, there is no information available about the burdens placed on health promotion volunteers in the carrying out of their role. Therefore, the availability of a burden assessment questionnaire for health promotion volunteers in Taiwan would allow Community Health Nurses to assess volunteers using the scale and develop and implement indicated interventions as required. Ultimately, the outcome would be improved retention of health promotion volunteers. This is urgently need as health volunteers in Taiwan are currently lost at a rate, which could be significantly reduced, and needs to be improved as soon as possible.

Additionally, support of volunteers is essential to reduce the frustration about nonprofessional unpaid work, and could be brought about through a series of training programs. Thus, an evaluation study of the development on health volunteers and on the effects of empowerment of health volunteers should be regarded as important and encouraged (Gau, 2006; Guan, 2002; M. C. Lin, et al., 2007). These impacts, such as the Community Health Nurses or the leaders of the community health promotion development don't recognize the need to release the burdens that ultimately cause burnout resulting in volunteers choosing to quit the activities. Therefore, the purpose of this study is to develop and conduct an initial validation of a questionnaire to assess the burden associated being a community health volunteer in Taiwan and to conduct a survey of a sample of community health volunteers using the new tool.

Chapter 3. Methodology and Method

3.1 Introduction

This chapter describes the research design and methodology. The background section presents a rationale for the use of both qualitative and quantitative methods, then illustrates the specific aims of the study. The research consisted of six main stages: each stage is delineated in the subsections that follow. The key process and methods within each stage are outlined in the chapter.

3.2 Background

My work in the past has involved undertaking various community health development projects in which I have cooperated with the Bureau of Health in the northern counties of Taiwan since 2003. I have enjoyed this work with passion, especially working with the health promotion volunteers. These volunteers include the chiefs, leaders, cadre members, and fundamental members who, as outlined earlier in the thesis, are equivalent to veteran, experienced, and novice volunteers. Most of these volunteers not only make great effort to take the basic and advanced courses relevant to volunteering, such as health promotion, community health development, and chronic disease prevention, but also enjoy their role of assisting in the efforts to improve the health of the Taiwanese community. Nevertheless, the attrition rates of these volunteers are high which has a marked impact on overall health promotion activities. As a result of the ongoing attrition of volunteers, the chief or volunteer leaders are required to recruit and train new community volunteers and take the time required to assist new volunteers to adapt to their position. These activities distract from their already demanding work.

Thus there is an urgent need to understand why some volunteers choose to leave the health promotion service. By undertaking this research project which aims to develop, test and deliver a tool to measure burden in health care volunteers, we will be better prepared to assist Community Health Nurses, or the chiefs of the community health promotion development centres, to assess and detect the burden on volunteers at an early stage so that appropriate interventions to prevent them leaving can be implemented in the future.

Therefore, the decision about the best research approach for the study needed to include relevance to a practical problem as well as the use of different methods of data collection. A mixed methods approach fulfilled this need. Creswell and Plano Clark (2007) describe mixed methods research as both a research design with philosophical assumptions as well as a method of inquiry. They define mixed methods as involving "…philosophical assumptions that guide the direction of the data collection and analysis of data and the mixture of qualitative and quantitative approaches in many phases of the research" (Creswell & Plano Clark, 2007, p. 5). The approach is based on the premise that the inclusion of both qualitative and quantitative data together will provide a better understanding of the issue than the use of one approach alone.

Creswell and Plano Clark (2007) outlined pragmatism as the main philosophical worldview linked to mixed methods research. Pragmatism focuses on the outcomes of research, on the importance of the question asked rather than the methods, and the use of multiple methods of data collection used to inform the study (Creswell & Plano Clark, 2007). A useful definition of pragmatism has been provided by Tashakkori and Teddlie (2003, p. 713) who note that "pragmatism rejects the either/or choices

associated with the paradigm wars, advocates for the use of mixed methods in research and acknowledges that the values of the researcher play a large role in the interpretation of results". In addition, these authors state that researchers are using good logic when they aim to select different methods, mix them up somewhat and attempt to apply findings to situations that are often complex. Indeed, as will be shown in this research, I take the view of Vanderstraeten and Biesta (1998, cited in Maxcy, 2003) that the process of communication and interaction between participants assist in their understanding of burden and also serve as a point of reference for their decisions to improve their situation.

McMurray (2007, p. 362) stated that "…In today's health care environment, the emphasis in health promotion research is on comprehensive interactions between many factors, particularly those within the social and cultural context of people's live….". Using a variety of research approaches helps to keep the focus on "how" and "why" questions (McMurray, 2007). It was important to me that the design of the research would be capable of providing valuable information to be used in a practical way in the future. For example, it can be used to design and implement strategies to support volunteers once their degree of burden is established.

Consequently, my research is pluralistic and oriented towards "the burden of the community health volunteers" and includes some degree of reflexivity regarding their reactions within the research. In addition, the research approach combines deductive and inductive thinking, as it is a mixed methods approach that utilises both qualitative and quantitative data. It also incorporates both epistemological and theoretical perspectives that are of both the quantitative and qualitative approach. That is, separate

phases of the mixed method research make this design uncomplicated to illustrate, realize and report. When the use of both qualitative and quantitative approaches makes the answer more complete, mixed methods designs are most useful (Creswell & Plano Clark, 2007). However, mixed methods designs were introduced with the intent of data integration; not merely the combination of the two approaches (Creswell, 2009; Creswell & Zhang, 2009). Therefore, during the study it is important that the researcher attempts to draw the data from both approaches together in order to answer the research question. Further, the study always is driven by one approach otherwise paradigms become confused and messy. Hence, the dominant paradigm should fit with the researcher's world view, as this is the origin of the question (Morse & Niehaus, 2009) and the theoretical perspective determine how the project is conceived and conducted (Hesse-Biber, 2010). In this case, the research is driven by the quantitative paradigm that is dominant, with the qualitative phase adding information essential for the conduct of the quantitative phase. The exploratory design for instrument development has two-phases in which the qualitative phase is followed by the dominant quantitative phase as portrayed in Figure 3.1.

The sequential mixed method exploratory design for instrument development has three-phases in which the qualitative phase is followed by the dominant quantitative phases as portrayed in Figure 3.1. Based on the literature review (etic perspective) and analysis of focus group data (emic perspective), multiple items were identified for inclusion the item pool (Durham et al., 2011). A literature review is essential prior to tool development as it is one of the primary ways of delineating the construct of interest from the extant literature (etic perspective) (Onwuegbuzie, Bustamante, & Nelson, 2010). The qualitative phase is important as it allows for input from local experts (emic

perspectives) (Onwuegbuzie et al., 2010), or in this case, volunteers in community health promotion in Taiwan, and local experts, or key informants (Onwuegbuzie, et al., 2010), such as the managers responsible for organising volunteers or the nurses responsible for supervising volunteers in Taiwan. In Phase two the identified items are organised into the first draft of the tool. Ideally, the local experts are asked to review the tool at this stage to assess the appropriateness of the items (Onwuegbuzie et al., 2010). Once the initial tool has been developed it should be subjected to a field test. The focus for this test is on content-related validity (that is, face validity, sampling validity, and item validity) and two aspects of construct-related validity (that is, outcome validity and generalisability) of the initial tool (Onwuegbuzie et al., 2010). After the tool has been revised according to feedback, it is then subjected to further testing. At this stage the sample size should be larger to enable exploratory factor analyses such as the recommended minimum of 5-10 participants per item (Cattell, 1978). The tool is then subjected to item reduction and testing prior to distribution to a large sample of volunteers followed by analysis of the level of burden on the different levels of volunteers. The final phase of the study is where suggestions for improvement are developed.

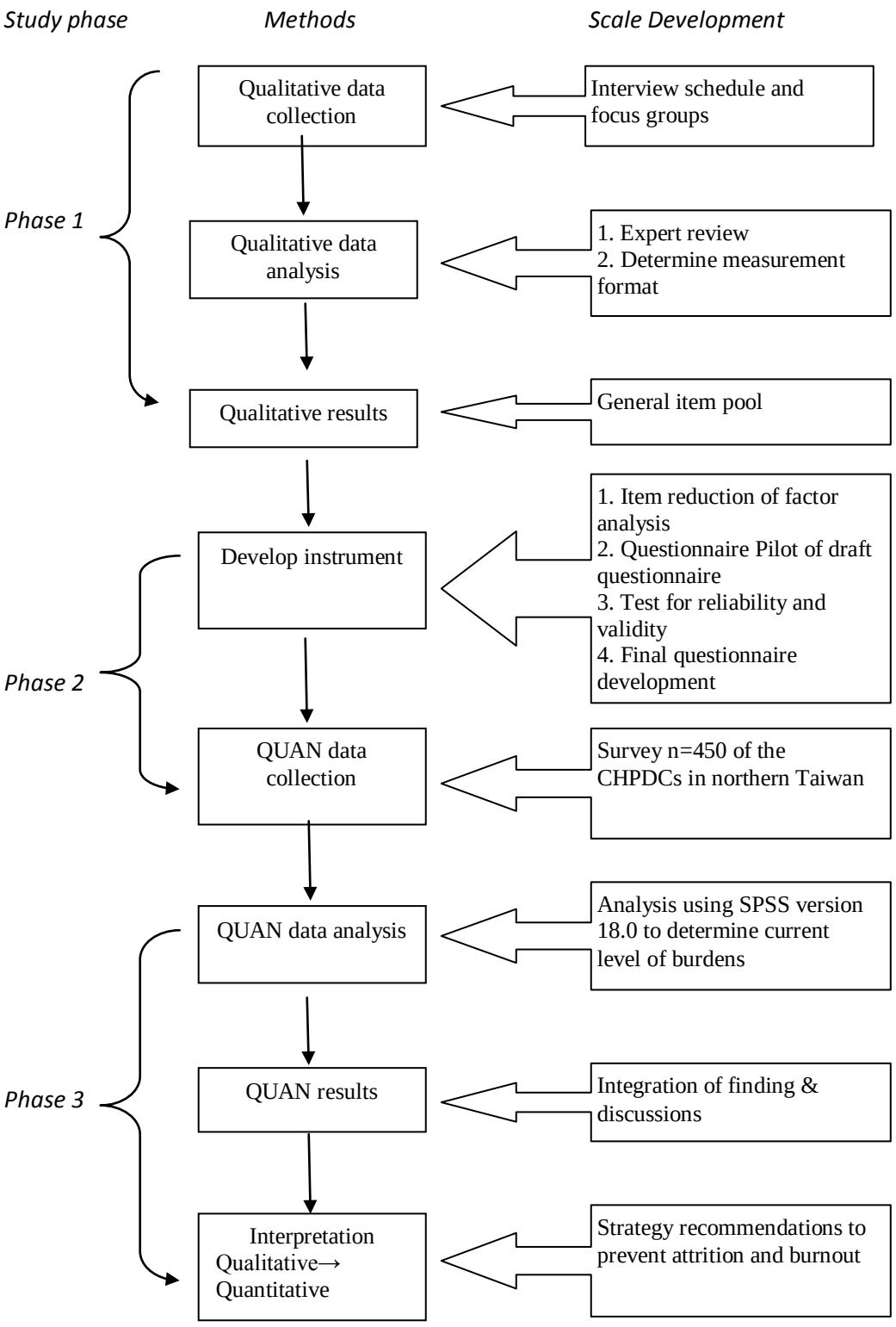

Figure 3.1: Exploratory Design: Instrument development model (Creswell & Plano Clark, 2007, p. 76)

3.3 Overall Research Purpose and Aims

A mixed-methods research design composed of both qualitative and quantitative methods in various phases of the study was used (Creswell & Plano Clark, 2007; Tashakkori & Teddlie, 2003) in the development and testing of the new instrument developed to measure the burden experienced by community health volunteers in Taiwan. Several stages were involved in this mixed-methods research design and they are outlined in detail below. In particular, the usual procedures in the development of a questionnaire were included (Streiner & Norman, 1995; Tashakkori & Teddlie, 2003):

- Determine what it was I wanted to measure and the constructs to be addressed;
- Generate an item pool, at an appropriate reading level, using short, single question items;
- Determine the scale of measurement for the items, and the physical construction of the instrument;
- Have the item pool reviewed by experts.

To meet this aim of the study it was essential that the tool possess discriminative items intended to distinguish between subjects on major characteristics and properties, such as workloads in terms of physical, emotional and timing; deficiency information; insufficient emotional support from family, volunteers, Community Health Nurses and community residents; lack of instrumental support; deficit in communication skills; lack of cooperation, and lack of confidence (Campbell, et al., 2008; Chuang, 2001; Guan, 2002; Knight, et al., 2000; Nan, 2002; Zheng, 2001). To meet standards of psychometric validity, the final instrument also needed to exhibit reliability, convergent

validity, construct validity, reliability, sensitivity to change and be easy to interpret, score and administer (Streiner & Norman, 1995).

The research project had four main aims:

- To explore the burden on a subset of health promotion volunteers in the community in Taiwan;
- To use this information to develop an assessment instrument to identify the level of burden on current volunteers;
- To apply the instrument across the novice, experienced and veteran (the leader, cadre members and fundamental members) groups of volunteers in Taiwan; and
- To use the outcomes of the assessment to identify possible support interventions.

3.4 Overall Procedure

3.4.1 Phase 1: Focus groups and item generation

The candidate items were developed from a number of sources. The relevant literature on the topic such as the burden on similar workers such as health workers and family carers, were reviewed at the commencement of the study. Candidate items were also developed from focus groups with current community health volunteers and health workers such as nurses (Streiner & Norman, 1995).

3.4.2 Phase 2: instrument development

Step 1: Item reduction

In this phase the candidate items were reduced to a manageable number by the following stages. To begin, obvious doubles and ambiguous items were removed from the list. The items were presented to an independent group of volunteers for ranking. The items were ranked according to importance on a five-point scale from “very important” to “not important at all”, rather than as a yes/no answer.

Step 2: Pilot of first questionnaire draft

After the determination of the most important items, the first draft of the questionnaire was piloted with another independent group of volunteers. After this stage, the redundant items were removed and the final questionnaire was developed using principle component analysis for the statistical item reduction.

Step 3: Test for reliability and validity

The questionnaire was tested for reliability (test-retest: using an independent sample of volunteers who were asked to answer the questionnaire twice within a short timeframe) and validity (face validity or how appropriate, relevant and understandable the items were determined once again by a focus group). In addition, expert advice was sought. It was considered important to rate experts’ opinions of the relevance of every item to ensure that what the researcher intend to measure was accurate, to evaluate the item’s clarity and conciseness, and to identify any items that the first phase of the research may have failed to reveal (DeVellis, 2003; Willis, 2005).

Step 4: Final questionnaire

The final questionnaire was developed by taking the results of Step 3 into account. A number of positive aspects related to volunteering were added to the questionnaire on advice from the expert group. This then became the final version of the tool.

3.4.3 Phase 3: Suggested strategies for reducing burden on volunteers

After four steps of the second phase had been successfully completed, the questionnaire was distributed to a larger sample of volunteers to measure the current levels of burden on health promotion volunteers across Taiwan. This information will be used to recommend strategies to assist reducing the burden on volunteers in the future.

3.5 Setting, Participants and Sampling Procedure

3.5.1 Sampling frame and sample size considerations

For the initial qualitative part of the study of item generation and assessment purposive sampling targeting information rich Taiwanese health promotion volunteers, community health promotion nursing clinicians and senior community health nurse experts was applied. The sample size was decided by internal saturation.

The initial questionnaire was then piloted using a sample from the target group of Taiwanese health promotion volunteers. A sample size of 47 participants is rather large for a pilot study allowing me to also conduct item reduction by using statistical tools.

Test-retest reliability was assessed with a sample from the target group of Taiwanese health promotion volunteers. A sample size of 40 participants with 2 observations per participant achieves in excess of 80% power to detect Cronbach's alpha of 0.6 to be different from 0 with a significance level of 0.05.

In a final step the newly developed questionnaire was used to assess the burden perceived by Taiwanese health promotion volunteers utilizing a stratified random sampling approach. Sampling was stratified by the type of the CHPDC in three groups (community, hospital and public health) as this guaranteed representativeness of the three main kinds of health promotion volunteers. A stratified random sampling approach was applied because I suspected that the kind of burden perceived by volunteers was different for the three main groups. In addition I also wanted to analyse the internal structure of the newly developed scale using factor analysis.

The sample size had to be sufficient to allow factor analysis. Also the sample size had to accommodate multivariable linear regression analysis in order to assess the effect of various characteristics on the perceived burden of volunteering.

Currently there is no statistical theory that allows sample size calculation for factor analysis. Mundfrom et al. (2005) conducted simulation studies for factor analysis to gain reproducible results. These studies showed that a sample size of 100 is sufficient to gain high level of reproducibility if a tool with 12 or more items is analysed, assuming 5 underlying factors and low communality.

Similarly no statistical theory allows direct calculation of minimum sample sizes required for multiple linear regression analysis. Knofczynski & Mundfrom (2008) suggest that a minimum sample size of 400 is required for 9 independent characteristics and a squared multiple correlation coefficient of 0.2.

3.5.2 Phase 1: literature review and focus groups

A descriptive explorative qualitative design was used in Phase one. Very little information about community health volunteers in Taiwan was identified after an extensive literature search (Cinahl, Medline, PsycINFO, Proquest and Web of science). Using the terms such as: work burden and work challenges; health promotion volunteers and lay health workers; community health promotion development, community health building, healthy community, healthy city (Cooper, 1989, 1998, 2010). The search demonstrated that there was a gap in knowledge about the burden placed on health promotion volunteers in Taiwan. There were a number of papers that explored the burden on volunteers in general. All papers included in the review had an empirical basis to the study of volunteer burden. A number of the studies identified included in the databases included samples made up of a mixture of paid and unpaid community health workers; these studies were not included. Further, a number of studies described the use of volunteers but critique of the paper revealed the workers were paid some remuneration; those papers were also excluded.

Three researchers, working independently, appraised each paper for suitability, relevance and trustworthiness and undertook quality appraisal of selected papers. Consensus on quality was reached regarding each paper included in the review process. Papers that met the inclusion criteria were included, regardless of the evidence level.

After initial identification of candidate items from the available literature, items were generated by focus groups conducted with volunteers from the target population. Focus groups using nominal group techniques (Freeman, 2006; Gallagher, Hares, Spencer, Bradshaw, & Webb, 1993; Van de Ven & Delbecq, 1972) were conducted. Each focus

group was comprised of current volunteers and included the fundamental members (which mean newcomer, novice), the cadre members (which mean experienced volunteers), the leaders and the chiefs (which mean established, consequent or veteran volunteers) . In addition, another three in-depth interviews were conducted with four interdisciplinary experts (Streiner & Norman, 1995; Onwuegbuzie et al. 2010); two nursing clinicians of the Public Health Centres, and two persons in charge of the Community Health Promotion Development centres of the hospital-base type.

Focus groups

Focus groups are described as "…a research technique that collects data through group interaction on a topic determined by the researcher" (Morgan, 1997, p 6). There are three essential uses for focus groups in present social science research: a self-contained method which serve as the primary means of collecting qualitative data; a supplementary source of data in studies which serve as a source of preliminary data in a primarily quantitative study; multi-method studies which typically add to the data that are gathered by participant observation and individual interview through other qualitative methods (Morgan, 1997).

Focus group interviews are a valid technique to use when a moderator (or an investigator) in charge of a small and homogeneous group of approximately 6-12 participators openly discusses a research topic or issue (Fern, 2001; Langford & McDonagh, 2003; Stewart, Shamdasani, & Rook, 2007; Tashakkori & Teddlie, 2003). In fact, Wodak and Krzyznowski (2008, p. 163) portray how focus groups "are used (1) whenever one is exploring shared or individual opinions and (2) whenever one is willing to empirically test whether those beliefs and opinions are well grounded and

stable, or whether they are prone to change in the situation of interaction with others, who are possibly seen as equals and are able to challenge and modify a participant's view".

A focus group interview is a meeting or conversation, not an argument or a problem solving exercise. Investigators may obtain non-expectant multiple dimensions data from participants considering and portraying of other participants' opinions. Therefore, the researcher chose to use a focus group rather than participant observation or in-depth individual interview, as the focus group interview is a highly efficient form of data collection for 6-10 participants in the available time frame of one and half hours. Secondly, focus groups can serve to support the control of the quality of information retrieved because the moderator ensures each participant is treated equally in order to exclude false and extreme opinions. Thirdly, the dynamics within a group can serve to focus on and share each participant's experiences on the main issues (Fern, 2001; Puchta & Potter, 2004; Stewart, et al., 2007; Tashakkori & Teddlie, 2003). In addition, as indicated previously, a focus group can also help the participants to become more aware of their own situation and thus help them to seek solutions for their own problems.

In contrast, one must be cautious of the disadvantages of using focus groups. The role of the moderator is crucial in terms of dealing with individuals and directing the group skilfully. Besides, the moderator has a role in encouraging the less verbal and controlling the equity of participation in the process of the focus group interview. In addition, the number of guiding questions should be less than 10, which helps to ensure the participants communicate adequately in the interview (Fern, 2001; Puchta & Potter,

2004; Stewart, et al., 2007) rather than being directed totally by the moderator of the group. When conducting a focus group, it is important for the interviewer (researcher) to remain non-judgemental to the responses provided by the interviewees to prevent potential biasing of the group members by the opinion of the moderator. All focus group interviews were conducted at a suitable location and time when the volunteers felt comfortable talking (Morgan, 1997; Myers & Anderson, 2008; Stewart, et al., 2007), such as a circular or rectangular conference table that produce a U- shaped arrangement of the participants and an easier situation for the moderator to encourage participants to declare their experiences.

Audio-taping was considered an adequate and important way to record the data. It was the basic means of capturing the observations and the quality of the recorded data. In the conference room, the recording equipment was set up at the site and two well functioning digital recorders with quality microphones, checked for audio quality, were accessed. The researcher used an assistant to make notes and records while the group was speaking to provide information in case of recorder failure and also to note interactions and non-verbal messages not picked up by the recorder (Morgan, 1997; Myers & Anderson, 2008; Puchta & Potter, 2004; Stewart, et al., 2007). Detailed items and processes are described in Appendix A, B and C. All digital-recordings were transcribed within 24 hours after the interview. As focus groups were conducted in Taiwanese language and then transcribed to English, all transcriptions were checked for accuracy buy a linguist who was separate to the project. The linguist signed to verify each transcription for accuracy of translation. Data were analysed using a qualitative content analysis approach.

The following types of questions were asked during the focus groups:

TABLE 3.1: QUESTION FROM FOCUS GROUPS

To volunteers	To interdisciplinary experts
• What motivated you to participate in the volunteer program?	• What motivates volunteers to participate in the volunteer program?
• How were you recruited?	• How were the volunteers recruited?
• What kinds of health promotion work do you do?	• What kinds of work for health promotion do the volunteers do?
• Do you experience any type of burdens in being a volunteer, for example, stress?	• Do volunteers experience any type of burdens in being a volunteer, for example, stress?
• According to 4, how do you manage these issues associated with the burden of volunteering?	• According to 4, how do volunteers manage the issues associated with the burden of volunteering?
• Why do you continue as a volunteer?	• What makes volunteers continue?
• How do you encourage or share your experiences with other volunteers?	• How do volunteers encourage or share their experiences with other volunteers?

This guide for conducting the focus groups was devised based on the investigators' empirical knowledge and a literature review pertaining to health promotion, community health development, volunteer experience in other countries, and the burden concept.

3.5.3 Phase 2: instrument development

Step 1: Questionnaire development

In this step the candidate items were reduced to eliminate redundant and ambiguous items. This stage involved a review of the candidate item pool by an expert panel in community health volunteering to identify if any of the 44 items in the questionnaire (version 1; Appendix E) were ambiguous, redundant, less relevant, or lacked face validity. The expert review panel consisted of an independent group of volunteers (n=17), a group of community health promotion nursing clinicians (n=5), and a senior Community Health Nurse expert (n=1) who were purposively sampled. This process

included the determination of the importance of each of the 44 items by assessing them on a five-point scale that ranged from “very important” to “not important at all”. In this way, the importance of the items was established. Factor analysis using principle component analysis was applied to identify the dimensions of the scale and to reduce items statistically (Streiner & Norman, 1995; Onwuegbuzie et al. 2010).

Step 2: Pilot of questionnaire

After the item reduction, version 2 of the questionnaire was developed (Appendix F) and piloted with a further group of volunteers. This step was undertaken to assist with the identification of redundant items. This involved the purposive sample of a different independent group of volunteers (n= 47) who were asked to complete the version 1 questionnaire in April, 2010 (Tashakkori, & Teddlie, 2003).

Step 3: Test-Retest of the questionnaire

Scale Version 2 and Test-retest reliability

The above steps produced a reduced set of items that had internal consistency and this set of items was designated as Version 2 of the new scale. It was anticipated that this version would contain about 20 items. In reality it actually included 15 items. Version 2 of the new tool was tested with a sample of volunteers to determine the test-retest reliability of the items identified, with the scale being administered twice to the same volunteers over a short period of time (one to two weeks) in order to avoid true changes. A total of 45 volunteers assessed the tool (version 2, Appendix F) for test-retest reliability in May, 2010 (Creswell & Plano Clark, 2007; Tashakkori, & Teddlie, 2003; Streiner & Norman, 1995).

Step 4: Assessment of the level of burden on volunteers in Taiwan

In this phase, the final questionnaire, version 3 (Appendix H), was administered to community health volunteers across an area of northern Taiwan to determine the current level of burden being experienced by those volunteers. A sample size of 435 subjects was recruited from the Public Health Clinics via negotiation with the Chief of the Health Section of the Public Health Bureau in Taoyuan, Taipei and Hsinchu County Governments. The subjects in this phase of data collection were not the same participants as those in the previous stages because the purpose of the quantitative phase was to generalise the results to the wider target population of all community health volunteers in Taiwan. Therefore, different participants were used in this phase who reflected the broad spectrum of Taiwanese volunteers (Creswell & Plano Clark, 2007; Tashakkori, & Teddlie, 2003). Further, the aim of Step 4 was to include a large sample of volunteers to complete the questionnaire in order to assess the current level of burden experienced by the cohort of community health volunteers in Taiwan. This step of the project used stratified random sampling and the survey tool was sent out via community health development centres in the north of Taiwan in June and July, 2010. The sampling was stratified by the type of the CHPDC into community, Hospital, and Public Health in order to guarantee representativeness for all three kinds of volunteers. The sample design was also chosen because it was convenient and economical (Polit & Hungler, 1999; Tashakkori & Teddlie, 2003).

3.5.4 Phase 3: Strategy development

In the final step, the current burden on the health promotion volunteers in Taiwan was further analysed and used to identify and recommend strategies that could be adopted to help overcome burden in the future. These proposed strategies are outlined in Chapter 7.

3.6 Data statistical and analysis

3.6.1 Analysis of focus group data

The first step of the analysis of focus group data was to transcribe all interviews immediately; transcribing soon after the interview increased the probability that memories could be more readily recalled and details other than the spoken word can be added. Morgan (1997, p. 60) emphasised "…we must recognise not only that what individuals do in a group depends on the group context but also that what happens in any group depends on the individuals who make it up…". Furthermore, transcription not only could refresh incomplete sentences, half-thoughts, parts of words and other characteristics of spoken words, but could also use words and the way in which nonverbal communication, gestures, and behavioural responses were expressed, as these are possibly important sources of information (Stewart et al., 2007).

The accurate transcriptions and translations were completed by the researcher and confirmed by the participants (A. M. Chang, Chau, & Holroyd, 1999 ; Maneesriwongul & Dixon, 2004; Mercer, DeVinney, Fine, Green, & Dougherty, 2007). During the data analysis process, the revealed codes, themes and categories were examined by the researcher and discussed with supervisors. These strategies were employed to ensure the credibility, fitness, consistency and conformability of the qualitative data (Tashakkori & Teddlie, 2003). Experts, including qualitative nurse researchers and community health promotion development experts, reached consensus on the saturation of the categories through a review. Finally, the themes agreed as consistent groups of codes were represented on the developing instrument (Creswell & Plano Clark, 2007). Each code (feature) played a part in the design of the instrument.

Principles that help researchers to ensure that the findings reflect what was shared in the groups are recommended by Krueger and Casey (2000, p.139) as follows:

- "Keep the purposes in mind as they determined the depth or intensity of analysis"
- "Develop good questions: some questions are difficult if not impossible to analyse"
- "Maintain a systematic and sequential analysis procedure"
- "Have a clear sense of the study field including the background information and the past research"
- "Be practical: in addition to academic consideration, such as strengthen research design, a practical mindset is open to setting aside early hunches"
- "Be present: many things are learned by just watching the group and listening to how they talk"
- "Consider other factors: the words (the tone), the context of the interaction or group situation and the internal consistency of opinions within an individual"
- "Take a few steps back to allow big ideas to percolate".

Four criteria (credibility, dependability, confirmability, transferability) asserted by Lincoln and Guba (1985, pp. 289-331) are a well accepted standard to assess the trustworthiness of a qualitative study. How the criteria were applied to the main study is elaborated next.

Credibility refers to confidence in the truth of the data and interpretation of data (Polit & Beck, 2010, p. 443). Two aspects, 'prolonged engagement and persistent

observation' and 'triangulation', as outlined by Lincoln and Guba (1985, p. 289), were applied in the study. Additionally, other strategies including member checking, and the researcher's credibility were used to boost the credibility of this study.

Dependability refers to how rigorous the stability of data is over time and over situations (Polit & Beck 2010, p. 492). The researcher was both the data collector and the analyst so the context regarding the situation or study field was clear and easy to follow. This design advanced data stability. To strengthen the rigour and strength of data analysis, a technique of inquiry inspection was adapted; that is, the Associate Professor in Taiwan was engaged to examine the data along with the supporting documents to audit the analysing process. In addition, the researcher supervisor was involved with data collecting process by offering advice based on the e-mail reports written by the researcher as well as personal discussion during the stages of analysis and reporting. By these efforts, the dependability of the study data could be enhanced (Lincoln & Guba, 1982).

Confirmability refers to the neutrality of the data. In other words, it means the potential for congruence between several independent people about data accuracy, relevance or meaning (Polit & Beck 2010, p.492). Different records including raw data, data analysis products and data reconstruction products, were provided to the Associate Professor and the research supervisor so that the confirmability of this study could be boosted (Lincoln & Guba, 1982).

The concept of transferability is similar to the idea of external validity in quantitative studies. In other words, transferability is the possibility of whether the findings of a

qualitative study can be applicable to other similar situations. According to Lincoln and Guba (1985, p.321), transferability refers to the extent to which the findings from the data can be transferred to other settings or groups. Through research design and sufficient information can increase transferability or applicability (Polit & Beck 2010, p.492, 506). Verbal and non verbal data gathered from focus groups and individual interviews were detailed in transcriptions. Thus, efforts were made to produce a thick description so the readers can judge the possibility of transfer of this study's finding to similar situations.

3.6.2 Item reduction

The criteria for item reduction are to ensure that the questions asked are comprehensive, unambiguous and only asked as a single question (DeVellis, 2003; Frazer & Lawley, 2000; Pett, Lackey, & Sullivan., 2003; Streiner & Norman, 2008). For this step, redundant items from the initial pool of items were removed or revised according to these criteria. In this step the candidate items were reduced to a manageable number using the following stages. To begin, obvious duplicates and ambiguous items were removed from the list. The items were then presented to an independent group of volunteers for ranking. Respondents were asked to rate the degree to which items corresponded with construct definitions. These ratings were then ranked according to importance on a five-point scale from "very important" to "not important at all".

To quantitatively assess the content of the items being used, both sorting and factor analytical techniques were used (DeVellis, 2003; Floyd & Widaman, 1995; Pett, et al., 2003; Streiner & Norman, 2008). The responses were factor analysed and those items that loaded highly in the identified factors were retained for subsequent administration.

Assuring content adequacy prior to final questionnaire development provides support for construct validity as it allows the deletion of items that may be conceptually inconsistent.

Factor analysis "… is predicated on the belief that a battery of tests can be described in terms of a smaller number of underlying factors" (Streiner & Norman 1995, p. 65). Factor analysis can be used for item reduction which is especially useful with multi-item inventories designed to measure personality, attitudes, or behavioural style. In this study, factor analysis was used to reduce a larger set of related variables into a smaller set of general summary scores that explain most of the variation observed. The factors were selected to explain the covariances among the observed variables. Data were managed and analysed using the Statistical Package for the Social Sciences (SPSS Version 18.0; PASW; SPSS Inc; Chicago, Illinois). All comparisons used a level of significance of 0.05 (2-sided test).

An adequate sample size is important to meet the assumptions of this study or ensure statistical significance in exploratory factor analysis. A sample size of 150 observations is generally considered sufficient to obtain an accurate solution in exploratory factor analysis, as long as item inter-correlations are reasonably strong (DeVellis, 2003). Item evaluation through factor analysis is one of the most critical steps in determining the viability of the scale (DeVellis, 2003).

For the scale development process, there are two basic types of factor analyses. The first type is called exploratory factor analysis and is normally used to reduce the observed variables. The second type is termed confirmatory factor analysis and is used

to assess the quality of the factor structure by statistically testing the significance of the overall model, as well as the relationships among items and scales (DeVellis, 2003; Pett, et al., 2003; Streiner & Norman, 2008). Exploratory factor analysis was used in this study to inductively approach the identification of those items that define underlying constructs and load highly on the respective factors. However, prior to conducting the factor analysis, examination of inter-item correlations among the variables is useful to identify those that need to be deleted. Any variable that correlates at less than 0.4 with all other variables may be deleted from the analysis. Low correlations indicate items are not within the appropriate domain and are producing error and unreliability (DeVellis, 2003; Pett, et al., 2003; Streiner & Norman, 2008).

Principle component analysis is a mathematical procedure that identifies and converts from data from a group of correlated items a reduced set of uncorrelated variables ("the principle components"). These principle components are orthogonal to each other and are calculated such that the first component has the greatest variance. During the analysis the number of components required was decided by the percentage of total variation that was explained. Total variation explained by the components had to be above 80%. Items with a factor loaded greater than 0.4 were retained. Scree plots were assessed. Eigenvalues greater than 1 (Kaiser Criterion) and Scree plots of the percentage of variance explained were used to determine the number of factors to retain. As the literature points out, if the intent is to develop scales that are reasonably independent of one another, more reliance should be placed on the orthogonal analyses when removing items (DeVellis, 2003; Floyd & Widaman, 1995; Streiner & Norman, 1995, 2008). The highest loaded variable per component was chosen to represent the component.

3.6.3 Analysis of test-retest, reliability and validity of data

Validity is really a characteristic of how a scale is used, not of the scale itself. One should indicate to reflect on at this time is that the validity of a scale is not confidently established during development as DeVellis (2003, p. 159) articulated as follows: "…validation is a cumulative, ongoing process…"

A pilot study was conducted as a pretesting process in order to evaluate and refine the instrument. The purposes of piloting are to determine the length of time to administer the entire instrument, to see whether community volunteers are able to understand the instrument, and to determine whether some statements of the instrument might be seen as offensive or are objected (Polit & Beck, 2010). After this step, the inappropriate items were revised and the final questionnaire was developed. The retained items were then presented to a new sample of the target population with the objective of examining how well those items confirmed expectations regarding the volunteers' work burdens of the new measurement.

It was considered important to rate experts' opinions of the relevance of every item to ensure that what the researcher intended to measure was accurate, to evaluate the item's clarity and conciseness, and to identify any items that the first phase of the research may have failed to reveal (DeVellis, 2003; Willis, 2005). This review serves various purposes, such as, having experts review the items can confirm the definition of my study phenomenon; reviewers also can evaluate the items' clarity and conciseness; and expert can provide is identifying ways of tapping the phenomenon that the researcher have failed to include (DeVellis, 2003; Streiner & Norman, 2008; Waltz, Strickland, &

Lenz, 2005). I delivered a copy of an overview of the research purposes and background, along with the second version questionnaire to the nominated reviewers. The experts (Appendix G) were contacted previously to ascertain their availability and willingness to review the draft instrument. They commented feedback on the relevance and appropriateness of the items; the redundancy of any items and the simplicity of wording of items to the research objectives.

Test-retest reliability is a two score method computing reliability assessing stability of results within a short timeframe. The highly correlated test-retest results may be critical to demonstrate the scale's stability separated in time and to seek the measurement stability of both the measure and the phenomenon (DeVellis, 2003; Streiner & Norman, 2008). Test-retest reliability is assessed using intra-class correlation for a scale comprising continuous variables, and percent agreement for categorical data. An intra-class correlation of 0.7 or greater generally constitutes acceptable reliability for a scale.

Test-retest was also assessed using graphical analysis suggested by Bland and Altman who earlier identified apparent weaknesses in the conventional approach and recommended an alternative (Bland & Altman, 1986). The plot of differences against means allows investigating a possible relationship between the measurement error and the true value. In addition the concordance correlation coefficients (L. I. K. Lin, 1989) was used which evaluates the degree to which pairs fall on the 45 degree line of identity.

Internal consistency was measured using Cronbach's alpha which tells how closely the items measure the same construct (DeVellis, 2003; Streiner & Norman, 1995).

Cronbach's alpha coefficients range in value from 0 to 1. The higher the score is, the more internally consistent the scale. A score of 0.70 for the exploratory measurement coefficient alpha provides an indication of strong item covariance or homogeneity and suggests that the item domain has adequately been captured and that additional items will have progressively less impact on the reliability and might lower the average inter-item correlation.

3.6.4 Analysis of data from tool delivered to health volunteers across Taiwan

All data were entered into SPSS (IBM SPSS version 18, Chicago, Illinois) for Windows. Descriptive statistics such as percentages, mean values, standard deviations and median values were calculated to describe the sample. This was followed by inferential statistics using Chi-square tests, and analysis of variance or the non-parametric Kruskal-Wallis test to determine whether the burden differs between the three groups of volunteers (fundamental, cadre, and leaders).

3.7 Language, Translation and Transcription

The tool was originally developed in Chinese but the final version was also translated into English. The translator was qualified in community health nursing and a bilingual expert who completed a master or PhD program in an English speaking country (A. M. Chang, et al., 1999 ; M. H. Lee, Holzemer, & Faucett, 2007; Maneesriwongul & Dixon, 2004; Mercer, et al., 2007).

The language used during the data collection in this project, both for the focus groups and the survey, was Mandarin Chinese, the official language of Taiwan. Using the local

language helped the researcher and sample cases to understand the concepts and ideas easily in the focus groups and the questionnaire interviews. It also allowed volunteers to express themselves with ease.

In Taiwan, people speak Mandarin and Taiwanese; few speak, read, and listen to English. Given that the researcher speaks and understands Mandarin and Taiwanese very well, the project fieldwork was conducted wholly in Chinese language. Notes taken by the researcher during focus groups was also in Chinese.

3.8 Ethical Considerations

Approval to conduct the study was sought from the James Cook University Human Research Ethics Committee (HREC No.: H3402, Appendix I), the committee of the Institutional Review Board (IRB) of Chang Gung Medical Foundation in Taiwan (CGMF-IRB No.: 98-2586B, Appendix J), and the Public Health Bureau of New Taipei City, Taoyuan County and Hsinchu County Government in Taiwan (Appendix K). All participation in the study was voluntary.

For phase 1, a participant Information Sheet (Appendix B) was developed with a plain language statement that outlined the participation in the study. The information sheet provided the names of contacts in the case of any concerns participants may have during their study participation. It was offered to a small cohort of volunteers requesting them to read it and consider joining a focus group (Morgan, 1997; Stewart et al., 2007). Those who agreed to be interviewed in the focus groups were asked to sign an Informed Consent Form (Appendix A). This group was also asked to review the clarity of the

Interview Guide Questions (Appendix C). Interview digital records were securely stored on the researcher's personal computer and then destroyed at the end of the project. Transcriptions of the data are stored as directed in the School of Nursing, Midwifery and Nutrition archives. Confidentiality and anonymity were preserved as far as possible. However, as these participants were taking part in a focus group, the other members of the focus group knew who they were and what they said in the group. Hence, anonymity and confidentiality is difficult to guarantee in this circumstance. The participants were advised of this on the participant Information Sheet and the Informed Consent Form.

In phase 2, steps 1-3 of the research process, the participants were recruited by invitation. A further Information Sheet was sent to potential participants that outlined the requirements of participation (Appendix D). Those who agreed to participate were also asked to sign an Informed Consent Form (Appendix E, F) after the researcher obtaining the amendment approval from the committee of the Institutional Review Board (IRB) of Chang Gung Medical Foundation in Taiwan (CGMF-IRB No.: 99-0913C, Appendix J).

The fourth step in phase 3 of the research involved anonymous completion of the tool. The participants were sent an Information Sheet (Appendix D) that informed them that completion and return of the completed questionnaire would indicate consent to participate in the study (the final version, Appendix H). This is usual practice in survey research (Creswell & Plano Clark, 2007; Polit & Hungler, 1999). The form also outlined the requirements of participation in the study and provided the participants with the names of people to contact in the case of any concerns arising during their

study participation. Participants were assured that all attempts were taken to ensure their anonymity and confidentiality and reminded that they had the right to withdraw from the study at any time. All identifying information gathered from participants was stored in locked filing cabinets only accessible by the research team.

3.9 Summary of this chapter

The chapter has outlined the overall research design of the study that was a mixed methods approach to instrument development. An overview of the study background, aims, research questions, design and procedures used in the project are also included. An overview of the sampling strategies, data analysis techniques employed, and the ethical issues addressed by the researcher are also discussed. The following chapter outlines the results of Phase 1; the focus groups undertaken to identify candidate items.

Chapter 4. Qualitative Findings

"On the beginning of my volunteering journey, I was ridiculed by others. They teased me that I have too much time (with an emotional hand gesture). I felt…quite upset. I just want to commit myself to public welfare... but people do not appreciate" (Focus group participant)

4.1 Introduction

This chapter presents an overview of the analysis of focus group data that was part of initial item generation related to the burden experienced by community health volunteers in Taiwan. Initial qualitative inquiries are essential for the development of survey tools. In particular, qualitative data collection approaches, especially interviews and focus groups, contribute significantly to the critical phase of item generation-the initial phase of tool development (Creswell, 2009; Creswell & Plano Clark, 2007)(Nassar-McMillan, Wyar, Oliver-Hoyo & Ryder-Burge 2010; Creswell 2003). Phase 1 of the study was also supported by the previous work experience of the researcher and a critical review of the literature, explained in more detail in the previous methodology and methods chapters. This chapter presents a manuscript that provides the findings of the qualitative phase of the study.

4.2 Characteristics of the Study Sites

The researcher's previous work experience has involved undertaking various community health promotion development projects in cooperation with the Bureau of Health. These projects have been undertaken in the northern counties of Taiwan, including Taoyuan, Taipei and Hsinchu County, since 2003. For that reason, as well as

ongoing researcher links, those sites were chosen for the study. Further, the characteristics of the population, the local culture and geography are similar across these regions.

4.2.1 Overview of locations

Taoyuan County is located approximately 40 km southwest of Taipei City in northern Taiwan and occupies 1,220 km². It is made up of low-lying plains, interconnected hills and plateaus. Its shape has a long and narrow southeast-to-northwest trend, with the southeast in the mountains and the far end on the shores of the Taiwan Strait. The population of Taoyuan County was 2,003,205 at the end of 2009. The County has a population density of 1,640.69 persons per square kilometre and its population is increasing at a rate of two to three thousand per month. Taoyuan County is the fastest growing area among the five metropolitan areas of Taiwan. The goal of the Health Department is to provide the County residents with a sound, high quality health promotion system. A community health building (development) centre has been set up in each city or township to mobilize local resources for the promotion of better community health. Programs for the prevention and control of cancer, for the encouragement of smoke-free families and work places have been implemented. Work has also been done to promote the health of children, adolescents, adults, and the elderly. Health education designed to help people develop healthy behaviours and to promote their mental and physical health has been intensified (T. C. G. Bureau of Public Health, Taiwan, 2011).

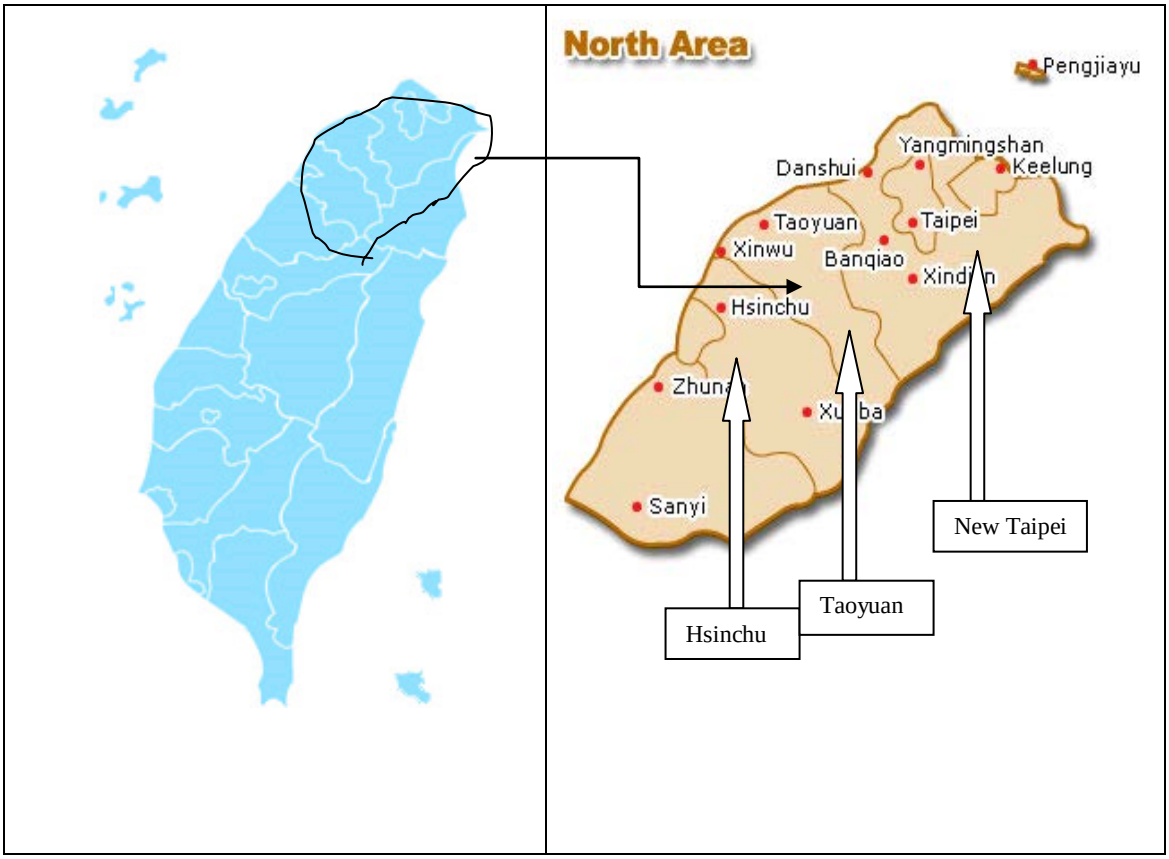

Figure 4.1 Taiwan Island

Figure 4.2 North Area of Taiwan

Address from http://www.cwb.gov.tw/eng/index.htm retrieved on 04/10/2010

4.3 Declaration and Contribution Table for Thesis Chapter Four

The following manuscript provides an overview of the focus group data as analysed. It demonstrates the burden experienced by a cohort of community health promotion volunteers that was used to develop the initial version of the BCHPDV instrument.

Declaration by candidate

The extent of candidate contribution to the following publication is as follows.

Publication #3Gau, M., Buettner, P., Usher, K., & Stewart, L. (Under review) Burden experienced by community health volunteers in Taiwan: a qualitative study. *International Journal of Nursing Practice.*

Thesis	Article	Publication Details	Author Contributions	Impact Factors
Chapter four: Qualitative results	Burden experienced by community health volunteers in Taiwan: a qualitative study	*International Journal of Nursing Practice*	Gau (50%) Buettner (10%) Usher (20%) Stewart (20%)	0.9

Declaration by co-authors

The undersigned hereby certify that:

- The above declaration correctly reflects the extent of the candidate's contribution to the work and the extent of contribution of each co-author;
- They meet the criteria for authorship in that they have participated in the conception, execution, or interpretation, of at least part of the publication in their field of expertise;
- They take public responsibility for their part of the publication, except for the responsible author who accepts overall responsibility for the publication;
- There are no other authors of the publication according to these criteria;
- Potential conflicts of interest have been disclosed to (a) grant bodies, (b) the editor or publisher of journals or other publications, and (c) the head of the responsible academic unit; and
- The original data are stored at the following location and will be held for at least five years from the date indicated below:

Location	School of Nursing, Midwifery & Nutrition, Townsville Campus, James Cook University.

Candidate signature		Date 30.11.11
Signature 1		Date 30.11.11
Signature 2		Date 30.11.11
Signature 3		Date 30.11.11

INTERNATIONAL JOURNAL of NURSING PRACTICE

Burden experienced by community health volunteers in Taiwan: a qualitative study

Journal:	*International Journal of Nursing Practice*
Manuscript ID:	IJNP-2011-00270
Manuscript Type:	Research Paper
Key Words:	burden, community health, community health volunteers, community nurses, Taiwan

Abstract

In Taiwan, volunteers of each Community Health Promotion Development Centre (CHPDC) help to diffuse healthy lifestyle education and complement the paid workforce, especially community nurses. An interpretive qualitative design, using focus groups, was conducted to explore the burden experienced by community health volunteers in Taiwan. The data was analysed inductively and emergent themes explored. The majority of participants were female between 50 and 59 years old with an average of 4.5 years experience as a volunteer. Thematic analysis resulted in four themes: preparation and scope of practice; lack of support for the role; work overload; and, expectations of the role. Volunteers in Taiwan do not always have the necessary skills to care for their clientele because of an inadequate program of orientation, lack of continuing education and support for the role, role overload, and expectations placed upon them by the clients and others.

Key words: burden; community health development; community health volunteers; health promotion; volunteers

Introduction

In Taiwan, the increasing prevalence of metabolic syndrome for people aged over 40 years, including hyperglycaemia (12.7%), hypertension (35%) and hyperlipidemia (16.5%),[1] and the increasing age of the population, has increased the need for skilled health professionals. However, there are not always sufficient numbers of nurses to fulfil this role in the community[2]. As one way of supporting a healthy community, the Taiwan Government utilises community health volunteers (CHVs) linked to Community Health Promotion Development Centres (CHPDCs); residents who work under the direction of registered community nurses to improve the overall health of the community. In Taiwan, there have been around 150-300 CHPDCs funded as part of the healthy community-development programme since 1999[3]. CHVs are vital and sustainable to the delivery of health services as they help to deliver healthy lifestyle education in their local community and supplement the paid nursing workforce[3-6]. However, little is actually known about the burden experienced by volunteers as they carry out the role.

The roles of CHP volunteers in Taiwan

There are different levels of functions and roles of CHVs in performing health promotion activities in response to different community health needs in Taiwan, such as (1) encouraging and reinforcing healthy diets and suitable exercise, (2) health education for the illiterate elderly, (3) Promoting a pleasant and secure environment, and (4) regular health screening to prevent chronic diseases, in-home care as well as connecting, coordinating and visiting living alone elderly[7]. To become a community

health volunteer, one must be nominated by the leader of a local community association and attend a volunteering training course. After completing the course, volunteer duties are formalised by the leader of the centre. Similarly to other community health workers, the volunteers are expected to maintain and promote the health of the community[8].

In Taiwan there are three levels of CHVs. The fundamental volunteers are the newest volunteers; those who have just began in the role. Cadre level volunteers are more experienced and capable, have been in the role longer, and are capable of providing assistance to clients and leading a section of work with minor supervision. Leaders are the most experienced and undertake health promotion activities in the community and oversee the work of others[7]. Little is currently known about the burden experienced by volunteers including community health promotion volunteers in Taiwan. While there has been quite a lot of research related to the work of family carers, volunteers fall into a different category to carers and must be researched separately. Therefore, the aim of this paper is to provide an overview of the burden experienced by CHVs in Taiwan.

Method

Study locations, sampling method and participants

A qualitative interpretive study was conducted to better understand the nature of burden experienced by CHVs. The inclusion criteria were: (a) aged 20 years or older (legal age in Taiwan is 20); (b) a CHV for at least 3 months in the health promotion field in any type of CHPDC or a Community Health Nurse.

Seven focus groups comprised of between 4-8 participants were conducted; a

reasonable size for focus [8-9]. After the initial focus group, a modification of the interview guide was made in conjunction with a small number of volunteers and interdisciplinary experts.

Purposive sampling attracted participants who had experience as a volunteer[8]. Focus group interviews were conducted with approximately 40 CHVs, including fundamental, cadre, leader, and chief volunteers (Table 1).

The first author (X) conducted the focus groups using the following questions:

- What motivates you/them to volunteer?
- What roles do you/they undertake?
- What work difficulties do you/they experience?
- How do you/they adjust to these work burdens?
- Whether you/they persevere in the role and what helps new comers?

Ethical issue

Approvals to conduct the study were received from the University Human Research Ethics Committee (JCU) and the committee of the Institutional Review Board (IRB) of Chang Gung Medical Foundation in Taiwan. All participants were recruited by invitation, were voluntary and signed a consent form.

Analysis of data

The proceedings were tape-recorded, transcribed and translated. The data was analysed inductively and emergent themes explored. Once completed, a second and higher order of analysis explored key concepts that emerged from the data. Rigour was ensured throughout the process[10-13]. For example, the words of participants are used, and as far as possible a diversity of voices are included; essential to the interpretive process which highlights the inclusion of the voice of those who experience the phenomenon[13].

Results

Profile of the volunteer

A large majority of the participants were females (39, 88.6%), ranging in age from 27 to 70 years; mostly between 50 and 59 years. The average length of volunteering service performed by the participants was 4.5 years (±SD 2.75). The participants comprised almost equal numbers of urban and suburban dwellers; those belonging to different types of CHPDC, Community Development Association, or Public Health Centre; those who share the same local language (such as Mandarin and/or Holo language); and participants with varying levels of schooling (Table 2).

Thematic analysis revealed four themes: preparation and scope of practice; lack of support for the role; work overload; and, the expectations of the role.

Preparation and scope of practice

This theme focused on the volunteers' views about how they were often poorly orientated to the role of volunteers, and the burden of being only capable of providing limited care to their clientele as a result of their inadequate preparation.

For example, one participant said:

> *"We are not medical professionals, so the instructions that can be provided are limited. Having conversations with the elderly, we may discuss many health related issues. It is worrisome that we are not capable of explaining everything in detail. " (A-6)*

Volunteers are required to undertake health screening for the community and often find client health status assessment problematic. They consider the initial training courses inadequate. One participant articulated the following:

> *"In sum, we care about healthy behaviours for the community residents. Not every aged resident can fully understand what we mean, in terms of prevention of chronic diseases. We need to explain to them in slang language, for example, high blood pressure, high blood sugar or high blood cholesterol, and otherwise they would get confused. For sure, we are the ones who have received some basic professional medical training. We understand and know what to do. However, it is rather difficult to transform our knowledge to those elderly people." (E-127)*

The participants discussed being asked to undertake writing tasks ranging from gathering and inputting data for audits or for trust management, to project planning proposals. As one participant commented:

> *"We cannot do it. We plan projects, but we are not trained to write the proposal for the community. In fact, writing a proposal involves many procedures and needs to be done by professionals." (D-43)*

Lack of support for the role

Participants spoke of the frustration around wanting to perform well in their roles but often being unable to do so due to poor governance of the volunteer system or lack of required resources. Further, the volunteers believed that their role was not accepted, respected, or appreciated by their family who often resisted their activities. However,

it was negative comments or behaviours from the clientele, including clientele fears that volunteers may be of fraudulent intent that concerned them.

A participant explained:

> *"Unfortunately, even though there are many older people living in the community, only few of them would participate in the health service. This service has been provided by the local aged care management centres and stations since last year. All the volunteers are very willing to offer their service. They would be even more encouraged if the elderly could show more interest in this program."* (A-5)

The presence of fraudulent groups in Taiwan is also seen as a contributing factor to the burden for volunteers. 'Scammers' use the same processes as health workers, such as door-to-door visits and telephone contacts, to unlawfully enter a person's home. For instance, one participant stated:

> *"Thanks to that – so called– fraudulent group, no matter when we make calls or home visiting, they treat us like that group. No kidding. No matter how hard we try to prove our identity, no one believes us." (B-49)*

Lack of resources

There are generally a variety of kinds of financial support that the government or social institutions can give to the volunteers and their associations. These include, for example, the direct resources of funding and equipment.

One participant described this dilemma:

> *"'We could not get to know that your program did not offer good benefits. Then, we rather join others (other volunteering teams)! This is one of reasons*

that we keep losing health care volunteers. We can expect that more and more people will turn away from health care programs" (F-187)

Another participant stated that the volunteers' concern about the breakdown of instruments is a result of frequent use:

"In the community blood pressure is popularly used, and measurement errors may occur. Once the residents question the accuracy of the sphygmomanometers, the confidence of those volunteers is affected." (I-3)

Participants talked negatively about a sense of obligation concerning health promotion issues among the chiefs of villages and heads of neighbourhoods in the community. This was often associated with a loss of agency or control. One participant said:

"The director of the Community Development Association is quite warm-hearted and public-spirited. However, the chief of village did not support the community aged care management centre and station wholeheartedly. Not everyone wants to show one's solidarity with the community aged care management centre and station. As volunteers, we cannot change the situation by ourselves." (A-40)

Work overload

'Work overload' encompasses not only participants' concerns about the burden of their many duties but also the hard physical labour required of the role. Within this theme the issue of the volunteers' own well being was discussed, especially in terms of their own continuing physical health and potential risks to their safety.

The low numbers of volunteers in some areas makes the role more difficult for those who do volunteer. One participant said:

> *"There are fewer and fewer young volunteers now. Not many young volunteers would like to join the program; those who stay are mostly over 65. They cannot manage the heavy duties (labour-demanded). The tasks are too strenuous for them."(A-47)*

In addition, a sense of burden was associated with having too many activities to perform and some were frustrated by lack of assistance. One participant commented:

> *"Sometimes a feeling of powerlessness would come up. At the moment of leaving my home for work, I was occasionally struck by a sense of uncertainty—not knowing when the duty would come to an end." (A-50)*

The dangers associated with the health services and home caring were also thought to impact on the role. One participant expressed the following:

> *"In family visiting or mosquito mapping for prevention of Dengue fever, one needs to face the family without any companion. This scares me. Particularly when there is a house dog with the family, I do not dare to go over there." (B-8)*

Burden on volunteers also incorporates a physical dimension where the participants described feeling physically exhausted due to the volunteer role. One participant described the following:

> *"Our Yueh-mei sub-ward covers a wide-ranging, sparsely populated area. There is a great distance to walk from house to house. Family visiting is very*

strenuous." (F-20)

Expectations of the role (either too high or too low)

The final theme, 'Expectations of the role', described situations of being disappointed when their lofty goals regarding primary health care outcomes failed to be reached, or when they became so bored with the same group of clients that their expectations were lowered resulting in apathy around what could be achieved. One participant conveyed the following:

> *"After several successive activities and family visiting, everyone would be exhausted. We need to calm down our emotion and frustration in a proper way." (B-42)*

Another noted:

> "*Doing the same work for a long time may cool down the passion of those volunteers. Especially, as you got negative feedback from others, you could be very frustrated*" (C-163).

The volunteers may offer a way to increase community involvement in health promotion and disease prevention efforts and reach traditionally underserved populations. However, the role can be doomed by overly high expectations and lack of a clear focus.

A participant noted:

> *"Every volunteer has his (her) own style of providing health care service which comes from different values and perspectives of the individual. I cannot make everyone do the same work. Sometimes, I wish that I could take all the*

attention. So, some volunteers will have to carry too many burdens, due to being an idealist."(F-168)

Discussion

The challenges faced by volunteers require greater emphasis in the development of pluralistic approaches to volunteer recruitment, engagement, and management[14]. Daniels et al. (2005) claim that lay health care workers requiring fairly complex health skills in order to undertake their roles[15]. The rich evidence from the focus groups indicates that volunteers in Taiwan do not always possess the necessary skills to care for their clientele. Chief among reasons for this was an inadequate program of orientation which, coupled with a paucity of continuing education, produced fear and anxiety for a group of people wanting to provide the best possible care to their communities. As Crook et al. (2006) suggest, volunteers feeling unprepared to carry out their role well represented a significant stressor for Taiwanese community health volunteers[16]. In addition, Lin, Li, and Lin (2007), who conducted previous work with volunteers in Taiwan, suggest the frequency of training courses is related to job satisfaction. Importantly, they also stated that a well-planned volunteer training programme could attract more volunteers to participate and also enhance the volunteers' self-confidence as well as job satisfaction[17].

Role identity is not only an important construct to develop a favourable attitude through community involvement, but also is a crucial factor in supporting the intention to volunteer[18-20]. Others report that role identity emerged as one of the strongest predictors of both time spent volunteering and length of service. Therefore, it appears the burden is not only related to just what volunteers are or are not qualified

to do but also about the sorts of stress they experience around a role identity which is either not recognised, is criticised, or is unclear to the volunteers and their clients[21]. This emerged as a major concern as volunteers perceived they were not accepted, trusted or appreciated for the important work they do[15, 22-26]. The lack of resources for the volunteers appeared to compound this issue as the clients inferred in some cases that their role and skills were judged in relation to equipment availability[16, 25-28].

The availability of time to contribute to volunteering is a key issue for people with families. Contemporary society is busy; people are caught up in taking care of their own issues and there is a decreased sense of community participation. Possible future cohorts (particularly women) considering volunteering are also balancing work and family role[14,29]. Volunteer work is undergoing a transformation from being an informal activity that was traditionally associated with middle aged women, to an age of insurance, liability, orientation, training and formal job description. This has been referred to as the professionalisation of the volunteer role[30]. These processes have obviously been activated for the protection and support of volunteers and the community; however, they could potentially act conversely unless diversity within volunteer work is openly encouraged[30]. However, when the volunteer feels their role is not respected or supported by their family or the community, and they experience distress because of high activity loads, they are more likely to leave the position.

Community health volunteers play a vital role in complementing the paid workforce in Taiwan, especially community nurses. Community nurses need to ensure volunteers are well prepared to undertake the roles assigned to them, ensure they receive appropriate training, and support the volunteers to continue to perform the

important role. The identification of the burden experienced by the volunteers can help community nurses to work with volunteers to identify strategies to reduce the burden experienced and as a result, reduce the attrition of volunteers form the role.

Conclusion

The participants in this study identified key issues that cause burden for community health volunteers. In order to enhance retention rates for CHVs in the future, these issues must be addressed and be an important concern for Public Health policy makers, administrators and community nurses in Taiwan in the future.

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Table 1: The characteristics of participants in focus groups

Character of district	Character of volunteers/nurses	Focus group	No.	District	Base of CHPDC
Sub-urban	Novice volunteer	A	7	Guang-Ing	Public Health Centre base
Sub-urban	Experienced volunteer	B	7	Guang-Ing	
Sub-urban	Cadre or leader volunteer	C	6	Guang-Ing	
urban	Novice volunteer	D	3	Da-Xi	Community Development Association base
urban	Experienced volunteer	E	5	Da-Xi	
urban	Cadre or leader volunteer	F	4	Da-Xi	
urban	mixed	G	8	Zhong-Li	Hospital base
	Total		40		

Table 2: The demographic characteristics of the focus group participants n=44

Characteristics	no	%
Gender		
Male	5	11.4
Female	39	88.6
Age		
<40	4	9.1
40-49	10	22.7
50-59	18	40.9
>59	15	27.3
Means(±SD)	52.68(±9.72)	
Highest level of education		
Elementary school	10	22.7
Junior high school	9	20.5
Senior high school	17	38.6
Above college	8	18.2
Religion		
none	4	9.1
Buddhist	30	68.2
Taoist	10	22.7
Christine	0	0
Occupation		
Employed	10	22.7
Unemployed	34	77.3
Marital status		
Unmarried/single	4	9.1
Married/cohabited	35	79.5
Divorced/Separated	1	2.3
Widow/Widower	4	9.1
Current condition of health compared to people of similar age		
very well	9	20.5
well	25	56.8
Not so good	10	22.7
Current economic condition		
Completely sufficient	1	2.3
Sufficient	2	4.5
Enough	41	93.2
Who lives with you currently?		
I live alone	1	2.3
I live with my spouse	8	18.2
I live with my offspring or relatives	26	59.1
others	9	20.5
How many years have you lived in this community?		
Means(±SD)	25.76(±16.89)	
Time spent as health promotion volunteer		
Means(±SD)	4.5(±2.75)	
Average volunteering service hours per week		
Means(±SD)	8.9(±8.13)	
Average number of people serviced per week		
Means(±SD)	52.6(±35.5)	
Are there other kinds of volunteering services you undertake?		
yes	36	81.8
no	8	18.2

4.4 Initial draft questionnaire

The focus group data and literature review was used to develop the initial BCHV tool that is included below as Table 4.1.

TABLE 4.1: THE FIRST DRAFT QUESTIONNAIRE

Part 2: The burden of work as a community health volunteer.

1. I feel the low participation by the community residents in planned healthcare activities impacts on my role.
2. I feel I lack support from members of the community residents in carrying out my role.
3. I experience difficulty arranging my time availability with that of the community residents.
4. Misunderstanding by the community residents about the health service available affects my role.
5. Criticism by the community residents towards the health service impacts on my role.
6. I feel that mistrust by the community residents toward health service affects my role.
7. Refusal of the community residents to accept the available health service impacts on my role.
8. I feel the community residents' misunderstanding of my role impacts on my effectiveness..
9. I feel that community residents' irrational requests of the health service impact on my role
.
10. I feel the presence of fraudulent groups in Taiwan makes my role as a health care volunteer more difficult.
11. I feel my role is affected by the community residents who choose not to follow recommended health care advice.
12. I feel that I have too many community activities to conduct to be effective.
13. I find it tiresome to conduct the same tasks continually.
14. I feel the courses provided for volunteers did not adequately prepare me for the health problems I manage.
15. I feel overlapping of topics in the training courses impacted on my educational preparation for the role.
16. I experienced difficulty understanding the intensive training courses offered.
17. I find it difficult to translate the professional training course contents into simple language.
18. I find difficult communication among some of the community residents, such as migrant residents, makes my role harder.

19. An adaptation course would help me to conduct my role.

20. I feel my weekly schedule is unreasonable. (I experience difficulty arranging my duty routine.)

21. I feel lack of communication and/or interaction with other volunteers makes my role more difficult.

22. I feel the large number of older volunteers impact on my role.

23. I feel the lack of volunteers makes my role more difficult.

24. I feel the benefits for volunteers are adequate.

25. I feel the stress of being a captain of a volunteer team impacts on me.

26. I am unclear about the expectations of my role.

27. I feel lack of support by my spouse impacts on my ability to conduct my role as a volunteer.

28. I feel the lack support of my family makes my role more difficult.

29. I feel the lack of support from community leaders' impacts on my role.

30. I feel the uncooperative attitude among the community leaders' impacts on my role.

31. I feel the lack of guidance by the community leaders' impacts on my role.

32. I feel the difficulty associated with completing the required paper work impacts on my role.

33. I feel the shortage of funds impacts on my ability to adequately carry out my role.

34. I feel my role is affected by missing or broken equipment.

35. I feel the frequent changes of supervisor of the health government impacts on my role.

36. I feel the frequent change of supervising strategies of the health government impacts on my role.

37. I feel it is difficult to arrange health schedules during holidays.

38. I feel the associated expenses of being a volunteer, such as transport fee, fuel fee, etc, impact on my role.

39. I feel the difficulty associated with transport to certain centres impacts on my role.

40. I feel that the dangers associated with the health services and home care impact on my role.

41. I feel the loss of motivation impacts on my role.
42. I need time to adjust my role and to cope with my frustration.
43. I feel physically exhausted due to my volunteer role.
44. Overall, I feel the burden associated with the volunteer's role is heavy.

4.5 Summary of this chapter

The presence of fraudulent groups in Taiwan is also seen as a contributing factor to the burden for volunteers. This is because 'scammers' use the same processes as health promotion service workers, such as door-to-door visits and telephone contacts. The residents and the elderly are usually afraid of these intrusions and consequently may reject the approaches of the volunteers concerning their health condition. This is a huge issue and a burden for the volunteers.

This chapter provided a manuscript written to depict the analysis of focus group data that was part of initial item generation related to the burden experienced by community health promotion volunteers in Taiwan. This phase of this study was also supported by the previous work experience of the researcher and a critical review of the literature. The first draft of the BCHV questionnaire was presented in Table 4-1 as a result of analysing qualitative study and literature review. The next Chapter provides an overview of the psychometric testing of the BCHV instrument.

Chapter 5. Development and psychometric testing of the Burden on Community Health Volunteers (BCHVs) instrument

"A scale developed to measure a latent variable is intended to estimate its actual magnitude at the time and the place of measure for each person measured. This unobservable 'actual magnitude' is the true score." (DeVellis, 2003, p. 15)

5.1 Introduction

This chapter outlines the process undertaken to develop the 'Burden on Community Health Volunteers' instrument using factor analysis and the testing for reliability and validity. Using volunteers for health promotion activities in the community has been performed for nearly a decade in Taiwan. So far, the majority of research conducted around the issues for these volunteers has focused on personality traits, work satisfaction, work self- efficiency of volunteering, and the degree of community involvement (Cheng, 2007; Chuang, 2001; H. C. Huang, 2004; Lan, 2006; M. C. Lin, et al., 2007; C. H. Liu, 2002; Nan, 2002). The chapter includes a manuscript developed and submitted to outline the process of psychometric testing undertaken in order to ensure the BCHV instrument is useful and rigorous.

5.2 Background

For this study, adjectival scales have been used to assess the stated option, attitude, belief or other construct of the question. Haag (1997) mentioned about adjectival scale: "as lexemes, adjectives are detected both heuristically and theoretically by their ability

to be graded." Accordingly, adjectival scale implies the descriptors by using a more continuous judgement, rather than labelling plainly the end-points. The items in an adjectival scales response format use several "points" along a continuum to distinguish the various gradability, the comparative and superlative degrees or levels of response being measured. Generally, a client who scores the adjectival scales uses the rules to assign the answer into one of the existing categories. Adjectival scales are used very often in rating scales, such as those used for customer or client evaluations (unsatisfactory/satisfactory) or self-reported health (excellent/very good/good/fair/ poor).

The majority of the health promotion development volunteers conduct their activities regularly with other volunteers on duty schedule in the community. In order to assess the degree of burdens of volunteers, I utilised adjectival scales as a continuum (Steven H. Zarit, Orr, & Zarit, 1985), a principled account of the full range of possible outcomes under consideration that can be constructed within a model in which variations are formalized as intervals on a scale and adjectival polarity is characterized in terms of two structurally distinct and complementary sorts of 'positive' and 'negative' degrees, such as never (1), seldom (2), sometimes (3), often (4) and nearly always (5) (DeVellis, 2003; Haag, 1997; Kenndy, 2001; Rotstein & Winter, 2004; Streiner & Norman, 2008).

The BCHVs was developed and validated within the context of the focus groups. In addition to burdens, general information about the participants of the focus groups were collected, including widely used demographic questions relating the factors that are associated with variations in personal condition, such as gender, age, education level

obtained, religion, main language speaking, employment status, marital status, current health status, economic condition, the number of years of residence in the suburb and type of dwelling. Other demographics included related to volunteering experience, such as the number of year as health promotion volunteer, the average service hours per week, the average number of people service per week, the position of volunteering job, the recruited method to be health promotion volunteering and having been being other kinds of volunteering.

The focus groups held with the participants' generated rich data and led to the development of the first version of the Work Burdens Scale, which was initially written in Chinese (version 1; Appendix E). This version was then translated into English. Once the Chinese version of the scale was developed it was pre-tested with a pilot sample to assess the content adequacy of the items. The Chinese scale was then submitted to evaluation by a range of volunteer experts, including an independent group of volunteers, a group of community health promotion nursing clinicians, and a senior Community Health Nurse expert who were purposively selected so that pretesting occurred with Chinese-speaking participants. This process included the establishment of the importance of each of the 44 statements by assessing them on a five-point scale that ranged from "very important" to "not important at all". Factor analysis using principle component analysis was applied to identify underlying dimensions of the scale and to reduce items statistically. Communality between the 20 items was reasonably good (Pearson's correlation coefficient ranging between 0.05 and 0.64); that items loaded strongly to the 5 identified factors apart from two items, which may prove to be redundant, and that only one item cross-loaded to two factors. Hence the data can overall be considered "strong" based on Costello and Osborne (2005).

5.3 Declaration and Contribution Table for Thesis Chapter Five

The following paper presents an overview of the development and testing of the Work Burden Scale of the Community Health Promotion Development Volunteers (BCHPDV) instrument.

Publication #4: Gau, M., Buettner, P. Usher, K., & Stewart, L. (Under review) Development and validation of an instrument to measure the burden experienced by community health volunteers in Taiwan. *Journal of Clinical Nursing*

Thesis	**Article**	**Publication Details**	**Author Contributions**	**Impact Factors**
Chapter 5	Development and validation of an instrument to measure the burden experienced by community health volunteers in Taiwan	*Journal of Clinical Nursing*	Gau (40%) Buettner (30%) Usher (20%) Stewart (10%)	1.228

Declaration by co-authors

The undersigned hereby certify that:

- The above declaration correctly reflects the extent of the candidate's contribution to the work and the extent of contribution of each co-author;

- They meet the criteria for authorship in that they have participated in the conception, execution, or interpretation, of at least part of the publication in their field of expertise;

- They take public responsibility for their part of the publication, except for the responsible author who accepts overall responsibility for the publication;

- There are no other authors of the publication according to these criteria;

- Potential conflicts of interest have been disclosed to (a) grant bodies, (b) the editor or publisher of journals or other publications, and (c) the head of the responsible academic unit; and

- The original data are stored at the following location and will be held for at least five years from the date indicated below:

Location	School of Nursing, Midwifery & Nutrition, Townsville Campus, James Cook University.

Candidate signature		Date 30/11/11
Signature 1		Date 30/11/2011
Signature 2		Date 30.11.11
Signature 3		Date 30.11.11

JCN Journal of Clinical Nursing

Development and validation of an instrument to measure the burden experienced by community health volunteers in Taiwan

Journal:	*Journal of Clinical Nursing*
Manuscript ID:	Draft
Manuscript Type:	Original Article
Keywords:	Burnout, Community, Health Promotion, Nursing, Scale Development, Taiwan

Abstract

Aims and Objectives: The aim of this study was to develop and validate a scale to measure the burden experienced by community health volunteers in Taiwan.

Background: Research demonstrates the burden experienced by informal carers is substantial. There is no available information about the burden placed on community health volunteers in Taiwan or a similar country, nor is there a scale developed for the purpose of measuring the burden experienced.

Methods: A sequential mixed method exploratory design was applied to develop and validate a new scale. Exploratory principle component factor analysis was applied to investigate the internal structure of the new scale.

Results: The initial item pool derived from literature review and experts resulted in 44 items linked to volunteer burden. The final scale includes 20 items with a content validity index of 0.86 and Cronbach's alpha for test (0.82) and re-test (0.77). Principle component analysis identified five underlying factors: Factor 1 items are related to personal and family matters; factor 2 items are related to administrative issues; factor 3 items concern the community support; factor 4 items are related to organisational matters; and factor 5 items concern issues of adequate health promotion delivery.

Conclusion: The 20 item instrument designed to measure the burden on community health volunteers in Taiwan showed good internal consistency, content validity, and construct validity. The findings infer that the scale may be an effective measure of the burden experienced by

health promotion volunteers. Further testing of this scale within Taiwan and other Asian countries that make use of community health volunteers is required to confirm the results.

Relevance to clinical practice: As volunteers play an important role in supporting the work of community health nurses the BCHV scale provides a means for nurses to assess volunteers' level of burden and develop interventions as required.

Key words: burden; community health; community health volunteers; health promotion; volunteers.

Introduction

Volunteers are an important addition to health service delivery in many countries of the world. Especially important in countries where there are high densities of people needing health services, these volunteers provide a vitally important service (Bureau of Health Promotion, 2006, Ministry of the Interior [MOI], 2008). The work of volunteers have increased the service hours and range of services available at community health centres in Taiwan and have played a significant role in supplementing the role of nurses since 1999 (Bureau of Health Promotion 2006a, Guimei 2001, MOI 2011, Nemcek & Sabatier 2003). Community volunteers carry out the following functions: connecting with households; visiting families; recording and reporting; providing blood pressure measurement services; in-home care; and conducting programs to stop smoking and chewing betel nuts (Bureau of Health Promotion 2006a, b).

Without these volunteers, many community health activities in Taiwan would cease to be available. However, it is not easy to retain community health volunteers even after they have been trained for the role (Hung 2004, Li *et al.* 2007). It is possible that community health volunteers may experience burden related to their role that negatively impacts on their activities, leads to frustration, and increases the likelihood of attrition from the position (Hung 2004, Sung *et al.* 2006); similar to the burden experienced by informal caregivers. Research has demonstrated that the burden on informal carers, such as carers of the elderly and the mentally ill, is immense. The burden for these carers includes work load about

physical labour, emotional and time loading; deficiency of information; insufficient emotional support from family, volunteers, community health nurses, residents; lack of instrumental support; deficits in communication skills; lack of cooperation skills and lack of confidence (Akintola 2008, Crook *et al.* 2006, Daniels *et al.* 2005, Ferrari 2004, Lamb 2006, Merrill 2006, Shaibu 2006). A recent study on volunteers was undertaken in Japan to describe and validate a tool designed to measure the burden on health promotion volunteers in Japan, but due to insufficient information published, it was difficult to understand how the scale was developed and whether it was used to measure the exact type of volunteer activity that is the aim of this study (Murayama *et al.* 2006).

Other than the study by Murayama et al. (2006), there is no available information that addresses the burden placed on community health volunteers in the carrying out of their role in Taiwan or a similar country, or a scale developed for the purpose of measuring the burden experienced by this cohort of volunteers. If a tool was available to measure the burden experienced by this group of volunteers it may identify role burnout and instigate the development of strategies to help overcome the issue and prevent its reoccurrence in future cohorts of volunteers. In addition, this information could be used to alert the community health nurses and the administrators of community health promotion centres to assist with the development and delivery of programs to assist in preventing the potential loss of volunteers in the future.

Therefore the aims of this study were to: (a) develop a standardised instrument to measure the burden on community health volunteers (the

Burden on Community Health Volunteers (BCHVs) scale; and, (b) preliminarily validate the BCHV scale with a sample of community health volunteers in Taiwan.

Methods

A sequential exploratory mixed methods design for instrument development as outlined in Figure 1 was applied (Creswell & Plano Clark 2007). Ethics approval for the study was granted by the Human Research Ethics Committee of James Cook University and by the Chang Gung Medical Foundation in Taiwan. All participants were required to give written consent. The data collection phase of the study was conducted in Taiwan.

Item generation

Items were initially generated by reviewing the literature using the terms: work burden, work challenge, health promotion volunteer, lay health workers, community health volunteer, community health, healthy community, and healthy city. The items identified from the literature were used to develop questions for the focus groups and were added to the item pool arising from the focus groups. A total of seven focus groups were conducted with 40 volunteers with varying levels of experience and with four public health nurse clinicians. See Table 1 for a description of demographic characteristics of participants. The literature review and focus groups resulted in an initial list of 44 items of perceived burden which were broadly related to the response of community residents to volunteers, issues of administrative and organizational support, issues of family support, and concerns about personal capabilities.

Item reduction

An expert review panel including another independent group of volunteers (n=17), a group of community health promotion nurse clinicians (n=5), and one senior community health nurse expert was purposively recruited in April 2010 to facilitate item reduction (Table 1). The panel was asked to determine the importance of each of the 44 items by assessing them on a five-point scale which ranged from "very important" to "not important at all". In addition, factor analysis using principle component analysis was applied to identify the dimensions of the 44 item scale and to help reduce the number of items statistically (Onwuegbuzie & Johnson 2006, Streiner & Norman 2008).

Content validity

A convenience sample of 47 volunteers who later also participated in the pilot testing (Table 1) and nine experts on volunteers from a local community reviewed the second version questionnaire. The experts included five academic associated professors and lecturers, two public health clinical experts and two directors/coordinators of the Health Management Section of the Public Health Bureau in terms of being familiar with the activities of the community health promotion development. Participants were asked if any of the 20 items were ambiguous, redundant, less relevant, or lacked face validity. All participants' comments were grouped by item and were asked the following questions after completion of the instruments to establish the content validity: 1. What was it like to fill out the questionnaire? 2. Were there any items you had difficulty understanding or answering? 3. Were there any items that offended you or to which you did not want to respond? 4. Do the items cover the range

of burdens that come with health promotion activity volunteering in the community that you would identify from your experiences? Revisions to the instrument were made if more than two participants raised concerns about an item (DeVellis 2003, Streiner & Norman 2008). The content validity index (CVI) of the resulting instrument was 0.86 (Polit & Beck 2006, Polit *et al.* 2007).

Pilot testing

After the number of items was reduced the resulting scale was piloted with 47 community health volunteers (Table 1). The focus of this phase of the study was the evaluation of item clarity and formatting, and overall usefulness of the tool. The final resulting tool was called Burden on Community Health Volunteers (BCHV).

Test-retest reliability and validity

The BCHV was investigated for test-retest reliability. Another 45 volunteers (Table 1) were invited to participate. The volunteers undertook the initial survey at their work place and completed the survey two weeks later at the same location for a second time. Two weeks was chosen as a suitable time interval between survey distributions as it was deemed unlikely that respondents would greatly altered their perception of burden within this time frame (DeVellis 2003). Internal consistency was investigated using Cronbach's alpha. Cronbach's alpha should be greater than 0.7 to assume acceptable internal consistency (Kline 2000). Test-retest reliability was assessed (1) for each item by cross-tabulation to check individual item agreement, (2) by graphical analysis suggested by Bland and Altman (1986), and (3) by the concordance correlation coefficient

(Lin 1989).

Structure of scale

The internal structure of the BCHV was assessed using a stratified random sample of 435 health promotion volunteers from 14 community, 11 hospital, and two public health centre based Community Health Promotion Development Centres from northern Taiwan (Table 1). Exploratory principal component factor analysis followed by Varimax rotation with Kaiser Normalization was conducted. The subject to item ratio in this study was 21.8 and met the requirement of five participants per item as suggested by Stevens (2002). The Kaiser rule (Kaiser 1960) as well as the Scree plots (Catell 1966) were used to decide on the number of factors.

Language, Translation and Transcription

The tool was originally developed in Chinese but the final version was also translated into English. The translator was qualified in community health nursing and a bilingual expert who completed a PhD program in an English speaking country (Hwang *et al.* 1996, Maneesriwongul & Dixon 2004, Wang *et al.* 2006, Yu *et al.* 2004). The language used during the data collection procedure, both for the focus groups and the tool development, was Mandarin Chinese, the official language of Taiwan.

Data analysis

Data were managed and analysed using the Statistical Package for the Social Sciences (SPSS Version 18.0; PASW; IBM SPSS Inc; Chicago, Illinois). All comparisons used a level of significance of 0.05 (2-sided test).

Results

The above described process (Figure 1) resulted in a 20 item instrument with responses graded on a 5-point scale indicating the level of burden experienced from never (1) = never occurred at any time, seldom (2) = occurred once a month, sometimes (3) = occurred once a week, often (4) = occurred twice a week to nearly always or always (5) = occurred almost every time. The tool was called the Burden on Community Health Volunteers (BCHV) scale (Table 2). Adding up the 20 items results in a scale ranging between 20 (no burden) to 100 (all burdens experienced almost all the time).

Item analysis and test-retest reliability (n=45)

Cronbach's alphas for test (0.82) and re-test (0.77) suggested good internal consistency. When the BCHV scale was tested for internal consistency removing one item at a time, Cronbach's alpha remained 0.75 or greater, respectively. Further the test and re-test reliability of each single item was assessed by cross-tabulation. Overall agreement for the single item ranged between 0.289 and 0.667.

The scatter plot of test and retest BCHV results indicated that respondents who had high values (multiple burdens) in the first round tended to have fewer complaints second time around. A plot of the average test and retest values against the differences (Bland & Altman, 1986) suggested that distances from the zero line got slightly larger as the average values increased (Figure 2). Pearson's correlation coefficient between averages and differences of the test and re-test values was r=0.28 (p=0.066; n=45). The concordance correlation coefficient (Lin, 1989) was calculated to 0.63 (95%-confidence interval = [0.44, 0.77]) indicating a moderate to good reproducibility.

Internal structure of BCHV scale

Explorative factor analysis using a sample of 435 volunteers revealed that the BCHV scale had five underlying factors (Table 3). Factor 1 consisted of seven items and was related to personal and family matters; factor 2 consisted of four items relating to administrative issues; factor 3 consisted of four items which were concerning the community; factor 4 consisted of three items relating to organisational matters; and factor 5 consisted of two items concerning issues of adequate health promotion delivery.

Discussion

The 20-item BCHV scale was designed to measure the burden experienced by community health promotion volunteers in Taiwan. The BCHV scale showed good internal consistency, content validity, and construct validity. The internal consistency of the instrument satisfied the minimum recommended level of reliability for Cronbach's coefficient alpha. The scale was developed through an extensive literature review and a

combination of qualitative and quantitative methods using community health promotion volunteers and experts from Taiwan. The findings infer that the scale could be an effective measure of the burden experienced by volunteers in Taiwan and elsewhere.

The results of the principle component analysis indicate that five factors underlie the BCHV scale. Factor 1 is related to the lack of support from family members, personal issues relating to the volunteering role and issues related to the lack of clarity of the volunteering role. Items that loaded high in factor 2 focused around the high workload and the perceived inadequacy or non-existent benefits coming with the volunteering role. Factor 3 items related to the lack of community support. Items which loaded high with factor 4 were concerned about organisational issues such as broken equipment or changes in supervising strategies. Factor 5 items are concerned with a lack of preparation for the volunteering role. All items were loaded 0.4 or higher, but items 19 and 20 within the first factor. These two items may prove to be redundant in future studies. Item 4 "I feel the presence of fraudulent groups in Taiwan makes my role as a health care volunteer more difficult" loaded almost equally high in factors 2 and 3, although the effect of fraudulent elements in Taiwan some of which pretend being volunteer workers in order to gain access to houses seemed better placed in factor 3 and the issues surrounding lack of community support. These factors are similar to those identified by Murayama et al. (2006) in their study of community health promotion volunteer burden in Japan.

The results of the test-retest reliability analysis highlighted that the higher the perceived burden the larger the differences between test and re-test.

This result implies that participants who assessed their burden as high initially judged it less severe the second time around indicating a moderate to good reliability, indicating a regression to the mean. Indeed the overall agreements for the single items were not high ranging between 0.289 and 0.667. The reasons for the low agreement may include: (a) difficulty with remembering, judging and not being as careful using the same instrument a second time; or, (b) the words used to assess the statements (that is "never", "seldom", "sometimes", "often", "always") may have not been clearly defined. As others previously pointed out, the words used to describe a statement might be more a matter of "feeling" rather than of clear rules (Polit & Beck 2010, Streiner & Norman 2008). Hence a participant who said "sometimes" at the first survey might easily say "seldom" or "often" the second time. One could argue that reliability would be higher if categories were collapsed, however this would imply a loss of sensitivity of the tool. It is also possible that extreme ratings ("never" or "always") in the first round were moderated at the second round as participants reflected and re-assessed their initial answers.

The limitations of the study are evident. The study is biased by the use of convenience samples during the developmental stages of the BCHV scale. On the other hand, the initial phases of the study required an information rich sample in order to create a meaningful pool of items. The sample size for the exploratory factor analysis was more than sufficient (Stevens, 2002), however, could have been larger in the phase of item reduction (n=23). Further testing of this scale with other samples in Taiwan and other Asian countries that employ community health volunteers is therefore recommended.

Conclusion

Although most community health volunteers enjoy the role, the attrition rate of volunteers often results in difficulties with continuing community projects and adds to the burden on community nurses. How best to retain trained volunteers in community work is thus an identified area of need. This study sought to address the gap in the research on the burden experienced by community health volunteers in Taiwan through the development of a validated scale to measure the burden. Preliminary testing of the BCHV scale showed reasonable reliability and validity. The BCHV instrument is suggested as a tool for assessing the burden on community health volunteers in Taiwan in future studies. The BCHV tool will hopefully help to identify burden so that realistic strategies can be implemented to reduce the burden on volunteers in the future.

Relevance to clinical practice

The availability of a burden assessment tool for community health volunteers will facilitate community health nurses' assessment of the burden experienced by community health volunteers so that strategies to overcome the burden can be implemented as needed. Ultimately, the outcome of such a measure will be improved retention of community health volunteers as burden will be identified early and the volunteer helped to overcome the problem.

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Figure 1: Sequential mixed method exploratory design: Instrument development model (Creswell & Plano Clark 2007, p76)

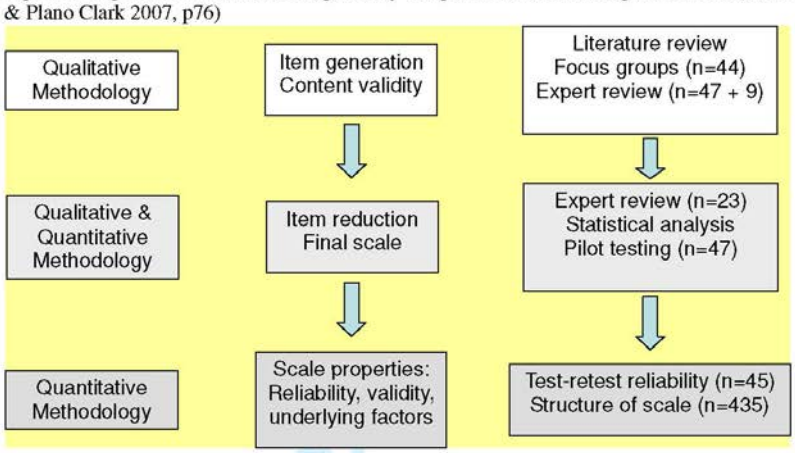

Figure 2: The scatter plot for the concordance of the test and retest study showing the difference of test and re-test measurements against their average values (Bland & Altman, 1986). The three dotted lines represent the mean value of the differences (± 2 SD). The red line depicts the regression line between differences and averages.

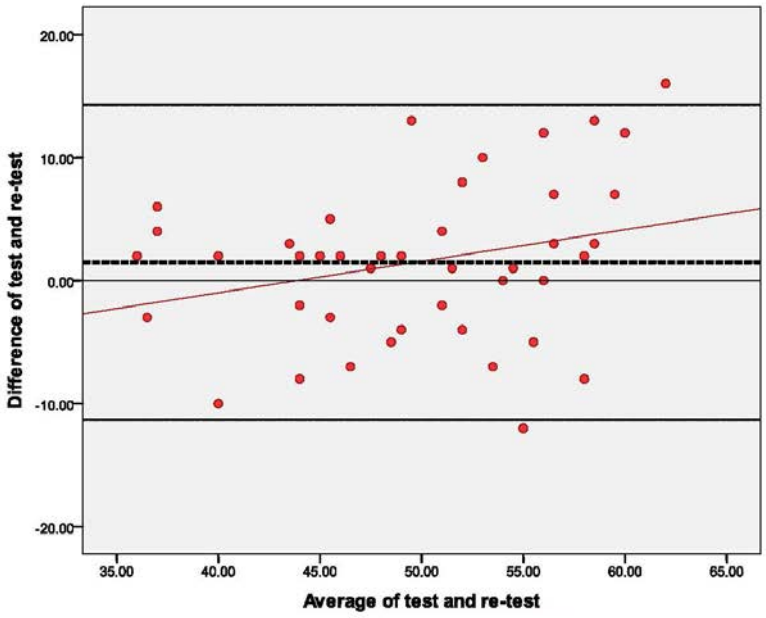

Table 1: The demographic characteristics of participants of the different studies conducted.

Characteristic	Item generation n=44	Item reduction n=23	Content validity & Pilot testing n=47	Test-retest n=45	Internal structure n=435
% Female	39 (88.6%)	19 (82.6%)	44 (93.6%)	42 (93.3%)	366 (84.3%)
Mean age (SD)* [years]	52.7 (± 9.7)	49.9 (± 9.6)	52.7 (±12.6)	52.8 (±12.8)	59.1 (±10.8)
% With senior high school education or above	25 (56.8%)	17 (56.4%)	29 (61.7%)	27 (60.0%)	169 (39.8%)
% Married or cohabitated	35 (79.5%)	19 (82.6%)	33 (70.2%)	32 (71.1%)	341 (81.0%)
% Who said that they felt "well" health wise compared to people of similar age	25 (56.8%)	/**	21 (44.7%)	21 (46.7%)	195 (45.6%)
Mean years (SD) lived in the community	25.8 (±16.9)	20.17 (± 9.5)	19.17 (±10.5)	18.8 (±10.3)	29.1 (±17.8)
Mean years (SD) spent working as a health promotion volunteer	4.5 (± 2.8)	5.30 (± 2.2)	4.9 (± 3.1)	4.92 (± 3.2)	4.4 (±3.2)
Mean volunteering service hours per week (SD)	8.9 (± 8.1)	9.5 (± 7.2)	7.1 (± 6.2)	7.2 (± 6.3)	6.8 (±4.7)
Mean number of people serviced per week (SD)	52.6 (± 35.5)	/**	41.2 (±19.8)	41.0 (±20.0)	45.0 (±38.0)
% Who were committed to other kinds of volunteering	36 (81.8%)	15 (65.2%)	33 (71.7%)	34 (72.3%)	373 (85.7%)

*SD = standard deviation; ** Information was not available for this group of participants.

Table 2: Final version of questionnaire: The Burden on Community Health Volunteers (BCHVs) scale.

ITEM	Never	Seldom	Some-times	Often	Nearly always or always
1. I feel the low participation by the community residents in planned healthcare activities impacts on my role.	□	□	□	□	□
2. I feel I lack support from members of the community residents in carrying out my role.	□	□	□	□	□
3. Misunderstanding by the community residents about the health service availability affects my role.	□	□	□	□	□
4. I feel the presence of fraudulent groups in Taiwan makes my role as a health care volunteer more difficult.	□	□	□	□	□
5. I feel the adaptation courses provided for volunteers did not adequately help me to conduct my role.	□	□	□	□	□
6. I feel the lack of volunteers makes my role more difficult.	□	□	□	□	□
7. I feel the benefits for volunteers are inadequate.	□	□	□	□	□
8. I feel my role is affected by missing or broken equipment.	□	□	□	□	□
9. I feel the difficulty associated with completing the required paper work impacts on my role.	□	□	□	□	□
10. I feel the frequent change of supervising strategies of the health government impacts on my role.	□	□	□	□	□
11. I feel that I have too many community activities to conduct to be effective.	□	□	□	□	□
12. I feel the courses provided for volunteers did not adequately prepare me for the health problems I manage.	□	□	□	□	□
13. I find it difficult to communicate with some of the community residents, such as immigrant residents, and this makes my role harder.	□	□	□	□	□
14. I am unclear about the expectations of my role.	□	□	□	□	□
15. I feel lack of communication and/or interaction with other volunteers makes my role more difficult.	□	□	□	□	□
16. I feel that the dangers associated with the health services and home care impact on my role.	□	□	□	□	□
17. I feel physically exhausted due to my volunteer role.	□	□	□	□	□
18. I feel the lack support of my family makes my role more difficult.	□	□	□	□	□
19. I feel it is difficult to arrange health schedules during holidays.	□	□	□	□	□
20. Overall, I feel the burdens associated with the volunteer's role are heavy.	□	□	□	□	□

Possible answers and scores: never (1) = never occurred at any time, seldom (2) = occurred once a month, sometimes (3) = occurred once a week, often (4) = occurred twice a week and nearly always or always (5) = occurred almost every time.

Table 3: Result of exploratory factor analysis showing internal structure of BCHV scale (n=435).

Item	Description	Component Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
18	I feel the lack support of my family makes my role more difficult.	0.78				
17	I feel physically exhausted due to my volunteer role.	0.76				
16	I feel that the dangers associated with the health services and home care impact on my role.	0.67				
14	I am unclear about the expectations of my role.	0.64				
15	I feel lack of communication and/or interaction with other volunteers makes my role more difficult.	0.58				
20	Overall, I feel the burden associated with the volunteer's role is heavy.	0.38				
19	I feel it is difficult to arrange health schedules during holidays.	0.38				
6	I feel the lack of volunteers makes my role more difficult.		0.73			
11	I feel that I have too many community activities to conduct to be effective.		0.70			
9	I feel the difficulty associated with completing the required paper work impacts on my role.		0.68			
7	The benefits for volunteers are inadequate		0.61			
1	I feel the low participation by the community residents in planned healthcare activities impacts on my role.			0.79		
2	I feel I lack support from members of the community residents in carrying out my role			0.75		
3	Misunderstanding by the community residents about the health service availability affects my role.			0.62		
4	I feel the presence of fraudulent groups in Taiwan makes my role as a health care volunteer more difficult.			0.46		
8	I feel my role is affected by missing or broken equipment.				0.85	
10	I feel the frequent change of supervising strategies of the health government impacts on my role.				0.69	
5	I feel the adaptation courses provided for volunteers did not adequately help me to conduct my role.				0.55	
13	I find it difficult to communicate among some of the community residents, such as immigrant residents, and this makes my role harder.					0.78
12	I feel the courses provided for volunteers did not adequately prepare me for the health problems I manage.					0.77
	Eigenvalue	6.5	1.8	1.4	1.1	1.05
	Variance explained	32.4%	8.9%	7.2%	5.4%	5.2%

5.4 Summary of this chapter

This chapter addressed the psychometric testing of the newly developed BCHV scale. The psychometric testing indicated that the scale had good reliability and content validity overall. Communality between the 20 items was reasonably good (Pearson's correlation coefficient ranging between 0.05 and 0.64); that items loaded strongly to the 5 identified factors apart from two items which may prove to be redundant and that only one item cross-loaded to two factors. Hence the data can overall be considered "strong" based on Costello & Osborne (2005).

As outlined in the manuscript, the psychometric testing of the instrument indicates that the instrument is an effective tool for the measurement of burden experienced by community health promotion volunteers in Taiwan. The next Chapter provides an overview of the results of a survey of community health volunteers in Taiwan using the developed and tested BCHV instrument.

Chapter 6. Results of the Survey of Volunteers in Taiwan Using the Burden on Community Health Volunteers (BCHVs) Instrument

6.1 Introduction

This chapter discusses the administration of the BCHV instrument across different members of the volunteer workgroups in a northern area of Taiwan. A cross-sectional study was employed for this phase of the study with the aim of providing a picture of the burden experienced by a sample of volunteers at a particular point in time, and to identify if any differences existed between the chiefs, the leaders, cadre members and fundamental members. The Chapter includes a manuscript submitted for publication that covers the contents of this Chapter.

6.2 Characteristics of the Study Sites

The aim of this step of the research (step 4 of phase 2) was to recruit a large sample of volunteers to complete the questionnaire in order to assess the current level of burden on a cohort of health promotion volunteers in Taiwan. This step of the project used stratified random sampling. The survey tool was sent out via Community Health Promotion Development Centres (CHPDC) situated in the north of Taiwan between June and July 2010. The sampling was stratified by the type of CHPDC, community, hospital, and Public Health Centre based in order to guarantee representativeness for the main kinds of volunteering jobs. According to the Central Weather Bureau, the Executive Yuan, Taipei City, New Taipei City (former Taipei County before 25/12/2010), Keelung City, Taoyuan Country, Hsinchu County and Miaoli County

belong to the Northern Region of Taiwan (please see the Figure 4-1and 4-2). The sample sites New Taipei City, Taoyuan Country and Hsinchu County were chosen because of their adaptability, convenience, economies and municipality types (Polit & Hungler, 1999; Tashakkori & Teddlie, 2003). The relevant populations, general geographical situations and health promotion policies of these three Authorities were described as below.

The first city selected is New Taipei City. The administrative district of New Taipei City covers the northern tip of Taiwan and is the most populated municipality in Taiwan. New Taipei City surrounds Taipei City and is adjacent to Keelung City (northeast), Yilan County (southeast) and Taoyuan County (southwest). The whole of New Taipei City covers an area of 2,052 km^2 and the population density is 1,874 / km^2. As of 30/June/2010, the population of New Taipei City was estimated to 3,880,000 and this makes New Taipei City the largest municipality in Taiwan in terms of population. More than 80% of these residents reside in the 10 city-controlled districts (totally 29 districts), which occupy approximately 1/6 of New Taipei City's total area. In addition, there are approximately 5,000 foreigners residing in New Taipei City at the moment, making New Taipei City the third largest municipality in Taiwan in terms of foreign resident population (N. T. C. Bureau of Public Health, Taiwan, 2011).

In order to provide the residents with high quality health promotion, the Bureau of Public Health of the New Taipei City Government promotes a number of health promotion strategies. For instance: (a) To encourage the populace to take the initiative in promoting their own health and the sustained management of community health issues. In 2010, 29 Community Health Promotion development Centres were supervised

to participate in New Taipei City Healthy Life Programme. (b) To supervise the Community Health Promotion Development Centres and to promote the Healthy Life Projects, such as developing a special partnership mechanism. Experts and scholars in the field of community health development performance were invited to collaboratively provide the Community Health Promotion Development Units with counselling and recommendations on ways to promote the plan. (c) To improve the quality of the manpower resources and program promotion, a 12-hour basic course and a six-hour advanced course on community health promotion development were organised. (d) To assist the sustainability of the Community Health Development Centres (N. T. C. Bureau of Public Health, Taiwan, 2011).

The second county selected is Taoyuan County. As previously described (see Chapter 4.2), Taoyuan County is located in the southwest of New Taipei City and is connected to Hsinchu County in the north of Taiwan. The population was 2,002,060 at the end of 2010 and the population density was estimated to about 1,640 persons per square kilometre in Taoyuan County. The goal of the Health Department is to provide the Taoyuan County residents with a high quality health promotion system. A Community Health Development (Building) Centre has been set up in each city or township to mobilize local resources for the promotion of better community health. In 2010, 14 “Community Health Promotion Development Centre “and 50 “Vital Health Stations (Vitality Health Promotion Stations)” in 13 townships and cities in Taoyuan were established by various local community associations, hospitals or villages to offer relevant health promotion services, including blood pressure testing, health education consultation, chronic disease screening and transferring services, exercises and health facilitation, middle-aged and elderly chronic disease control, long-term care and related

care issues. Programs for the prevention and control of cancer, for the encouragement of smoke-free families and work places have also been implemented (T. C. G. Bureau of Public Health, Taiwan, 2011).

The third county selected is Hsinchu County. Hsinchu County is situated at the north-western part of Taiwan and is connected to Taoyuan County in the north, Miaoli County in the south and Yilan County in the east. The land area is 1,427.5 km^2 with 13 townships and cities. The population of Hsinchu County up to the end of February 2010, was approximately 511,000 with an average annual population increase of around 6,868 people. Hakka ethnic people dominate the county alongside Fukienese (who speak the Holo language) and Aboriginal tribal people. In the past decades, Hsinchu County has developed into a high-technology hub, becoming the home of numerous immigrants of multi-faceted ethnic races and diverse cultures. Thus, the health policy of the Bureau of Public Health is to encourage people to "create perpetual and healthy styles of living". In addition, regular and diversified physical exercise teaching is promoted and the "happy, healthy and quality citizen" is cultivated (Hsinchu County Government, 2009).

My previous work experience has involved various community health promotion development projects in cooperation with these Bureaus of Public Health. As well as ongoing links with me, those sites were chosen for the study for the reasons of their adaptability, convenience, economies and municipality types. Approval of Consent letters to conduct the study was required and was granted by all sites as shown in Appendix K.

6.3 Declaration and Contribution Table for Thesis Chapter Six

The following journal article presents the results of the survey conducted in Taiwan using the BCHVs.

Declaration by candidate

The extent of candidate contribution to the following publication is as follows.

Publication #5: Gau, M., Stewart, L. Buettner, P. & Usher, K. (Unedr review) Burden experienced by community health volunteers in Taiwan: a questionnaire survey. *International Journal of Nursing Studies.*

Thesis	**Article**	**Publication Details**	**Author Contributions**	**Impact Factors**
Chapter 6	Burden experienced by community health volunteers in Taiwan: a questionnaire survey	*International Journal of Nursing Studies*	*Gau (40%)* *Stewart (20%)* *Buettner (15%)* *Usher (25%)*	2.4

Declaration by co-authors

The undersigned hereby certify that:

- The above declaration correctly reflects the extent of the candidate's contribution to the work and the extent of contribution of each co-author;
- They meet the criteria for authorship in that they have participated in the conception, execution, or interpretation, of at least part of the publication in their field of expertise;
- They take public responsibility for their part of the publication, except for the responsible author who accepts overall responsibility for the publication;
- There are no other authors of the publication according to these criteria;
- Potential conflicts of interest have been disclosed to (a) grant bodies, (b) the editor or publisher of journals or other publications, and (c) the head of the responsible academic unit; and
- The original data are stored at the following location and will be held for at least five years from the date indicated below:

Location	School of Nursing, Midwifery & Nutrition, Townsville Campus, James Cook University.

Candidate signature		Date 30/11/2011
Signature 1		Date 30/11/2011
Signature 2		Date 30.11.11
Signature 3		Date 30.11.11

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International Journal of Nursing Studies: Author Checklist 2008 V2.1.

IJNS AUTHOR CHECKLIST ***Authors of all papers should submit this checklist together with their manuscript.***

Part 1 identifies basic requirements for the manuscript submission *(mandatory for all submissions)*

Part 2 identifies recognized guidelines for scientific reporting, which you should use to prepare your manuscript *(required for systematic reviews and original research)*

Part 3 Is a self assessment checklist that is designed to help to ensure that your research or review manuscript meets basic standards and the journal's Guide for Authors. *(optional only)*

PART 1 Basic requirements	***Author response or further detail***	**Tick**
Word count	4,600	
Was ethical approval given and by whom? (give any reference number)	Yes. James Cook University Human Research Ethics Committee (H3402) and the Institutional Review Board (IRB) of Chang Gung Medical Foundation in Taiwan	
Please state any conflicts of interest	Nil	
Please state sources of funding and the role of funders in the conduct of the research	Nil	
Please state any study registry number (e.g. ISRCTN)	Nil	
Title	The title is in the format 'Topic / question: design/type of paper' and identifies the population / care setting studied. *(e.g. The effectiveness of telephone support for adolescents with insulin dependant diabetes: controlled before and after study; the structure is optional for* discussion papers, editorials and commentaries*)*	/
Abstract	A structured abstract appropriate to the design (see *guidelines for authors).* Reports of controlled trials should follow the CONSORT format (does not apply to editorials or commentaries, Abstracts for discussion papers need not be structured)	/
Key words	Between four and six key words have been provided in alphabetical order, which accurately identify the paper's subject, purpose, method and focus. Use the Medical Subject Headings (MeSH®) thesaurus or Cumulative Index to Nursing and Allied Health (CINAHL) headings where possible (see http://www.nlm.nih.gov/mesh/meshhome.html).	/
What the paper adds	Bullet points have been included that identify existing research knowledge relating to the specific research question / topic (what is already known) and a summary of the new knowledge added by this study *(see Guide for Authors,* does not apply to editorials or commentaries)	/
References	Citations accord to the journal's format (Author, date) and reference list includes full details of all cited references in the proper format and alphabetical order (see *Guide for Authors)*	/
Other Published accounts	*All* published and in press accounts of the study from which data in this paper originate are referred to in the paper and the relationship between this and other publications from the same study is made clear (see *Guide for Authors*)	/

	The study is referred to by a distinctive name which will be used in any future publications to identify that it as the same study.	✓
	Please upload copies of all previous, current and under review publications from this study and / or give full details below	

PART 2 Standards of reporting	The editors require that manuscripts adhere to recognized reporting guidelines relevant to the research design used. These identify matters that should be addressed in your paper. Please indicate which guidelines you have referred to. These are not quality assessment frameworks and your study need not meet all the criteria implied in the reporting guideline to be worthy of publication in the IJNS. The checklists do identify essential matters that should be considered and reported upon. For example, a controlled trial may or may not be blinded but it is important that the paper identifies whether or not participants, clinicians and outcome assessors were aware of treatment assignments. You are encouraged (although not required) to submit a checklist from the appropriate reporting guideline together with your paper as a guide to the editors and reviewers of your paper. *Reporting guidelines endorsed by the IJNS are listed below:*	**Guideline referred to**	**Checklist submitted***
Observational cohort, case control and cross sectional studies	STROBE **Str**engthening the **R**eporting of **O**bservational Studies in **E**pidemiology http://www.equator-network.org/index.aspx?o=1032	✓	✓
Quasi experimental / non-randomized evaluations	TREND - Transparent Reporting of Evaluations with Non-randomized Designs http://www.equator-network.org/index.aspx?o=1032	✓	
Randomised (and quasi-randomised) controlled trial	CONSORT – Consolidated Standards of Reporting Trials http://www.equator-network.org/index.aspx?o=1032		
Study of Diagnostic accuracy / assessment scale	STARD Standards for the Reporting of Diagnostic Accuracy studies http://www.equator-network.org/index.aspx?o=1032		
Systematic Review of Controlled Trials	PRISMA - Preferred Reporting Items for Systematic Reviews and Meta-Analyses http://www.equator-network.org/index.aspx?o=1032		
Systematic Review of Observational Studies	MOOSE Meta-analysis of Observational Studies in Epidemiology http://www.equator-network.org/index.aspx?o=1032		
	Qualitative researchers might wish to consult the guideline listed below		
Qualitative studies	COREQ: Consolidated criteria for reporting qualitative research Tong, A., Sainsbury, P., Craig, J., 2007. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care* 19 (6), 349-357. (http://dx.doi.org/10.1093/intqhc/mzm042)		
Other (please give source)			
Not applicable (please elaborate)	Epidemiologist on team.		

*Title Page (with author details and affiliations)

Burden experienced by community health volunteers in Taiwan: a questionnaire survey

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***What this paper adds (statement)**

What is already known about the topic?

- Studies have explored the burden on family carers but little to date has focused on the burden experienced by community health volunteers.
- Community health volunteers complement the role of other health care workers in Taiwan and other countries.
- Without community health volunteers the Government would struggle to deliver community health services in Taiwan.

What this paper adds?

- We outline the burden experienced by a large sample of current community health volunteers in northern Taiwan.
- We revealed significant differences in overall volunteer burden depending on the number of people served on average per week, marital status, and whether volunteers perceived their own health as good or not.
- We recommend strategies for community nurses, leaders and policy makers to enhance the retention of volunteers.

Abstract

Background: Volunteers are vital to the delivery of health services because they are complementing the activities of paid health professionals in promoting healthy concepts and healthy lifestyles in their local community. Community health volunteers experience burden associated with their activities, and the reasons for and degree of that burden is explored in this paper. Our research adds to work undertaken internationally regarding the burden experienced by volunteers, and suggests ways in which such problems may be ameliorated. There is no previous research available that addresses the burden placed on community health volunteers in carrying out their role in Taiwan.

Objectives: To examine the burden experienced by community health volunteers in Taiwan.

Setting: The survey was conducted in three regions of northern Taiwan.

Participants: 435 participants of Community Health Promotion Development Centres in north Taiwan.

Methods: The 20 item BCHVs instrument designed to measure burden on community health volunteers in Taiwan was administered, using a stratified random sampling approach.

Results: The overall mean of the burden experienced by volunteers indicates that participants' level of burden is relatively low overall. However, the multivariate adjusted regression analysis revealed significant differences in overall volunteer burden depending on the number of people served on average per week, perception about personal health, and marital status. Volunteers, who served many people, were married, and who perceived their own health as poor, experienced a higher level of burden.

Conclusions: The results of the study identify areas where burden is high and where strategies can be developed to reduce the level of burden experienced by volunteers in Taiwan. Community health volunteers in Taiwan complement the role of nurses so their retention is

important to ongoing service delivery.

Key words: burden; community health development; community health volunteers; health promotion; volunteers.

1.0 Introduction

Community health volunteers (CHVs) in Taiwan assist with the delivery of health promotion and monitoring activities across the community and add significantly to the health workforce in Taiwan. As unpaid workers, their role is extremely important to the ongoing delivery of community care to a rapidly aging population (Chandra, 2001; Fried et al., 1997). Volunteers are used effectively to supplement the health workforce in many developing and developed countries (Cheung and Ma, 2010; Lamb, 2006; Lewin et al., 2010; MOI, 2008) and given the current constraints on health service delivery in developed countries, offer a potential solution to health staff shortages. Currently however little is known of the burden experienced by these volunteers in carrying out their role, especially those who undertake the community health volunteer role in Taiwan. This paper presents the results of a study undertaken to measure the burden experienced by a sample of CHVs in the north of Taiwan.

1.2 Burden experienced by volunteers

Burdens are thought to be a part of burnout, something that can be avoided if they are detected beforehand. The majority of the research on volunteer burden to date has focused on the burden experienced by family carers in the community, especially family carers of the elderly with dementia. It is possible that volunteers are affected by the same type of negative

impacts, or burdens, as for example, those experienced by family carers (Gaugler et al., 2008; Papastavrou et al., 2007). The burdens for this group of carers have been identified as including: personal strain, role strain, relational deprivation related to the management characteristics of the care recipients, patient psychopathology and the use of emotional-focused coping strategies (Whitlatch et al., 1991). Burden on community health volunteers includes work load related to the physical and emotional nature of the role, the time taken to undertake the activity, insufficient emotional support from family, other volunteers, community health nurses, and residents, lack of instrumental support, poor communication skills, lack of cooperation and lack of confidence (Akintola, 2008; Garland et al., 2009; Kang'ethe, 2009).

1.1 *Community health centres in Taiwan*

In Taiwan, there are around 150-300 Community Health Promotion Development Centres (CHPDCs) in cities and counties every year that contribute to the healthy community-development programme that are funded by Department of Health (Bureau of Health Promotion, 2011). The volunteers of each (CHPDC) are educated to assist residents to adopt healthy lifestyles. The CHVs are important to the delivery of health services because they help to diffuse healthy concepts and healthy lifestyle education in their local community and complement the paid workforce in the area (Bureau of Health Promotion, 2011; Chen and Yang, 2006; Couto, 1990; Huang and Wang, 2005).

1.2 The role of community health volunteers in Taiwan

To become a CHV, he/she must be nominated by the leader of a local community association and attend a volunteer training course. After completing the course, volunteer duties are conformed by the leader of the centre. Similarly to other community health workers, the CHVs are expected to maintain and promote the health of the community (Bureau of Health Promotion, 2006). The role of CHVs in Taiwan include: connect with community residents,

visit elderly community members who live alone, record and report blood pressure measurements, provide in-home care and conduct health behaviour change programs such as healthy diet and cooking, regular exercise and stop smoking and chewing betel nut (Bureau of Health Promotion, 2006).

In Taiwan there are three levels of CHVs. The 'fundamental' volunteers are the newest volunteers; those who have just began in the role. 'Cadre level' volunteers are more experienced and capable. This level of volunteers has been in the role longer and is capable of providing assistance to clients and leading a section of work with little supervision. 'Leaders' are the most experienced volunteers and undertake health promotion activities in the community and oversee the work of others.

1.3 Study aim

The aim of the study was to examine the burden experienced by community health volunteers in carrying out their role.

2.0 Method

2.1 Study locations, sampling procedure and recruitment of participants

The sample sites, New Taipei City, Taoyuan County and Hsinchu County, located in northern Taiwan, were chosen because of their availability, convenience, economies and municipality types. There were 52 CHPDCs in these three municipalities at the time of the study. A cross-section survey was undertaken using stratified random sampling by type of CHPDC (community, hospital or Public Health Centre based) (Bureau of Health Promotion, 2006, 2008, 2010) in order to guarantee representativeness of the main types of volunteer roles. The first author (X-X.X) distributed the surveys through the Director of the participating CHPDC and returned to collect completed surveys on a number of occasions. Out of a total of 29 CHPDCs in New Taipei City, 14 in Taoyuan County, and 9 in Hsinchu County, 12, 12, and 3

respectively participated in the study. Of the participating CHPDCs, 14 were community, 11 were hospital and 2 were public health centre based (see Figure 1).

The number of volunteers in each CHPDC varied between twenty and fifty. The inclusion criteria were: (a) aged 20 years or older (the legal age to consent in Taiwan is 20); (b) volunteered for at least 3 months in the community health field in any type of community health promotion development centre; and, (c) involved in the delivery of health promotion lifestyle to residents in the community. The number of total possible participants was four hundred and sixty. Fifteen responses were eliminated because of age limitations (n = 7) or due to surveys without a contact phone number that prevented the researcher following up incomplete item responses (n=8). Therefore, the final sample consisted of 435 volunteers (response rate = 97%) between the ages of 20 and 88, 229 (52.6%) from a community based CHPDC, 49 (11.3%) from a Public Health Centre, and 157 (36.1%) from a hospital based CHPDC. The flow chart outlined in Figure 1 describes the number sampled by using stratified sampling method of CHPDC and the number of participants.

2.2 Reliability and validity of the Burden on Community Health Volunteers (BCHVs) instrument

The BCHV tool was developed by the authors for the purpose of the study. The BCHV is a 20 item scale which uses a 5-point scale from never (1) = never occurred at any time, seldom (2) = occurred once a month, sometimes (3) = occurred once a week, often (4) = occurred twice a week, to always/nearly always (5) = occurred almost every time. A summative score of the 20 items is used; this results in a possible score for participants ranging from 20 through to 100. The higher score indicates a more burdensome perception of the volunteer experience. The survey includes widely used demographic questions relating to factors associated with

variations in personal conditions and volunteer experiences (see Table 2).

The BCHV was tested for reliability and validity with CHVs in Taiwan. The internal consistency of the instrument satisfies the minimum recommended level of reliability for Cronbach's coefficient alpha (0.823) with Cronbach's alphas for test and re-test of 0.819 and 0.767 respectively. Nine experts chosen because of their professional level as well as familiarity with community health promotion development work assessed content validity. The content validity index (CVI) of the resulting instrument was 0.86.

2.3 Ethical issues

Ethical approvals to conduct the study were sought and received from the University Human Research Ethics Committee (JCU) and the committee of the Institutional Review Board (IRB) of Chang Gung Medical Foundation in Taiwan. All participants in the study were recruited by invitation and all participation was voluntary.

2.4 Analysis of data

All data were entered into SPSS (IBM SPSS version 18, Chicago, Illinois) for Windows. Descriptive statistics such as percentages, mean values, standard deviations and median values were calculated to describe the sample. This was followed by inferential statistics using Chi-square tests, and analysis of variance or the non-parametric Kruskal-Wallis test to determine whether the burden differed between the three groups of volunteers. Multivariate linear regression analysis was used to determine factors associated with the overall sum of the burden as the dependent variable.

3.0 Results

3.1 Sample description

Demographic characteristics of the 435 participants who completed the study are described in Table 1. Overall, the sample included a majority of female volunteers (84.3%), with a mean age of 59.1±10.8 years (age range 20-88 years), 39.8% had post and high school education, 61.7% reported feeling "well" or "very well" considering their current health condition as compared to people of a similar age, and 94.3% reported having "sufficient" or "enough" current economic resources.

Volunteer experience indicates that almost the same percentage of participants were serving in the city and village regions (49% and 51%), and the median number of years working as a CHV was 4 (IQR = 2.0, 6.3), with a median number of hours per week volunteering of 6.0 (IQR = 4.0, 8.0), and a median number of people serviced per week of 30 (IQR = 16, 60).

3.2 Burden experience of surveyed community health volunteers

As shown in Table 3, the total score for the work burden of the CHVs ranged from 20 to 85, with a mean score of 45.6 (SD ±11.5). The mean score for each item ranged between 1.43 and 3.01 and the overall mean score was 2.28 (SD ±0.58), which indicated that a majority of participants experienced burden 'seldom to sometimes'. The top four burdens experienced were: item 1; "I feel the low participation by the community residents in planned healthcare activities impacts on my role" (mean 3.01; SD ±0.98); item 6; "I feel the lack of volunteers makes my role more difficult" (mean 2.86; SD ±1.18); item 4; "I feel the presence of fraudulent groups in Taiwan makes my role as a community health volunteer more difficult" (mean 2.71; SD ±1.20); and, item 9; "I feel the difficulty associated with completing the required paper work impacts on my role" (mean 2.62; SD ±1.15).

3.3 Multiple Linear Regression Analyses

In order to explore significant independent factors associated with burden when adjusted for the potential of confounding variables, standard multiple linear regression analysis was performed. The final regression model was based on 310 participants. Nine demographic characteristics were statistically significant factors (model: F (11, 298) = 11.803, p< 0.001) related to burden associated with the CHV role. Together these demographic variables predicted 30.3% (R^2 = .303) and 27.8% (adjusted R^2 = 0.278) of the variance in the sum of the CHV burden. In addition, the final regression model was adjusted for the confounding effects of age (confounded marital status and health status) and employment status (confounded health status and time spend as a CHV) as shown in Table 5 (Kleinbaum et al., 1982).

Results of linear regression analysis demonstrated that volunteers who served more than 60 people per week felt greater burden compared to people who served less people per week (β =-10.030, p < 0.001). Volunteers who served in a rural area felt on average less burdened than volunteers who served in an urban area (β =-8.084, p<0.001) and volunteers who were a widow or widower felt less burdened than volunteers with other marital status (β =-4.056, p = 0.026). In addition, volunteers who perceived their own health as not too good felt more burdened than who perceived their health as good (β =3.449, p=0.003). Moreover, the more hours a volunteer had served per week, the higher was the burden experienced. Volunteers who worked in a hospital based CHPDC experienced on average a higher level of burden than volunteers who worked in the community or public health centre based CHPDCs (β =3.514, p=0.009). The influence of the type of volunteer position on the sum of burden was not statistically significant in multivariate analysis: p=0.814 (β =-0.013) for cadre level, p=0.378 (β =-0.047) leader level and p=0.753 (β =-0.017) chief (compared to members = reference group).

4.0 Discussion

The study examined the relationships between a series of demographic variables and the role burden experienced by CHVs in Taiwan. The health workforce, especially community nurses, is complemented by the role undertaken by these volunteers so understanding their level of burden and finding ways to overcome the burden to retain them in the role is critical. The results indicate that female, middle-aged, high school level educated, and married, dominates among the sample that is consistent with other similar studies (Cheng, 2007; Lee et al., 2005; MOI, 2011). That is, volunteers tend to be predominantly female (84.3%), aged between 50 and 69 years (67.3%), have a high school level education (52.5%), and are married (81%). However, our results are different to the study conducted with a similar type of volunteer in Japan that included a sample that was all female (Murayama et al., 2006). Nevertheless, the results indicate that CHVs in Taiwan are more likely to be people of an older age group with grown up children who no longer participate in the paid workforce; this allows them the time to participate in volunteer services. Other studies have also found that ability to undertake volunteer activities is dependent upon the number and age of children, parents' ages, marital status, employment status, and the nature of the volunteer work (Wardell et al., 2000; Wilson, 2000; Wilson and Musick, 1999). In addition, it is known that women are more likely to be involved in volunteering activities than men (Rotolo and Wilson, 2007). Furthermore, according to statistics from the Taiwan Ministry of Interior (MOI, 2011), the percentage of volunteers over the age of 65 years has risen from 8.81% in 2001 to 14.05% in 2010 indicating that healthy older persons in Taiwan are volunteering at higher rates than ever before.

4.1 Role burden on volunteers

Most prior research on CHVs has been undertaken using a qualitative approach and has therefore not attempted to measure the degree of difficulty that challenges volunteers. The

results of this study reveal that CHVs in Taiwan experience a relatively low level of burden, which is similar to the results obtained by Murayama at el (2006). It should be noted that volunteers give their time freely with the expectation of benefit to the local community (Thoits and Hewitt, 2001; Wilson, 2000). However, the low participation by the community residents in planned healthcare activities, the presence of fraudulent groups in Taiwan, and misunderstanding by the community residents about the health service availability resulted in a higher degree of burden. Burden was also experienced because of insufficient numbers of volunteers available to carry out the required activities and individual volunteers having large numbers of people to serve. Previous studies have found similar results (Akintola, 2008; Kironde and Bajunirwe, 2002; Shaibu, 2006).

4.2 Current health level of volunteers and relationship to role burden

Interestingly, the study found that those who perceived their current health condition as well and above (97.8%) experienced less role burden. A study by Erlinghagen and Hank (2006) found a strong relationship between health status and the rate of engagement in voluntary work, with much lower activity rates among those who perceived their current health status as ' fair or worse' (0. 6%) than those who reported 'good or better ' health (12%). Wilson (2000) claims that volunteering is not only able to improve one's health, but also is able to preserve good health as well as keeps healthy volunteers healthy. This result is in direct contrast to the findings of Wilson and Musick (1999) who found that functional impairment has no impact on attachment to volunteer work and a decline in functional health makes no difference to volunteering. If the volunteer health weakens, he or she simply adjusts his or her schedule or asks for a rearrangement of the volunteering job (Wilson and Musick, 1999).

The present research adds to the current knowledge base by also enhancing understanding of burden experienced by volunteers from different facilities: community, hospital and Public Health Centre based. The burden experienced was statistically significant between groups with hospital based volunteers experiencing higher levels of burden than the community or public health centre based of CHVs when adjusted for the confounding effects of age and employment status. It is possible that volunteers with the hospital based centre serve clients who seek medical support from broader regions around the hospital and may not be local residents. Our findings also reveal that volunteers who served in a rural area experienced less burden than volunteers who served in an urban area. This is in direct contrast to the finding of Freeman at el. (2009), which found that rural volunteers in emergency and medical had high levels of attrition due to burnout and difficulty in meeting continuing education requirements. The difference between the study contexts and different sampling technique may account for the disparity. However, as large numbers of people live in urban areas it could be argued that the community members demand more complex health information.

The majority of studies of community volunteers argue that when volunteers experience greater satisfaction and perceive more relative benefits from their role, it is likely that they will remain actively involved for longer periods of time (Cuthill and Warburton, 2005; Garland et al., 2009; Omoto and Snyder, 1995). Unfortunately, this study shows the longer a person has volunteered overall the more s/he felt burdened. The result may indicate that more experienced volunteers are expected to take on more responsibility, manage more people, and oversee the work of other volunteers.

4.3 Study limitations

This study had several limitations in relation to methodological and sampling issues. First, this study sample was drawn only from community health services in the Northern regions of

Taiwan. It is possible that CHVs in other areas may have slightly different results. The levels of burden identified in the study were relatively low which may be related to the rewarding social interactions associated with the role, the feelings of being useful to others, and the approval of volunteer work by society (Akintola, 2011; Clary et al., 1998; O'Brien et al., 2010) which may have affected the present results. Participating volunteers might have been volunteers who did not feel as burdened by their role then non-participants, leading to an underestimation of burden. Further, the design was cross-sectional rather than longitudinal so it only offers a snap shot in time that does not allow causative conclusions to be drawn.

4.4 Implications

The burden related to volunteering in a CHV role obviously has some impact on retention of volunteers. We propose the following strategies:

- The government of Taiwan strengthen its commitment to formal volunteering by the development of training and support programs for volunteers and actively look for strategies to reduce the workload on the current volunteers. In particular, the government needs to address some of the higher areas of burden identified in the survey, such as how to negotiate and gain the cooperation of residents;
- Community health promotion development aspires to the principle of "bottom-up". In Taiwan, however, it still requires coordination and cooperation between government and civil society— the principle of both bottom-up and top-down—to drive the movement further. In order for development to occur requires the following: (1) Assist to assess community health for interventions needs to ensure readiness understanding of the local residents; (2) Assist to build alliances at an organisational level rather than an individual level in order to reduce volunteer turnover and secure resources to

ensure sustainability of programs; (3) Assist to budget resources to support regional programs with ongoing professional consultation or advice;

- Future research might explore the preferences, expectations and satisfaction of volunteers in terms of how they prefer to be managed in different positions.
- The BCHVs scale can be used by community health nurses in Taiwan in the to assess volunteers, and to develop and implement indicated interventions as required.

5.0 Conclusions

CHVs have an important role that adds significantly to the health workforce and provides many services that could not be sustained without them because of funding cutbacks. In this study, 435 participants completed the BCHV questionnaire. The overall mean of the volunteer burden was low on average. However, several items of the BCHV revealed areas of high burden that need to be addressed in the future to prevent further attrition from the role. The results of the multivariate adjusted regression analysis revealed significant differences in overall volunteer burden depending on the number of people served on average per week, whether volunteers were widowed or widower, and whether volunteers worked as health promotion volunteers or not. Volunteers who served many hours, and who perceived their own health as not too good felt more burdened than other volunteers. This research adds further support to the view that the burden experienced by CHVs is diverse and supports the need to design and implement strategies to help reduce the burden experienced by volunteers as a way to enhance their retention in the future.

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Figure(s)

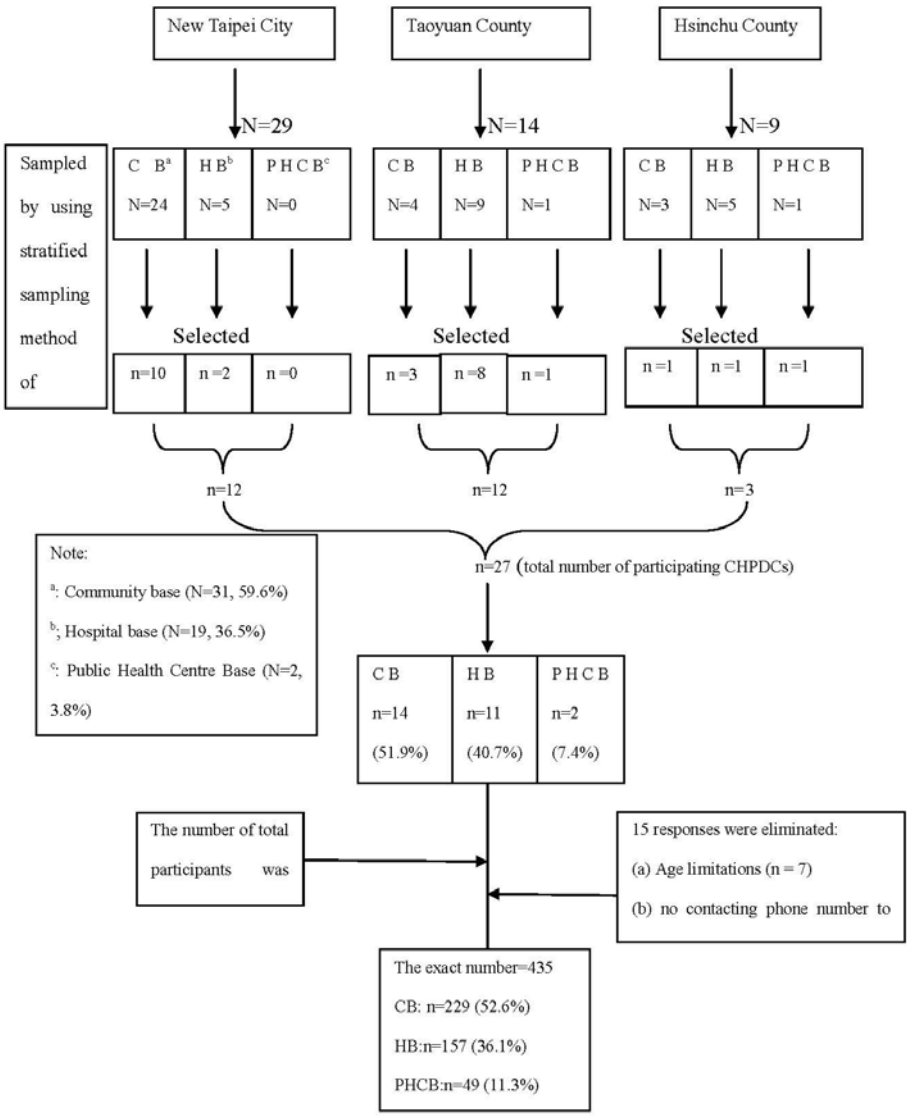

Figure 1: The number sampled by using stratified sampling method of CHPDC and the number of participants.

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Table(s)

Table 1: The demographic characteristic and information relating to the health promotion volunteering position of the survey participants (N=435).

Characteristic	Descriptive statistic
% Female participants	84.3% (n=366)
Mean age (±SD)* [years]	59.1 (±10.8)
% Highest level of education	
Elementary school or less	34.1% (n=145)
Junior high school	26.1% (n=111)
Senior high school	26.4% (n=112)
College, university, or postgraduate	13.4% (n=57)
% Religion	
Buddhist	48.7% (n=206)
Taoist	31.9% (n=135)
Other	19.4% (n=82)
% Language (multiple answers possible)	
Mandarin	92.6% (n=389)
Holo	80.2% (n=337)
Hakka	30.2% (n=127)
Other	3.1% (n=13)
% Current occupation	
Employed	31.1% (n=129)
Housework	51.1% (n=212)
Unemployed	7.7% (n=32)
Retired	10.1% (n=42)
% Married/cohabited	81.0% (n=341)
% Current condition of health compared to people of similar age	

Excellent	16.1% (n=69)
Very good	45.6% (n=195)
Good	35.5% (n=152)
Fair	2.6% (n=11)
Poor	0.2% (n=1)
Mean years lived in this community (±SD) [range]	29.1 (±17.8) [0.2, 75]
% County of residence	
New Taipei	36.8 % (n=160)
Taoyuan	50.6% (n=220)
Hsinchu	12.6% (n=55)
% Serving a village rather than a city	51.0% (n=222)
Median years (IQR)** spent working as a health promotion volunteer [range]	4 (2.0, 6.3) [0.3, 15.5]
Median hours per week (IQR) volunteering [range]	6.0 (4.0, 8.0) [0.5, 30]
Median number of people (IQR) serviced per week [range]	30 (16, 60) [1, 210]
% CHPDC***	
Community based	52.6% (n=229)
Public Health Centre based	11.3% (n=49)
Hospital based	36.1% (n=157)
% Volunteering job	
Member	52.2% (n=210)
Cadre	17.7% (n=71)
Leader	15.7% (n=63)
Chief	14.4% (n=58)
% Committed to other volunteering services	
One	38.9% (n=167)
Two	25.9% (n=111)

Three or more	20.7% (n=89)
Median years spent in all other voluntary services except community health promotion (IQR) [range]	5 (3, 8) [1, 30]
Median total time in years spent in voluntary service (IQR) [range]	8 (4.5, 14) [1, 38.8]
% Planning to stay on as a community health promotion volunteer	
Very unlikely	0.3 % (n=1)
Unlikely	0.5% (n=2)
Neutral	4.1% (n=16)
Likely	54.6% (n=214)
Very likely	40.6% (n=159)

*SD = standard deviation; Not all numbers add up to 435 because of missing values in the data, **IQR = Inter-quartile range; ***CHPDC = Community Health Promotion Development Centre; Not all numbers add up to 435 because of missing values in the data.

Table(s)

Table 2: The burden characteristics of the survey participants (N=435) measured by the newly developed tool*.

Item	Mean	SD**	n
1. I feel the low participation by the community residents in planned healthcare activities impacts on my role.	3.01	(± 0.98)	433
2. I feel I lack support from members of the community residents in carrying out my role	2.43	(± 0.98)	434
3. Misunderstanding by the community residents about the health service availability affects my role.	2.58	(± 1.03)	434
4. I feel the presence of fraudulent groups in Taiwan makes my role as a health care volunteer more difficult.	2.71	(± 1.20)	433
5. I feel the adaptation courses provided for volunteers did not adequately help me to conduct my role.	2.40	(± 1.10)	433
6. I feel the lack of volunteers makes my role more difficult.	2.86	(± 1.18)	431
7. I feel the benefits for volunteers are inadequate.	2.37	(± 1.33)	432
8. I feel my role is affected by missing or broken equipment.	2.48	(± 1.07)	433
9. I feel the difficulty associated with completing the required paper work impacts on my role.	2.62	(± 1.15)	432
10. I feel the frequent change of supervising strategies of the health government impacts on my role.	2.53	(± 1.22)	433
11. I feel that I have too many community activities to conduct to be effective.	2.17	(± 1.10)	432
12. I feel the courses provided for volunteers did not adequately prepare me for the health problems I manage.	2.56	(± 1.07)	426
13. I find difficulty it difficult to communicate among some of the community residents, such as immigrant residents, and this makes my role harder.	2.52	(± 1.05)	427
14. I am unclear about the expectations of my role.	1.70	(± 0.90)	427
15. I feel lack of communication and/or interaction with other volunteers makes my role more difficult.	1.60	(± 0.76)	428
16. I feel that the dangers associated with the health services and home care impact on my role.	1.59	(± 0.77)	428
17. I feel physically exhausted due to my volunteer role.	1.66	(± 0.82)	427
18. I feel the lack support of my family makes my role more difficult.	1.43	(± 0.75)	429
19. I feel it is difficult to arrange health schedules during holidays.	2.28	(± 0.97)	429
20. Overall, I feel the burdens associated with the volunteer's role are heavy.	2.11	(± 0.87)	428
Overall mean sum of burdens	45.6	(± 11.5)	425
range	20-85		
Overall mean of single burdens	2.28	(± 0.58)	425

*Each item was assessed from 1=never, 2 =seldom, 3=sometimes, 4=often, 5=always;
**SD = standard deviation.

Table(s)

Table 3: Factors influencing burden of volunteer work in Taiwan (n=310). Result of multiple linear regression analysis adjusted for the confounding effects of age and employment status.

Associates of the sum of all burdens	Standardised Coefficient	Original Coefficient	95%-CI	p-value
Service in rural area (compared to service in the urban area)	-0.357	-8.084	-10.569, -5.599	P<0.001
Service 60 people or more per week (compared to servicing less people)	-0.375	-10.030	-12.804, -7.257	P<0.001
Service hours per week				
3 to 11.9 hours per week	0.131	4.063	0.838, 7.287	P=0.014
12 hours or more per week	0.144	4.759	0.874, 8.643	P=0.017
Work in Health Promotion Development Centre hospital based (compared to community or public health centre based)	-0.117	3.514	0.886, 6.142	P=0.009
Time spent as a health promotion volunteer	0.147	-0.597	-0.969, -0.225	P=0.002
Total time spent in voluntary service overall	0.147	0.271	0.084, 0.459	P=0.005
Being a widow or widower (compared to being single, unmarried, married, or divorced)	-0.169	-4.056	-7.629, -0.482	P=0.026
Health status in comparison to someone of similar age being average, not well or really unwell (compared to well and very well)	0.180	3.449	1.192, 5.707	P=0.003
Model Summary	R^2 =.303 *adjusted* R^2=.278 $F(11,298)$= 11.803 (p< 0.001)			

6.4 Summary of this chapter

This chapter presented the results of a cross-sectional study that measured the burden on volunteers who work in Taiwan using the newly developed BCHPDV instrument. The measured burden was compared across the fundamental member, cadre member, the leader and the chief groups of volunteers in the Northern of Taiwan. The study used a stratified random sampling approach to the bases of the CHPDC. Four hundred thirty five participants completed the questionnaire investigating for phase three of this research project and the results were presented as a manuscript offered for publication. The following Chapter presents a discussion of the findings of the survey of the community health promotion volunteers.

Chapter 7. Discussion of the Survey Findings

7.1 Introduction

This chapter discusses the results of a cross-sectional descriptive survey employed in Phase three of the research project. The discussion of results describes the demographic and volunteer experience characteristics of the survey sample and examines differences across the three based type of CHPDC in relation to their role burden. Four hundred and thirty–five volunteers completed a questionnaire that investigated their volunteer burden experience. In the conclusion to the chapter, strategies for reducing the role burden associated with volunteering that can be used as a way of sustaining community health promotion volunteers in Taiwan in the future are proposed.

7.2 Discussion of survey

The Chapter presents the discussion of findings in three parts. The first part focuses on the demographic and volunteer characteristics of the CHPDC participants. The next part analyses the relationship between the burden of the volunteering experience and the three types of Community Health Promotion Development Centres. The third part discusses the results of the multiple linear regression analysis in terms of predicting the burden when adjusted for the potential of confounding demographic variables.

7.2.1 Discussion of the characteristics of participants

Sample demographic characteristics

The results from this cross-sectional descriptive survey demonstrate that female, middle-aged, high school level of education and married dominate among health

promotion volunteers; consistent with other studies (Cheng, 2007; Chuang, 2001; H. C. Huang, 2004; Kironde & Klaasen, 2002; C. T. Lee, Huang, & Lee, 2005; C. H. Liu, Chang, Yang, Lin, & Chen, 2005; MOI, 2011; Yu, 2009) who found that most volunteers are female (84.3%), aged between the ages of 50 and 69 years (67.3%), with high school level of education (52.5%), and married (81%). However, the demographics of the sample differ from the Japanese study of community volunteers (Murayama, et al., 2006) in which all volunteers were female (100%), had above high school level (90%) education, and a majority were employed (60%). Nevertheless, from the view of the family life cycle, it is possible to assume that those in this age group have adult children and thus have more time to participate in volunteer services. In fact, a person's intention to volunteer is known to be related to the number of children, the children's ages, the parents' ages, marital status, employment status, and the nature of the volunteer work (Wardell, Lishman, & Whalley, 2000; Wilson, 2000; Wilson & Musick, 1999). In addition, it has been suggested that the positive effect of volunteering is stronger for women than men (Rotolo & Wilson, 2007).

In Taiwan, many new grassroots community organisations for social welfare that make use of volunteer services have arisen to replace the older clubs and associations. Furthermore, according to the statistics from the Taiwan Ministry of Interior (2011), the percentage of volunteers over 65 years serving in the Social Welfare Department has increased from 8.81% in 2001 to 14.05% in 2010. Thus in terms of the ageing population in Taiwan, it appears that the healthy elderly are volunteering at higher rates than ever before. The current job status reported for the health promotion volunteers was housework (51.1%), indicating that the sample was mostly unemployed. This result is similar to the results of the study by Yu (2009). Most of volunteers' marital status in

this study was married (81%) which is also similar to others surveys such as studies by Huang and Chang (2007) (78.7%), Li at el. (2007) (89.2%), Lee at el. (2005) (78.8%), and Yu (2009) (82.7%).

This study also found that a majority of the participants perceived their current health condition as good (97.8%), which is comparable with the findings of Erlinghagen and Hank (2006) who described data from the 2004 Survey of Health, Ageing and Retirement in Europe (SHARE). The SHARE report compared the relationships between selected socio-demographic characteristics and the rates of participation in voluntary work, indicating a strong relationship between health status and the rate of engagement in voluntary work, with much lower activity rates among those who perceived their current health status as 'fair or worse' (0. 6%) compared to those who perceived their health as 'good or better' (12%). Interestingly, Wilson (2000) commented that taking part in volunteering activity helps to improve one's health and also helps to preserve the cohort of volunteers. However, this result is in direct contrast to those of Wilson and Musick (1999), who found that functional impairment has no impact on attachment to volunteer work and a decline in functional health makes no difference to volunteering. The authors mention that this result could indicate an inadequate measure of 'resources' as far as volunteering is concerned; the functional health measure is biased in the direction of physical limitations and little of the work volunteers do entails strenuous physical labour. In addition, they argue that health status has little effect on engagement in volunteering because people devote only limited amounts of time to volunteer work. If the volunteer's health weakens, they argue he or she simply adjusts his or her schedule or asks for a rearrangement of the volunteering job (Wilson & Musick, 1999).

The demographics also revealed that most volunteers had been involved for between three to six years (37.8%, median 4 years). This has further implications for the turnover of volunteers, particularly in terms of leadership and training as there is a deficit of volunteers with longer years of service in Taiwan.

7.2.2 The burden experienced by community health volunteers in Taiwan

The results reveal that the community health volunteers experience relatively low levels of burden similar to the results of Murayama at el. (2006) in their study of community health volunteers in Japan. It should be noted that volunteer work is activity in which time is given freely, with expectations of producing beneficial health effects for individuals, and local communities. This may indicate that those who volunteer are more likely to be committed to the role and thus less likely to feel burdened (Thoits & Hewitt, 2001; Wilson, 2000).

However, some of the individual items of the instrument did result in high levels of burden, for example, “I feel the low participation by the community residents in planned healthcare activities impacts on my role” (mean 3.01; SD ±0.98); “I feel the presence of fraudulent groups in Taiwan makes my role as a health care volunteer more difficult” (mean 2.45; SD± 0.79) and “Misunderstanding by the community residents about the health service availability affects my role” (mean 2.24; SD± 0.82) showed a higher degree of burden related to the reaction of community residents when volunteers approach to perform the health services. These items were similar to one in the study by Murayama at el (2006): “It is awkward to approach local residents as an HPV” (mean 2.98; SD ±0.84). Volunteers are committed to helping people in their communities to

improve their health status yet they experience burden related to the lack of cooperation by community resident to participate in health promotion activities. In addition, the presence of fraudulent groups proves to be problematic for volunteers and result in frustration when residents are reluctant to engage with them or allow them access to their homes. WHO (2007, p 130) claims that "…Health is a shared responsibility and can be achieved through the active participation of key players…" (WHO, 2007); an issue that needs to be resolved for volunteers to effectively undertake their role in the future.

Various researchers have emphasised the aspects associated with successful programs in relation to the management of volunteers. This includes:

- legitimising the contribution of volunteers to work in teams;
- providing volunteer training;
- providing an assortment of tasks;
- ongoing formal supervision with volunteers and the county officials to enable meeting the needs of residents and adjust services to adapt to the changing situation;
- having leadership within the program provided by an individual with experience in supervising caregivers; and finally
- receiving social support from family members, colleagues and the Public Health Nurses (Haddad, 2004; Leviton, Herrera, Pepper, Fishman, & Racine, 2006; Murayama, et al., 2008; Skoglund, 2006).

Although volunteers may be offering free labour or ideas to their communities, the services they supply do not come without costs. There are generally a variety of kinds

of financial support that the government or social institutions can give to the volunteers and their associations. These include, for example, the direct resources of funding and equipment and indirect means of offering services that the volunteers would have to purchase elsewhere if they were not provided, such as insurance benefits or meeting space. State funding frees the volunteers from the burden of fundraising and enables them to concentrate their efforts on providing the service, but it may also reduce the opportunities for volunteer organisations to interact with the public (Akintola, 2008; Crook, et al., 2006b; Daniels, et al., 2005; Dieleman et al., 2007; Haddad, 2004).

7.2.3 The Relationship between the burden of volunteering work, the demographic variable and health promotion volunteers

The present research supplements our understanding of burden experienced by undertaking the volunteer role based on an examination of the different based types of CHPDC. The majority of the items of burden were significantly different between the community-based volunteers and the hospital and the Public Health Centre volunteers with the community-based experiencing a higher level of burden. The overall burden experienced by volunteers from the different locations is provided in Table 7-3. It is possible that volunteers working with the hospital based and the Public Health Centre based centres could receive more support from health professionals and have access to a greater range of resources and equipment. For example, they may have access to education pamphlets, leaflets, and health measurement tools for conducting and performing services to community residents or health care receivers. Therefore, volunteers who worked within the hospital and the Public Health Centre based types felt fewer burden on their role and practice.

7.2.4 The Multiple Linear Regression Analyses

The findings of the linear regression analysis suggest that burden is higher for volunteers who served more than 60 people per week. Usually, volunteers who serve as health educators for demonstrating health promotion activity or serve as health measurement examiners could take care higher numbers of people than those involved in delivery of direct care who serve people in their home. This is more challenging because of the vulnerability of the elderly persons (Akintola, 2008; Kironde & Bajunirwe, 2002; Shaibu, 2006).

Our findings also suggest that volunteers who serve in rural areas experienced a lower level of burden than volunteers who served in an urban area. This is in direct contrast to the finding of Freeman et al. (2009) who found that rural volunteers for emergency medical services were lost to burnout at high rates because of difficulty in meeting continuing education requirements. This is arguably due to the different contexts of volunteering in different locations with different cultural traditional groups. A majority of studies of community participation demonstrated a strong sense of community and partnership helped the collaboration to build a motivated, organised base of people and committed to addressing local concerns (Hales, 2008; Minkler, Vasquez, Tajik, & Petersen, 2008; Smith, 1994). Moreover, as the work of Parkers and Paneli (2001) portray, there is a rich history of participatory approaches to research developed in the fields of rural and community development. Many of these approaches owe their origins to the various modes of research and practice used in community-based development projects, which explicitly values the analytical abilities of local people and emphasizes the importance of processes used to achieve relaxed links between local people and researchers (professionals). Moreover, people who live in urban areas might

expect more complex health information because of their higher education as well as mistrust of outsiders. Volunteers, therefore, in rural area might have fewer burdens when volunteering for health services because of acceptability and feasibility of community-based implementation program.

The study results also indicate that volunteers who perceive their own health status highly were less burdened by the volunteer role. Wilson (2000, p. 232) outlines that as "…volunteering is an additional social role, it can be expected to produce the beneficial health effects associated with more social ties….Volunteering improves health, but it is also most likely that healthier people are more likely to volunteers. Good health is preserved by volunteering; it keeps healthy volunteers healthy". This supports the argument of O'Brien et al. (2010) that depicts volunteering as having the potential to provide a shared purpose for people. Also, having a positive role identity such as volunteering is important in later life, as it has been strongly correlated with improved health outcomes (Al-Janabi, Coast, & Flynn, 2008; Gillies, 1998; Thoits & Hewitt, 2001; J. Warburton & McLaughlin, 2005). Moreover, Community-based involvement and representation in the practice of health promotion to service provision, working environments and well-being of local populaces was related to wider-reaching benefits to the volunteers overall (Gillies, 1998).

7.3 Strategy Recommendations

This research adds further support to the view that the role burden of volunteer's work is diverse and supports the need to design and implement strategies to better support volunteers in the future.

7.3.1 For the policy maker

The government needs to strengthen commitment to formal volunteering. This commitment develops through the establishment and support for volunteer resource centres and the setting up of each volunteer databank from the Township to the County and Nation-wide. Policy decisions about voluntary effort at the local level should focus attention on the identification of the effective management volunteers, such as the motivations of people to volunteer, methods of recruitment of volunteers, and how to retain volunteers. Also it is important that volunteer services maintain adequate levels of funding and provide protection for volunteers in areas such as insurance cover (Cook, 2008; Cuthill & Warburton, 2005; Kenny, et al., 2008) and occupational health. The establishment of volunteer resource centres or volunteer programs could assist to match the volunteers' skills with community or recipients' needs, such as cooperating volunteering, adjusting or changing recruitment policies, recognising previous learning, improving curriculum content and training approaches, adopting quality improvement and continuous strategies, improving information flow or using electronic health records and the relative websites, diversifying location of training sites, introducing and adjusting relative numbers of specialist or academic scholar, providing non-wage benefits, adjusting relative remuneration, Indeed, within this approach, we expect volunteers can be viewed as resources that need to be used effectively, especially volunteers in urban area has more burden than rural site in this study.

It is also important to remember that it is the role of local government to facilitate the activities of communities, not to manage them (Cook, 2008; Kenny, et al., 2008). Voluntary activity is often identified by different levels of government as central to building active, supportive and sustainable communities (Cuthill & Warburton, 2005;

Gillies, 1998; Kenny, et al., 2008; Steedman & Rabinowicz, 2006). An emphasis on voluntary activity as an activity that strengthens communities is consistent with contemporary ideas of how community participation is a keystone of a healthy society (Gillies, 1998). However, promoting community health work is quite strenuous and demanding and cannot be sustained without strong commitment members who are from their own community. They usually have a special affinity to their own communities and also show active engagement.

Oesterle et al. (2004) found that prior volunteer experience and early motivations to participate are key factors in later volunteering. Service learning programs implemented in the schools may be a key mechanism through which this could be accomplished in future. Service learning programs exposes all students and teachers to the importance of civic participation and provides participatory opportunities, especially to those who are least likely to participate because of their lack of connections to other institutions to supply the relative services. It may also provide a potential experience for change for those with the low civic participations (Oesterle, Johnson, & Mortimer, 2004).

7.3.2 For health care professional and Public Health Nurses (PHN)

The staff of the Public Health Centres at all levels – village, town and city – in Taiwan perform like the "peripheral nerves" of the government healthcare system. They are used to receiving orders from higher authorities and at times have difficulty either in taking the initiative or in handling problems flexibly. It is an issue of enduring importance to transform the role of the staff to one of information-provider, supporter, counsellor, and evaluator. Despite their commitment and efforts, the staff of the Public Health Centres might not be skilful enough to carry out in-depth analysis of problems

related to marketing and management (Chia, 2011). In this regard, they need professional assistance from the academy and the Bureau of the Public Health of County Government. Thus, the empowerment and on-job training programs could enhance the abilities of the Public Health Centre staff in order to adjust heavy workloads and transfer toward multi diversity development.

PHN core clinical values and organisational competencies are consistent with health promotion models that depend upon comprehensive community-based health assessment, self-care, self-efficacy, and empowerment strategies (Molloy & Caraher, 2000; Murashima, et al., 2002; Yoshioka-maeda, et al., 2006). Thus, there are many possible roles, including, for example, work with individuals, groups and organizations as a direct service provider, serving as a trainer or leader of volunteers, or practicing as a member of an interdisciplinary team.

The Ottawa Charter for Health Promotion identifies five action areas: (1) building healthy public policy, (2) creating supportive environments, (3) strengthening community action, (4) developing personal skills, and (5) re-orientating health care services toward prevention of illness and promotion of health. Thus, it is vital to go beyond personal skills to include community actions to facilitate desired effectiveness and implementation. Accordingly, community development aspires to the principle of "bottom-up". In Taiwan, however, it still requires coordination and cooperation between government and civil society— the principle of both bottom-up and top-down to drive the movement further.

Some reflections and suggestions are listed here, for instance, the comprehensive strategies of community health assessment and empowerment strategies for the CHPDC include (Lobo, Brown, & Edwards, 2007; Murashima, et al., 2002; H. F. Wang, 2002):

(1) Assist to assess community readiness first that the demand for interventions needs should be balanced with the potential impact and understanding of the local demands as well as assist to build up the community data bank before proposing any health issues for reducing the burdens of low civic participation.

(2) Assist to build alliances with proper institution at an organisational level rather than an individual level in order to reduce the volunteer turnover and secure resources to ensure sustainability of programs.

(3) Assist to budget resources to support regional programs with ongoing consultation or advice.

(4) Discuss regularly any deficits in the knowledge and skills required for effective peer support including duty of care, supervision and volunteer recruitment, training issues and the required paper work. Therefore, mobilizing volunteers should cultivate the organizational culture and implement enjoyably the ideal of health promotion, such as themes and strategies of health promotion should be multi-dimensional and based on daily life.

Another potential role for PHNs and other medical professionals in providing support to and educating volunteers for the emotion-focused coping strategies may help them continue to attend to the pressing needs of inadequacies in coping as stressors may not be dealt with effectively which might then threaten their health and wellbeing (Akintola, 2008).

7.3.3 For the community organisation

The study has several implications for the community health organisations. For example, our findings indicate that volunteers who served in a rural area felt on average

fewer burdens than volunteers who served in an urban area. Thus, volunteer expectations and preferences in the urban area concerning management practices may vary in relation to their level of training and experience, in terrns of being influenced by their knowledge, duration of membership and perceptions of the organisational custom of their culture. Some strategies integrating for the community health organisation comments as following below:

1. Personal characters of the promoter of the CHPDC

Most of the promoters are native residents and grew up in their own community. They usually have a special affinity to their own communities and also show active engagement. Promoting community work is quite strenuous and demanding and cannot be sustained without strong commitment. In addition to that, a correct and clear vision is required to steer the CHPDC toward the right course. Particularly in the process of developing, the committee members need to be encouraged repeatedly in order to reduce their frustration for promoting health lifestyles in the community.

2. The conditions of organisational operation:

A well-functioning organization usually demonstrates some key features: the ability to take initiative, strictly selected members with diverse backgrounds, familiarity with the working of democratic participation, and active involvement of residents in the organisational operation.

3. Strategies to encourage residents' participation:

There are various ways to foster residents' participation: propagating and promoting from the bottom up, the commitment of local leaders, targeting groups for their mobilization, family visits by volunteers, promoting a basic health lifestyle issues, as well as contacting people via multi-diversity activities. Besides, urban and rural community residents tend to have different kinds of myth and ideology regarding what

it means to be healthy. It is still a wide-spread practice in Taiwanese community that medicine is circulated via Pyramid schemes with unverified claims for healing effect (Fan, 2010; Hung, 2010). The impacts of these phenomena on health conception and health behaviour should not be ignored.

4. Resource allocation:

Systematic management of the allocation of human resource consists of several elements: the willingness of volunteers, integrating the existing volunteer network, local access to human resource, accessibility of volunteer service, diversity and creativity of training courses, institutionalisation of volunteer management, as well as standardisation of rewarding institution. Some strategies can facilitate effective allocation, i.e. diversifying financial resource, payments by the user, the principle of complementarities and burden-sharing, rewarding the resource provider, and developing a win-win situation for different resources. Employing these strategies can divert the leadership from the Public Health Centre or other official units and establish cooperation partnership among different levels, leading to resource-sharing and mutually supportive alliances.

5. Constant encouragement and lessening volunteer's frustration.

Several studies have shown the effectiveness of training programs, such as creating social spaces for dialogue and critical thinking, promoting a sense of local ownership of the problem and incentives for action, developing innovation ability and communication skill, in reducing burden and individuals at risk for developing burnout. Volunteers may benefit from intensive, well-structured programs for improving their coping skills in dealing with stressful work situations and in reducing their negative emotional responses to such situations (Bradshaw, Mairs, & Richards, 2006; Cuskelly, Taylor, Hoye, & Darcy, 2006; Shaibu, 2006; Skoglund, 2006).

Moreover, in the counselling and training of health care volunteers, the assessment of individuals should justify special attention and arrange to different job position of volunteering. Of course, it is important for the community and the third sector organizations to focus on retaining volunteer workforces through attention to their psychological welfare, training, and management and to appropriate job design to reduce many for the known risk factors (e.g., excessive case load and how to mutual cooperation).

Furthermore, organisations deploying volunteers may face experience in a training dilemma. They must provide training to attract volunteers but they may lose trained personnel to paid employment. Some form of contract between organisation and volunteers may guarantee a minimum length and provision of service and ensure that the organisation concerned obtains return on their investment (Wardell, et al., 2000). Many organisations feel a need to increase efficiency and to improve methods of recognising the altruism of volunteers in order to increase the accountability for the service provision by developing their recruitment, training, support and supervision. The contract culture has enabled some voluntary organisations to redefine and refocus their aims and mission statements.

For formally structured organisations, the contract may involve the introduction of contracts for volunteers, clearer specification of tasks and increased commitment demanded of volunteers. These developments may enhance the attraction for new volunteers, particularly job-seekers.

In sum, the community health organisation plays a critical role in the protection and promotion of public health. However, a succession of reforms has placed enormous pressure on community health services, without well-informed, needs-based interventions, the negative effects of these changes could undermine the vary benefits they were designed to achieve.

7.4 Summary of this chapter

In this phase of the research, four hundred thirty five participants completed the questionnaire investigating the burden experienced by community health volunteers across different levels and types of the CHPDCs across the North of Taiwan. While the overall mean of the role burden experienced by the cohort was relatively low overall, there were several items of the instrument that revealed significant burden. The results of the multivariate adjusted regression analysis revealed significant differences in overall volunteer burden depending on the number of people served on average per week, whether volunteers were a widow or widower, and whether volunteers worked as health promotion volunteers or not. Volunteers who served many hours, and who perceived their own health as not too good, felt more burdened than others. We recommend the diversified, accessible and integrative strategies to the authority, clinical and academic professional, community organisation and community populace.

Chapter 8. Limitations, Future Research, and Conclusion

8.1 Introduction

This chapter begins by providing the strengths of the current study, and then focuses on the limitations. The Chapter also addresses how future studies might ameliorate these limitations in the future. A final conclusion of the thesis is then presented.

8.2 Strengths of the current study

The combination of both quantitative and qualitative data within the study is an important strength; in this case each phase of the study or type of data, complements the other (Creswell & Plano Clark, 2010). Onwuegbuzie and Burke Johnson (2006, p. 58) recommend the researcher "…consciously and carefully assess the extent to which the weakness from one approach can be compensated by the strengths from the other approach and then plan and design the study to fulfill this potential" which they call *weakness minimization legitimation* (Onwuegbuzie & Burke Johnson, 2006, p. 58). In this case, the use of both approaches helps to ensure the data is stronger than if only one approach was used.

Along with the language barrier, the use of interpreters on a regular basis throughout the study, for example recording the whole interview and discussing with the interpreters prior to the transcription to clarify the meanings of words, enhanced the quality of the study. Translation of the content analysis also supported strategies to

minimise error when using back translation; this includes appropriately selecting translators and employing a review team.

Manuscripts were developed and submitted for publication during the study. This helps to disseminate the findings in a timely manner, especially important in a practice discipline, and provides feedback on aspects of the study design and reporting from relevant experts.

8.3 Limitations of the Study

This study has several limitations in relation to methodological and sampling issues that should be noted.

Notably, the selection of participants by the purposive sampling technique in the qualitative and tool development phases is recognised as a potential source of sample bias that must be acknowledged. However, it is also important that the people most able to answer the questions related to the phenomenon of study are required in this situation (Freeman, 2006; Polit & Beck, 2010; Stewart, et al., 2007; Streiner & Norman, 2008).

Participants were drawn from one regional area of Taiwan. It is possible that participants in different geographical locations may have different experiences.

Due to practical constraints the focus groups did not include volunteers in the process of withdrawing from the CHPDCs. The perception of withdrawing volunteers might present a different view and meet the extensive viewpoints of work burdens.

The initial phases of the study required an information rich sample in order to create a meaningful pool of items. In addition, an adequate sample size is important to meet the assumptions of this study or ensure statistical significance in exploratory factor analysis. A sample size of 150 observations is generally considered sufficient to obtain an accurate solution in exploratory factor analysis, as long as item inter-correlations are reasonably strong (DeVellis, 2003). A larger sample would have allowed confirmatory analysis to determine the scale's structure. Further testing of this scale with other samples in Taiwan and other Asian countries that make use of community health volunteers is recommended.

The levels of burden identified in the study were relatively low that may be attributed to the rewarding social interactions associated with volunteer work, the feelings of being useful to others and the approval of society of volunteer work (Akintola, 2011; Clary et al., 1998; O'Brien, et al., 2010; Omoto & Snyder, 1995); that may have affected the present sample. Moreover, it is possible that a 'healthy worker effect' exists in our study (Aschengrau & Seage III, 2009)p. 214); which means people who feel burdened might have already dropped out of the system or might not even have commenced as a volunteer in the first place.

Finally, the study included a cross-sectional survey rather than longitudinal so the results only present a snapshot in time and do not allow causative conclusions to be drawn.

8.4 Future research

Future research might explore the preferences, expectations and satisfaction of volunteers in terms of how they prefer to be managed in different positions. In addition, further studies using the BCHV instrument will provide useful information on the levels of burden experienced by community health promotion volunteers in order to identify strategies that could be implemented to reduce the burdens and attrition rates in the future. Finally, a longitudinal; study would help to identify burdens and link them to causative explanations.

8.5 Conclusion of this research

Community health promotion volunteers are important for the continued delivery of health promotion to communities in Taiwan as they offer a cost effective workforce that complements the paid workforce. As little was known about the burden experienced by the community health volunteers in Taiwan, and because a suitable tool to measure burden could not be located, the study described in this thesis was established. A mixed methods study was undertaken to develop and test an instrument to measure the role burden experienced by community health volunteers in the North of Taiwan. The BCHV instrument was shown to be an effective tool capable of identifying the factors related to role burden for volunteers. The survey of a cohort of volunteers in the North of Taiwan demonstrated that the burden experienced by volunteers was generally low to moderate. However, several items of the BCHV revealed areas of high burden, which need to be addressed in the future to prevent further attrition from the role. Finally, strategies were recommended for the government, community and organisations that

may help to reduce the burden experienced by volunteers in the future and suggestions for further research were identified.

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Appendices

Appendix A: Informed Consent Form-Focus group-Phase One

English version

INFORMED CONSENT FORM- Phase one-Appendix A

PRINCIPAL INVESTIGATOR	**Yueh Mei Gau**
PROJECT TITLE:	**The measurement of the burden experienced by health promotion volunteers in Taiwan**
SCHOOL	**School of Nursing, Midwifery and Nutrition**

I understand the aim of this research study is to explore the difficulty related to health promotion activity volunteering in Taiwan. I consent to participate in this project, the details of which have been explained to me, and I have been provided with a written information sheet to keep.

I understand that my participation will involve a focus group **and I agree that the researcher may use the results as described in the information sheet.**

I acknowledge that:

- any risks and possible effects of participating in the focus group have been explained to my satisfaction;
- taking part in this study is voluntary and I am aware that I can stop taking part in it at any time without explanation or prejudice and to withdraw any unprocessed data I have provided;
- that any information I give will be kept strictly confidential and that no names will be used to identify me with this study without my approval
- confidentiality cannot be assured in focus groups.

(Please tick to indicate consent)

I consent to participate in a focus group		**Yes**		**No**
I consent for my comments in the focus group to be audio taped		**Yes**		**No**

Name: *(printed)*	
Signature:	**Date:**

Chinese version

長庚技術學院

研究同意書

親愛的志工：

您好，很榮幸邀請您參與個人之博士論文研究計劃，本研究主題為「*台灣社區健康促進活動志工工作負荷之探討*」。個人目前就讀澳洲詹姆士庫克大學護理博士班，首先感謝您在社區中熱心協助及宣導健康的重要性，除身體力行外且能督促民眾執行健康生活，成為社區居民健康生活方式的模範，帶給社區有活力、安全、健康的環境；因此個人希望瞭解您在執行健康生活方式宣導工作之負荷程度為何，並設計出保健志工工作負荷之問卷，透過我們的合作，協助社區衛生護理人員能清楚評估各位的工作負荷，以提供適切的協助與服務。

如果您決定參與，我會依您留下來的電話與您聯絡，屆時您將與志同道合的 8-10 位志工在適當場所，一起參與大約 60 分鐘有關保健工作負荷訪談，訪談時有紀錄及錄音，個人會將所訪談內容作成紀錄並提供各位讀閱，避免任何疏漏。此研究能幫助您進一步了解您在執行保健工作之負荷，並分享每位志工如何克服的寶貴經驗。訪談中如果有任何讓您覺得不方便回答的問題，您可以不必回答。

任何您所提供的資訊會被認出您個人的身分，都將保留隱私權，除非徵得您的同意，否則不會被透露，您所回答的內容，在論文口頭或書面發表時，均也不會列出您的姓名，您決定參加與否不會影響任何醫療照護機構對您的服務，也不會影響您和衛生所醫護人員或澳洲詹姆士庫克大學的關係。

如果您有任何有關此研究的問題與疑慮，可以隨時聯絡我，我的聯絡電話是 0939654724 或用電子郵件和我聯繫，我的信箱是 yuehmei.gau@jcu.edu.au 或

ymgau@mail.cgit.edu.tw；您也可以用英文直接和我的指導教授 Usher 博士聯繫，她的電子郵件信箱是 KimUsher@jcu.edu.au。

您可以保留第一、二頁說明做為參考。

您現在正在決定是否參加此研究，若您已經了解它的重要性並且同意參加，請在下一頁立同意書欄中簽名，並請您填入您的基本資料：如果在此研究過程中，您決定不想繼續參加，請讓我知道，您可以隨時中斷參與，再次感謝。

桃園縣政府衛生局關心您

長庚技術學院護理系講師高月梅敬上

08/2009

- -

本研究內容及同意書，已經由研究者高月梅完整口頭告知及說明，受訪者本人已充分瞭解並同意。

受訪者　：_____　手機號碼：_____

試驗主持人：_____(簽名)　日期：____年____月____日

※若您同意參與訪談，請您填妥下兩頁基本資料，請在「□」打√，或在 _ 內填入適當答案。

◎相關基本資料：

您的性別：□①男 □②女　年齡：_____歲（足歲）

教育程度：□①國小或以下 □②初中、國中 □③高中、高職

□④專科 □⑤大學 □⑥研究所或以上

宗教：□①無 □②佛教 □③道教 □④基督天主教 □⑤回教 □⑥一貫道

語言：□①國語 □②閩南 □③客家 □④其他_____(請描述)

目前職業： □①無 □②有(請填 5-1 至 5-3)

5-1 職業性質-- □①專業性工作人員 □②行政人員 □③助理人員

□④技術性工作人員 □⑤非技術性工作人員 □⑥農漁夫 □⑦家管

5-2 職業類別-- □①軍 □②公教 □③商 □④工 □⑤農 □⑥自由業

□⑦服務業

5-3 工作情況-- □①固定場所及時間 □②不固定場所 □③不固定時間

□④不固定場所及時間

婚姻狀況：□①未婚/單身□②已婚配偶還在□③離婚或分居□④喪偶

跟同年齡比較，您覺得自己的健康狀況如何？

□①很健康 □②健康 □③普通 □④不健康 □⑤很不健康

經濟狀況：□①很充裕 □②充裕 □③普通 □④不足 □⑤很不足

居住狀況：□①獨居 □②僅夫妻二人同住 □③固定與(孫)子女或親友同住 □④到子女家中輪流居住 □⑤三代同堂

您在本社區(里、村)居住時間：_____年_____個月

您現居住於_____縣(市)_____鄉、鎮、市

您擔任保健志工時間：_____年_____個月

您每週平均服務時數(包括交通時間)：_____小時

您每週平均服務人數：_____人

您擔任社區健康營造中心或保健志工職務為:

(或社區發展協會或婦女會或家政班…等之職務皆可填入)

您是經由何種招募途徑參與社區服務志工？

□①自願 □②鄉鎮市代表 □③村長 □④社區發展協會相關監理事

□⑤婦女會 □⑥家政班 □⑦衛生所 □⑧鄰居或家人

□⑨ 其他_____(請描述)

請問您是否還擔任其他類別之志工嗎?

□①否 □②是， 若是，請填答 17-1 題

17-1 何種性質?

(1)_____；擔任多久：_____年_____個月

(2)_____；擔任多久：_____年_____個月

(3)_____；擔任多久：_____年_____個月

全部題目到此結束，麻煩再檢查一次，非常感謝您的協助！祝萬事如意！！

Appendix B: Information Sheet- Focus Group

English version

INFORMATION SHEET- Stage one- Appendix B

The measurement of the burden experienced by health promotion volunteers in Taiwan

You are invited to take part in a research project about the experience of volunteers. The project is designed to develop a tool to measure the burden on health promotion volunteers in Taiwan and eventually to use the tool to measure the burden on health promotion volunteers**.** The project is being undertaken by Yueh Mei Gau as part of a PhD at James Cook University who is supervised by Professor Kim Usher. The following information is provided to help clarify your role in the study.

You are also being asked to participate in this study being conducted through the Public Health Bureau County Government because you satisfy our eligibility criteria:
(1) Aged over 20 years of age;
(2) A volunteer of at least 3 months in the health promotion field in any type of community health promotion development centre in Taiwan;

This part of the study involves some small group discussions or focus groups about the burden of volunteers' experience in health promotion activities in Taiwan. Participation in a group is entirely voluntary. The questions will not be a sensitive nature and all discussions are treated with strictest confidentiality. You do not have to answer any question that you do not wish to and are free to withdraw at any time. The focus group will ask questions such as "what are the main burdens on health promotion volunteers in Taiwan?" and "Can you tell me the activities that cause the largest burden on your role as a health promotion volunteer?"

To enable us to analyse the points raised in the group discussions, we will need to produce a transcript of the session. To do this, we will need to record the group discussions. This is much easier than taking notes and will ensure we do not lose any valuable information. The audio-tape will contain no form of individual identification, will

be stored securely, and tapes will be destroyed once information from the discussions has been transcribed. These transcripts will not identify participants by their name or any other identifying description. However, being involved in a focus group means others in the group will know what you have said.

As a University research we are bound to follow strict confidentiality guidelines in term of the information we collect. This study will not ask about personal or confidential information and you are not obliged to answer any questions you do not want to. The information collected from the group discussions will be stored without any information that could identify people who take part in the research. The finding will be aggregated and it will not be possible to identify information from any individual.

The focus group discussions will take about one to one and a half hours. They will be conducted at a place near where the participants live. There is however a small reimbursement for any inconvenience or associated transport costs associated with attendance at the group discussion. Refreshments will be provided during the groups.

We very much appreciate you being involved in this important research. If you require any additional information about this study or about the focus group that you are attending, or if you have any concerns about this study, please do not hesitate to contact the researcher's e-mail : yuehmei.gau@jcu.edu.au or cell phone : 0939-654724

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If you have any concerns regarding the ethical conduct of the study, please contact Tina Langford, Ethics Officer, Research Office, James Cook University, Townsville, Qld, 4811. Phone: 4781 4342, Tina.Langford@jcu.edu.au

Chinese version

參與焦點團體之說明

真誠感謝您參與個人就讀澳洲詹姆士庫克大學之護理博士論文研究計劃，本說明是期望能增進您參與此研究之確認與意願。

本研究主題

發展及評估執行社區健康促進活動志工工作之負荷

本研究目的

透過本研究，經由您在會議中的陳述，期望瞭解您在當地社區執行健康促進活動的各種經驗，如參與動機、如何加入、參與健康促進活動喜樂感及困難等。

參與本研究的益處

個人希望瞭解您在執行健康生活方式宣導工作之負荷程度為何，並設計出保健志工工作負荷之問卷，透過我們的合作，能讓社區衛生護理人員能即時清楚評估各位的工作負荷，以協助及加強各位在在地社區所提供的健康促進活動服務。

參與對象選擇

1.年滿 20 歲

2.擔任志工並參與執行社區健康促進活動至少有三個月

本研究的進行與參與者隱私權之保障

本研究第一階段將舉辦數場有關保健工作負荷經驗之小型討論會，第二階段是將所設計之工作負荷問卷在次訪談十位參與者，參與者完全是志願的，本研究完全依照澳洲大學研究倫理相關規定執行，所問的問題及討論會的進行不涉及各位隱私，訪談內容之紀錄不會認知各位的身分，並安全的保存且錄音帶於研究結束後予以毀損。訪談的問卷也一律妥善保存，研究的結果與報告也不會呈現參與者的身分。

本研究進行之時間及地點：

討論會將進行 60 至 90 分鐘，地點的選擇儘可能安排靠近參與者居住地區，並酌情給予交通費，會議當中亦提供餐點及精美禮物。

Appendix C: Focus Group Interview Guides

English version

Interview Guide Questions- Stage one-Appendix C

Part A: General research objectives for focus groups

1. What is the current level of burden on volunteers in Taiwan?
2. How do novice, experienced and veteran health promotion volunteers describe their current level and experience of burden?
3. Do all groups of volunteers share similar burden?
4. What differences in burden can be identified within / across the groups?
5. What support mechanisms could be employed to support the health promotion volunteers in the future?

Part B: Discuss guides

Being a health promotion volunteer:

1. What motivated you to participate in the volunteer program?
2. How were you recruited?
3. What kinds of work for health promotion do you do?
4. What makes it hard you to continue as a volunteer?
5. How do you manage these issues?
6. What makes it satisfactions you to continue as a volunteer?
7. How do you encourage or share your experiences with other volunteers?

Chinese version

焦點團體指引

本研究探討事項

1. 目前志工工作負荷程度為何?
2. 新的、有經驗的和資深的志工如何陳述他們的工作負荷經驗與程度?
3. 不同組別有相似的工作負荷嗎?
4. 不同組別有何不同的工作負荷?
5. 有何支持機制提供志工調適工作?

討論會討論事項

做為一位執行健康促進活動志工：

1. 您是什麼樣的動機之下加入志工行列?
2. 您是如何加入志工行列?
3. 您是執行哪些健康促進活動工作?
4. 怎樣的困難或困境讓您感受無法持續當志工?
5. 遇到這些困難與困境，您是如何處理?
6. 怎樣的滿足感讓你持續當志工?
7. 您如何鼓勵及分享您的經驗給其他志工?

Appendix D: Information Sheet-Stage two

English version

INFORMATION SHEET- Stage two-Appendix D

The measurement of the burden experienced by health promotion volunteers in Taiwan

You are invited to take part in this research study. The information in this document is meant to help you decide whether or not to take part. Please feel free to ask if you have any queries or concerns.

My name is Yueh-Mei Gau, a doctoral student in James Cook University, Australia. I am interested in assessing the difficulty related to health promotion volunteering in Taiwan. I need to enrol community health volunteers with a range of experiences to help me to develop an appropriate questionnaire that will eventually be used with all health volunteers in Taiwan. This research involves you completing a questionnaire about the burden of your health promotion activity. The questionnaire should take you about 20 to 30 minutes to complete

You are being asked to participate in this study being conducted through the Public Health Bureau Taoyuan County Government because you satisfy our eligibility criteria:
(1) Aged over 20 years of age;
(2) A volunteer of at least 3 months in the health promotion field in any type of community health promotion development centre in Taiwan;

You will be either one of 10 health promotion volunteers or one of a group of community health promotion nursing clinicians we plan to recruit in this study.

In the study we plan to use this information to develop an assessment instrument to identify the level of burden on current volunteers, with the results providing information that can be used to develop appropriate improvements for the health promotion work of volunteers in the future.

I have obtained permission from James Cook University Human Research Ethics Committee (HREC) and the Public Health Bureau of Taipei, Taoyuan and Hsinchu County Government in Taiwan to conduct this study.

You have the right to confidentiality regarding the privacy of your information. The information from this study, if published in scientific journals or presented at scientific meetings, will not reveal your identity.

Your decision not to participate in this research study will not affect your relationship with the investigator or the institution. There are no risks associated with the study.

Participation in this research is purely voluntary and you have the right to withdraw from this study at any time without any explanation. However, if you feel you are able to offer feedback in regards to the study process it would help me to improve my skills.

If you agree to participate in this study I will contact you by phone. If you are willing to be contacted, please check the following box and return this letter to me. If you do not wish to be contacted, do not return this letter. Thank you very much.

If you have any questions about the study, please contact the researcher's e-mail : yuehmei.gau@jcu.edu.au or cell phone : 0939-654724

Or mail to: Yueh-Mei, Gau
Address: 6F, No. 30, Lane 44, He-Xing Rd, Wen-Shan District, Taipei city, 116, Taiwan, R.O.C.

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Chinese version

長庚技術學院

受訪同意書　　第二階段

一、試驗主題

社區健康促進活動志工工作負荷經驗工具發展及測量

二、簡介

社區健康促進志工在社區中熱心協助及宣導健康的重要性，除身體力行外且能督促民眾執行健康生活方式，促進居民遠離慢性病與心理不適的威脅，成為社區居民健康生活方式的模範，帶給社區活力、安全、健康的環境。但此工作執行，相信志工們有不同層次之困難，因此個人希望瞭解您在執行健康生活方式宣導工作之負荷情形為何，並設計出健康促進志工工作負荷之問卷，協助衛生局與衛生所護理人員能清楚評估熱心從事志工的工作負荷，以提供適切的協助與服務。

三、試驗目的

透過本研究，期望瞭解您在當地社區執行健康促進活動的各種經驗，如參與動機、如何加入、參與健康促進活動喜樂感及困難等感受。

四、試驗方法與程序說明

本研究共兩年，共分五個階段，此為第二階段，是將所設計之工作負荷問卷再次訪談十位參與者，參與者完全是志願的，此次參與受訪者是第一階段參與者同意之受訪者，由研究者面對面將問卷逐一訪談 30 分鐘，以確認所設計之問卷能評

估社區健康促進志工工作困難陳述。本研究完全依照澳洲大學人類研究倫理委員會及長庚紀念醫院人體試驗研究倫理委員會相關規定執行，所問的問題不涉及各位隱私，訪談的問卷也一律妥善保存於研究者就讀學校研究單位的櫃子並上鎖，研究的結果與報告也不會呈現受訪者的身分。

五、可能產生之副作用及危險

訪談中如果有任何讓您覺得不方便回答的問題，您可以不必回答。任何您所提供的資訊不會被認出您個人身分，隱私權都將被保護，除非徵得您的同意，否則不會被透露。您所回答的內容，在論文口頭或書面發表時，均也不會列出您的姓名，您決定參加與否不會影響任何醫療照護機構對您的服務，也不會影響您和衛生所醫護人員或澳洲詹姆士庫克大學的關係。

六、預期試驗效果

期望能瞭解當您在執行健康生活方式宣導工作時，所面臨的困難程度為何。並設計出能評估健康促進志工工作負荷之問卷，能讓社區衛生護理人員能即時且清楚評估志工的工作負荷，得以提供協助及加強志工在在地社區所提供的健康促進活動服務。

七、緊急狀況之處理

受訪過程中，若您感到任何不適，將立即中止訪談，並提供必要之協助。若因為參與本研究而造成您身體上的任何損害，研究主持人高月梅將會提供您完善的醫療照護，24 小時聯絡電話：0939-654724。

八、受試者權益

1. 費用負擔：您無須負擔試驗費用。
2. 損害賠償：如果是因為訪談造成您的損害，長庚技術學院及計畫主持人將依中華民國法令賠償責任。
3. 保護隱私
    a. 一個編號代碼將代表您的身分，此代碼不會顯示您的姓名、身分證字號、住址。
    b. 對於您受訪的結果及診斷，試驗主持人將持保密的態度。除了有關機關依法調查外，試驗主持人會小心維護您的隱私。
    c. 行政院衛生署與本院人體試驗倫理委員會在不危害您隱私的情況下，得以檢視您的資料。
4. 如本計畫成果產生學術文獻發表、實質效益或衍生其他權益時，亦同意無償捐贈給本院作為疾病預防、診斷及治療等公益用途。
5. 受試者或立同意書人有權在無任何理由情況下，隨時要求終止參與試驗。

九、研究者聯絡方式

如果您有任何有關此研究的問題與疑慮，可以隨時聯絡我，我的聯絡電話是0939654724 或用電子郵件和我聯繫，我的電子郵件信箱是yuehmei.gau@jcu.edu.au 或 ymgau@mail.cgit.edu.tw；您也可以用英文直接和我的指導教授 Usher 博士聯繫，她的電子郵件信箱是 kim.usher@jcu.edu.au。

本研究內容及同意書，已經由高月梅完整口頭告知及說明，受訪者本人已充分瞭解並同意。

受試者　：_____　　手機號碼：_____

試驗主持人：_____(簽名)　日期：____年____月____日

Appendix E: Informed Consent Form-Phase Two-Step one

English version

The burden on community health volunteers instrument

Dear volunteer:

This questionnaire is designed to understand how you feel about your work as a health volunteer in the community. It is being designed and distributed as part of a PhD study at James Cook University (JCU), Queensland, Australia, under the supervision of Professor Kim Usher. The project has ethical approval from the JCU Human Ethics Research Committee and the Institutional Review Board (the IRB) of Chang Gung Medical Foundation in Taiwan. The results from the study will provide information from which future improvements can be designed to help increase participation in health promotion volunteer work and to improve the role.

PART 1: Asks questions related to your background, experience and current role. These questions have tick boxes for you to indicate your choice.

PART 2: Asks questions related to the burden of work as a health promotion volunteer. This section has five different frequency descriptions after each item, from never, seldom, sometimes, often or nearly always.
Please take tick (√) of each item which coincides with my current situation.

When you have completed the questionnaire, please place it in the envelope provided. Thank for your opinions and participation.

If you have any questions about the study, please contact the researcher's e-mail : yuehmei.gau@jcu.edu.au or cell phone : 0939-654724 Or the supervisor: kim.usher@jcu.edu.au.

Or mail to: Yueh-Mei, Gau. Address: 6F, No. 30, Lane 44, He-Xing Rd, Wen-Shan District, Taipei city, 116, Taiwan, R.O.C.

Please take tick (ˇ) of each item which coincides with my consideration from very important to not very important.

Part 1: background of volunteer	Very	important	neutrality	Not	Not very

	important			important	important
❋Social-demographic information					
1. Sex: ☐male ☐female	□	□	□	□	□
2. Age:____years old	□	□	□	□	□
3. Level of education: total ____years					
☐ Under or Elementary School ☐ Junior High School	□	□	□	□	□
☐ Senior High School ☐ College/university or above					
4. Religion: ☐none ☐Buddhist ☐Taoist ☐Christine ☐Islam	□	□	□	□	□
5. Main language (The language that you usually use in daily life, multiple selected)					
☐Mandarin ☐Holo ☐Hakka	□	□	□	□	□
☐Other (please indicate): _____					
6. Current occupation:					
☐Profession ☐Administrator ☐Assistance ☐Technician					
☐non-Technician ☐Farmer ☐ Soldier ☐Government employee	□	□	□	□	□
☐School teacher ☐Labourer ☐Business ☐Service Industry ☐freelance					
☐ Housework ☐Unemployed					
7. Situation of occupation:					
☐ Regular schedule and location ☐ Irregular location	□	□	□	□	□
☐ Irregular schedule ☐ Irregular for both schedule and location					
8. Marital status: ☐ Unmarried/single ☐ Married/cohabited ☐ Divorced/Separated ☐ Widow/Widower	□	□	□	□	□
9. To compare with the similarly aged people, how is your health condition? ☐very well ☐well ☐good ☐not well ☐not very well	□	□	□	□	□
10. Economic condition: ☐completely sufficient ☐sufficient ☐enough ☐insufficient	□	□	□	□	□
11. Who lives with you? (Please mark all that apply and circle the most important	□	□	□	□	□

relationships if more than one category lives with you) ☐ I live alone

☐ I live with: ☐ My spouse ☐ My offspring ☐ My parent(s)

☐ My relative ☐ My friend(s)

12. Extent of Residency in this community:___years____months

13. Place of residence:_____district_____county

❋Experiences of health promotion volunteers

14. Time spent as health promotion volunteer: :___years___months

15. Average service hours per week (including traffic time):____hours

16. Average number of people serviced per week:_____persons

17. What kind of volunteering job in the community health development do you do? (Please describe):

18. What method in the community was you recruited?

19. Have you ever been being any other kind of volunteer?☐no ☐yes

If yes, please answer 19-1 and 19-2

19-1 What kind of volunteer service?	19-2 How long have you been a volunteer in this service?
(1) (Please describe)	(1) ___years____months
(2)_____(Please describe)	(2) ___years____months

□	□	□	□	□
□	□	□	□	□
□	□	□	□	□
□	□	□	□	□
□	□	□	□	□
□	□	□	□	□
□	□	□	□	□
□	□	□	□	□
□	□	□	□	□
□	□	□	□	□

	Part 2: The burden experienced by community health volunteers.	never	seldom	Some-times	often	Nearly always	Very important	important	neutrality	Not important	Not very important
1.	I feel the low participation by the community residents in planned healthcare activities impacts on my role. Comment:	□	□	□	□	□	□	□	□	□	□
2.	I feel I lack support from members of the community residents in carrying out my role Comment:	□	□	□	□	□	□	□	□	□	□
3.	I experience difficulty arranging my time availability with that of the community residents. Comment:	□	□	□	□	□	□	□	□	□	□
4.	Misunderstanding by the community residents about the health service available affects my role. Comment:	□	□	□	□	□	□	□	□	□	□
5.	Criticism by the community residents towards the health service impacts on my role. Comment:	□	□	□	□	□	□	□	□	□	□

	Part 2: The burden of work as a health promotion volunteer.	never	seldom	Some-times	often	Nearly always	Very important	important	neutrality	Not important	Not very important
6.	I feel that mistrust by the community residents toward health service affects my role. Comment:	□	□	□	□	□	□	□	□	□	□
7.	Refusal of the community residents to accept the available health service impacts on my role. Comment:	□	□	□	□	□	□	□	□	□	□
8.	I feel the community residents' misunderstanding of my role impacts on my effectiveness. Comment:	□	□	□	□	□	□	□	□	□	□
9.	I feel that community residents' irrational requests of the health service impact on my role. Comment:	□	□	□	□	□	□	□	□	□	□
10.	I feel the presence of fraudulent groups in Taiwan makes my role as a health care volunteer more difficult. Comment:	□	□	□	□	□	□	□	□	□	□
	Part 2: The burden of work as	never	seldom	Some-times	often	Nearly always	Very	important	neutrality	Not	Not very

	a health promotion volunteer.						important			important	important
11.	I feel my role is affected by the community residents who choose not to follow recommended health care advice. Comment:	□	□	□	□	□	□	□	□	□	□
12.	I feel that I have too many community activities to conduct to be effective. Comment:	□	□	□	□	□	□	□	□	□	□
13.	I find it tiresome to conduct the same tasks continually. Comment:	□	□	□	□	□	□	□	□	□	□
14.	I feel the courses provided for volunteers did not adequately prepare me for the health problems I manage. Comment:	□	□	□	□	□	□	□	□	□	□
15.	I feel overlapping of topics in the training courses impacted on my educational preparation for the role. Comment:	□	□	□	□	□	□	□	□	□	□
	Part 2: The burden of work as a health promotion volunteer.	never	seldom	Some-times	often	Nearly always	Very important	important	neutrality	Not important	Not very important
16.	I experienced difficulty understanding the intensive training courses offered.	□	□	□	□	□	□	□	□	□	□

	Comment:										
17.	I find it difficult to translate the professional training course contents into simple language. Comment:	□	□	□	□	□	□	□	□	□	□
18.	I find difficult communication among some of the community residents, such as migrant residents, makes my role harder. Comment:	□	□	□	□	□	□	□	□	□	□
19.	An adaptation course would help me to conduct my role. Comment:	□	□	□	□	□	□	□	□	□	□
20.	I feel my weekly schedule is unreasonable. (I experience difficulty arranging my duty routine.) Comment:	□	□	□	□	□	□	□	□	□	□
	Part 2: The burden as a community health volunteer.	never	seldom	Some-times	often	Nearly always	Very important	important	neutrality	Not important	Not very important
21.	I feel lack of communication and/or interaction with other volunteers makes my role more difficult.	□	□	□	□	□	□	□	□	□	□

Comment:										
22. I feel the large number of older volunteers impact on my role. Comment:	□	□	□	□	□	□	□	□	□	□
23. I feel the lack of volunteers makes my role more difficult. Comment:	□	□	□	□	□	□	□	□	□	□
24. I feel the benefits for volunteers are adequate. Comment:	□	□	□	□	□	□	□	□	□	□
25. I feel the stress of being a captain of a volunteer team impacts on me. Comment:	□	□	□	□	□	□	□	□	□	□
26. I am unclear about the expectations of my role. Comment:	□	□	□	□	□	□	□	□	□	□
Part 2: The burden as a community health volunteer.	never	seldom	Some-times	often	Nearly always	Very important	important	neutrality	Not important	Not very important
27. I feel lack of support by my spouse impacts on my ability to conduct my role as a volunteer. Comment:	□	□	□	□	□	□	□	□	□	□
28. I feel the lack support of my family makes my role more difficult. Comment:	□	□	□	□	□	□	□	□	□	□

29. I feel the lack of support from community leaders' impacts on my role. Comment:	□	□	□	□	□	□	□	□	□	□
30. I feel the uncooperative attitude among the community leaders' impacts on my role. Comment:	□	□	□	□	□	□	□	□	□	□
31. I feel the lack of guidance by the community leaders' impacts on my role. Comment:	□	□	□	□	□	□	□	□	□	□
32. I feel the difficulty associated with completing the required paper work impacts on my role. Comment:	□	□	□	□	□	□	□	□	□	□
Part 2: The burden as a community health volunteer.	never	seldom	Some-times	often	Nearly always	Very important	important	neutrality	Not important	Not very important
33. I feel the shortage of funds impacts on my ability to adequately carry out my role. Comment:	□	□	□	□	□	□	□	□	□	□
34. I feel my role is affected by missing or broken equipment. Comment:	□	□	□	□	□	□	□	□	□	□
35. I feel the frequent changes of supervisor of the health government impacts on my role.	□	□	□	□	□	□	□	□	□	□

	Comment:									
36.	I feel the frequent change of supervising strategies of the health government impacts on my role. Comment:	□	□	□	□	□	□	□	□	□	□
37.	I feel it is difficult to arrange health schedules during holidays. Comment:	□	□	□	□	□	□	□	□	□	□
	Part 2: The burden as a community health volunteer.	never	seldom	Some-times	often	Nearly always	Very important	important	neutrality	Not important	Not very important
38.	I feel the associated expenses of being a volunteer, such as transport fee, fuel fee, etc, impact on my role. Comment:	□	□	□	□	□	□	□	□	□	□
39.	I feel the difficulty associated with transport to certain centres impacts on my role. Comment:	□	□	□	□	□	□	□	□	□	□
40.	I feel that the dangers associated with the health services and home care impact on my role.	□	□	□	□	□	□	□	□	□	□

Comment:										
41. I feel the loss of motivation impacts on my role. Comment:	□	□	□	□	□	□	□	□	□	□
42. I need time to adjust my role and to cope with my frustration. Comment:	□	□	□	□	□	□	□	□	□	□
Part 2: The burden as a community health volunteer.	never	seldom	Some-times	often	Nearly always	Very important	important	neutrality	Not important	Not very important
43. I feel physically exhausted due to my volunteer role. Comment:	□	□	□	□	□	□	□	□	□	□
44. Overall, I feel the burden associated with the volunteer's role is heavy. Comment:	□	□	□	□	□	□	□	□	□	□

Are there any other issues associated with being a volunteer that I wish to add?

Thanks!

Chinese version

長庚技術學院

受訪同意書　　第二階段

一、試驗主題

社區健康促進活動志工工作負荷經驗工具發展及測量

二、簡介

社區健康促進志工在社區中熱心協助及宣導健康的重要性，除身體力行外且能督促民眾執行健康生活方式，促進居民遠離慢性病與心理不適的威脅，成為社區居民健康生活方式的模範，帶給社區活力、安全、健康的環境。但此工作執行，相信志工們有不同層次之困難，因此個人希望瞭解您在執行健康生活方式宣導工作之負荷情形為何，並設計出健康促進志工工作負荷之問卷，協助衛生局與衛生所護理人員能清楚評估熱心從事志工的工作負荷，以提供適切的協助與服務。

三、試驗目的

透過本研究，期望瞭解您在當地社區執行健康促進活動的各種經驗，如參與動機、如何加入、參與健康促進活動喜樂感及困難等感受。

四、試驗方法與程序說明

本研究共兩年，共分五個階段，此為第二階段，是將所設計之工作負荷問卷再次訪談十位參與者，參與者完全是志願的，此次參與受訪者是第一階段參與者同意之受訪者，由研究者面對面將問卷逐一訪談 30 分鐘，以確認所設計之問卷能評估社區健康促進志工工作困難陳述。本研究完全依照澳洲大學人類研究倫理委員會及長庚紀念醫院人體試驗研究倫理委員會相關規定執行，所問的問題不涉及各位隱私，訪談的問卷也一律妥善保存於研究者就讀學校研究單位的櫃子並上鎖，研究的結果與報告也不會呈現受訪者的身分。

五、可能產生之副作用及危險

訪談中如果有任何讓您覺得不方便回答的問題，您可以不必回答。任何您所提供的資訊不會被認出您個人身分，隱私權都將被保護，除非徵得您的同意，否則不會被透露。您所回答的內容，在論文口頭或書面發表時，均也不會列出您的姓名，您決定參加與否不會影響任何醫療照護機構對您的服務，也不會影響您和衛生所醫護人員或澳洲詹姆士庫克大學的關係。

六、預期試驗效果

期望能瞭解當您在執行健康生活方式宣導工作時，所面臨的困難程度為何。並設計出能評估健康促進志工工作負荷之問卷，能讓社區衛生護理人員能即時且清楚評估志工的工作負荷，得以提供協助及加強志工在在地社區所提供的健康促進活動服務。

七、緊急狀況之處理

受訪過程中，若您感到任何不適，將立即中止訪談，並提供必要之協助。若因為參與本研究而造成您身體上的任何損害，研究主持人高月梅將會提供您完善的醫療照護，24 小時聯絡電話：0939-654724。

八、受試者權益

6. 費用負擔：您無須負擔試驗費用。
7. 損害賠償：如果是因為訪談造成您的損害，長庚技術學院及計畫主持人將依中華民國法令賠償責任。
8. 保護隱私
    a. 一個編號代碼將代表您的身分，此代碼不會顯示您的姓名、身分證字號、住址。
    b. 對於您受訪的結果及診斷，試驗主持人將持保密的態度。除了有關機關依法調查外，試驗主持人會小心維護您的隱私。
    c. 行政院衛生署與本院人體試驗倫理委員會在不危害您隱私的情況下，得以檢視您的資料。
9. 如本計畫成果產生學術文獻發表、實質效益或衍生其他權益時，亦同意無償捐贈給本院作為疾病預防、診斷及治療等公益用途。
10. 受試者或立同意書人有權在無任何理由情況下，隨時要求終止參與試驗。

九、研究者聯絡方式

如果您有任何有關此研究的問題與疑慮，可以隨時聯絡我，我的聯絡電話是 0939654724 或用電子郵件和我聯繫，我的電子郵件信箱是

yuehmei.gau@jcu.edu.au 或 ymgau@mail.cgit.edu.tw；您也可以用英文直接和我的指導教授 Usher 博士聯繫，她的電子郵件信箱是 kim.usher@jcu.edu.au。

本研究內容及同意書，已經由高月梅完整口頭告知及說明，受訪者本人已充分瞭解並同意。

受試者　：_____　　手機號碼：_____

試驗主持人：_____(簽名)　日期：____年____月____日

第一部份：相關基本資料	**非常重要**	**重要**	**中立意見**	**不重要**	**非常不重要**
1.　您的性別：□①男 □②女 意見：	□	□	□	□	□
2.　年齡：_____歲（足歲） 意見：	□	□	□	□	□
3.　教育程度：□①國小或以下 □②初中、國中 □③高中、高職 □④專科 □⑤大學 □⑥研究所或以上 意見：	□	□	□	□	□

4. 宗教：☐①無 ☐②佛教 ☐③道教 ☐④基督天主教 ☐⑤回教 ☐⑥一貫道 意見：	□	□	□	□	□
5. 語言：☐①國語 ☐②閩南 ☐③客家 ☐④其他_____(請描述) 意見：	□	□	□	□	□
6. 目前職業性質：☐⓪無 ☐①專業性工作人員 ☐②行政人員 ☐③助理人員 ☐④技術性工作人員 ☐⑤非技術性工作人員 ☐⑥農漁夫 ☐⑦軍 ☐⑧公教 ☐⑨商 ☐⑩工 ☐⑪農 ☐⑫自由業 ☐⑬服務業 ☐⑭家管 意見：	□	□	□	□	□

第一部份：相關基本資料(續前頁)	**非常重要**	**重要**	**中立意見**	**不重要**	**非常不重要**
7. 工作情況：☐①固定場所及時間 ☐②不固定場所 ☐③不固定時間 ☐④不固定場所及時間 意見：	□	□	□	□	□
8. 婚姻狀況：☐①未婚/單身☐②已婚配偶還在☐③離婚或分居☐④喪偶 意見：	□	□	□	□	□
9. 跟同年齡比較，您覺得自己的健康狀況如何？ ☐①很健康 ☐②健康 ☐③普通 ☐④不健康 ☐⑤很不健康	□	□	□	□	□

意見：

10. 經濟狀況：☐①很充裕 ☐②充裕 ☐③普通 ☐④不足 ☐⑤很不足 意見：	□	□	□	□	□
11. 居住狀況：☐①獨居 ☐②僅夫妻二人同住 ☐③固定與(孫)子女或親友同住 ☐④到子女家中輪流居住 ☐⑤三代同堂 意見：	□	□	□	□	□

第一部份：相關基本資料(續前頁)	**非常重要**	**重要**	**中立意見**	**不重要**	**非常不重要**
12. 您在本社區(里、村)居住時間：_____年_____個月 意見：	□	□	□	□	□
13. 您現居住於_____縣(市)_____鄉、鎮、市 意見：	□	□	□	□	□
14. 您擔任保健志工時間：_____年_____個月 意見：	□	□	□	□	□
15. 您每週平均服務時數(包括交通時間)：_____小時 意見：	□	□	□	□	□

16. 您每週平均服務人數：_____人 意見：	□	□	□	□	□
17. 您擔任社區健康營造中心或保健志工職務為: (或社區發展協會或婦女會或家政班…等之職務皆可填入) 意見：	□	□	□	□	□

第一部份：相關基本資料(續前頁)	**非常重要**	**重要**	**中立意見**	**不重要**	**非常不重要**
18. 您是經由何種招募途徑參與社區服務志工？☐①自願 ☐②鄉鎮市代表 ☐③村長 ☐④社區發展協會相關監理事 ☐⑤婦女會 ☐⑥家政班 ☐⑦衛生所 ☐⑧鄰居或家人 ☐⑨ 其他(請描述) 意見：	□	□	□	□	□
19. 請問您是否還擔任其他類別之志工嗎? ☐①否 ☐②是， 若是，請填答 19-1 題何種性質及 19-2 任期? 意見：	□	□	□	□	□
19-1 / 19-2					
(1)_____ ; _____年_____個月	□	□	□	□	□
(2)_____ ; _____年_____個月	□	□	□	□	□

(3) _____年_____個月 □ □ □ □ □

意見：

第二部份社區健康營造保健志工工作負荷指數

此份問卷主要瞭解您在執行社區健康促進活動時，擔任志工這份工作(角色)，會遇到的困難或負荷，因此在每項敘述後面，依發生的頻率，有五種不同的選項，從不、很少如此(一個月幾次)、有時候(一週 1 次)、經常如此(一週 2 次以上)或總是如此(幾乎每次)。請依您的感覺，選出您認為最符合當前的情況，而您的意見有助於研究人員清楚評估志工的工作負荷，得以提供社區衛生護理人員推展保健志工之協助，並加強志工在在地所提供的健康促進活動服務於社區中。感謝您！***敬祝　　健 康 ！！***

	第二部份：志工工作負荷量表	**非常重要**	**重要**	**中立意見**	**不重要**	**非常不重要**	**合適**	**修正後合適**	**不合適**	**修正意見**
1.	我覺得社區民眾參與度不高	□	□	□	□	□	□	□	□	
2.	我覺得社區民眾不支持我的服務	□	□	□	□	□	□	□	□	
3.	我覺得我提供服務的時間和社區民眾的時間無法配合	□	□	□	□	□	□	□	□	
4.	我覺得社區民眾誤解我所提供的服務	□	□	□	□	□	□	□	□	
5.	我覺得社區民眾對我提供的服務有所批評	□	□	□	□	□	□	□	□	
6.	我覺得社區民眾對我的服務不信任	□	□	□	□	□	□	□	□	
7.	我覺得社區民眾拒絕我的服務	□	□	□	□	□	□	□	□	
8.	我覺得社區民眾不認同我服務的角色	□	□	□	□	□	□	□	□	
9.	我覺得社區民眾對我的服務有不合理的要求	□	□	□	□	□	□	□	□	
	第二部份：志工工作負荷量表(續)	**非常重要**	**重要**	**中立意見**	**不重要**	**非常不重要**	**合適**	**修正後合適**	**不合適**	**修正意見**

10.	我覺得詐騙集團囂張，使我的服務無法順利進行	□	□	□	□	□	□	□	□	
11.	我覺得社區民眾不採納我建議的健康生活型態	□	□	□	□	□	□	□	□	
12.	我覺得社區健康服務項目多，讓我忙不過來	□	□	□	□	□	□	□	□	
13.	我覺得社區民眾認為我所提供的服務項目缺乏創意	□	□	□	□	□	□	□	□	
14.	我覺得我所接受的志工訓練課程，不足以應付社區民眾的健康需求	□	□	□	□	□	□	□	□	
15.	我覺得我所接受的志工訓練課程重複性高	□	□	□	□	□	□	□	□	
16.	我覺得我所接受的志工訓練課程太密集，讓我吸收不良	□	□	□	□	□	□	□	□	
17.	我覺得我所接受的志工訓練內容，讓我難以口語化方式向民眾解釋	□	□	□	□	□	□	□	□	
18.	我覺得我與社區民眾(例如新住民)溝通是困難的	□	□	□	□	□	□	□	□	
	第二部份：志工工作負荷量表(續)	**非常重要**	**重要**	**中立意見**	**不重要**	**非常不重要**	**合適**	**修正後合適**	**不合適**	**修正意見**
19.	我覺得我需要調適類課程納入志工訓練課程	□	□	□	□	□	□	□	□	

20.	我覺得社區志工服務排班難以調度	□	□	□	□	□	□	□	□	
21.	我覺得志工間彼此相處困難	□	□	□	□	□	□	□	□	
22.	我覺得志工年齡層普遍高	□	□	□	□	□	□	□	□	
23.	我覺得志工人數不足	□	□	□	□	□	□	□	□	
24.	我覺得志工福利差	□	□	□	□	□	□	□	□	
25.	我覺得擔任志工隊長職務壓力大	□	□	□	□	□	□	□	□	
26.	我覺得 社區民眾對我的角色不清楚	□	□	□	□	□	□	□	□	
27.	我覺得配偶不支持我做志工服務	□	□	□	□	□	□	□	□	
28.	我覺得家人不支持我做志工服務	□	□	□	□	□	□	□	□	
29.	我覺得社區領導者不支持志工所提供的服務	□	□	□	□	□	□	□	□	
30.	我覺得社區領導者間不能相互合作，影響我志工服務	□	□	□	□	□	□	□	□	

	第二部份：志工工作負荷量表(續)	**非常重要**	**重要**	**中立意見**	**不重要**	**非常不重要**	**合適**	**修正後合適**	**不合適**	**修正意見**
31.	我覺得社區領導者的引導理念與志工的服務理念不合	□	□	□	□	□	□	□	□	
32.	我覺得社區健康服務計畫相關報告難以書寫	□	□	□	□	□	□	□	□	

33.	我覺得社區健康服務經費不足	□	□	□	□	□	□	□	□	
34.	我覺得社區健康服務所使用的檢查工具錯誤率高	□	□	□	□	□	□	□	□	
35.	我覺得中央專責單位輔導人員常更替，使我無所適從	□	□	□	□	□	□	□	□	
36.	我覺得中央專責單位輔導政策多變，使我無所適從	□	□	□	□	□	□	□	□	
37.	我覺得每逢假日難以出席配合各項服務活動	□	□	□	□	□	□	□	□	
38.	我覺得我擔任志工服務需自付額外費用，例如交通費、汽油費等	□	□	□	□	□	□	□	□	
39.	我覺得尋找可搭乘交通工具至服務場所，使我煩憂	□	□	□	□	□	□	□	□	
40.	我覺得我服務的工作危險性高	□	□	□	□	□	□	□	□	
41.	我覺得我服務的熱忱越來越低	□	□	□	□	□	□	□	□	

	第二部份：志工工作負荷量表(續)	**非常重要**	**重要**	**中立意見**	**不重要**	**非常不重要**	**合適**	**修正後合適**	**不合適**	**修正意見**
42.	我覺得我需要時間來調適志工工作上的挫折	□	□	□	□	□	□	□	□	
43.	我覺得提供健康服務時，常讓我身體疲累	□	□	□	□	□	□	□	□	
44.	整體而言，我覺得執行社區服務時，工作負荷程度是	□	□	□	□	□	□	□	□	

沉重的一件事		

.

您若有其他方面的負荷，未被列述於上問卷中，煩請以文字方式描述下列空行中：

謝謝!

感謝您的作答！

The results of item reduction

Mean and SD of single items (1=not very important; 5= very important)

	Mean SD overall	Mean nurse n=5	Mean Expert n=1	Mean Volunteer n=17
B1 community *	4.4 (0.5)	4.2	5	4.4
B2*	4.2 (0.7)	4.2	2	4.4
B3	4.0 (0.6)	3.6	5	4
B4*	4.1 (0.9)	4.4	2	4.2
B5	3.7 (0.8)	4	2	3.7
B6	3.9 (0.7)	4.2	5	3.8
B7	3.7 (1.1)	3.8	1	3.8
B8	3.7 (0.8)	4	2	3.7
B9	3.5 (1.2)	4.4	2	3.4
B10 organisation*	4.0 (0.9)	4	5	3.9
B11 personal	3.7 (0.9)	3.2	5	3.7
B12*	4.0 (0.8)	4.4	4	3.8
B13	3.7 (0.9)	4	1	3.7
B14*	4.3 (0.6)	4.4	5	4.2
B15	3.7 (0.8)	3.2	5	3.8
B16	3.7 (0.9)	3.4	5	3.7
B17	4.0 (0.8)	3.8	5	4.1
B18*	4.0 (1.0)	3.6	2	4.2
B19*	4.0 (0.9)	3.4	5	4.1
B20 family	3.6 (1.0)	3.6	5	3.5
B21	3.7 (1.2)	3.8	1	3.9
B22	3.5 (1.0)	4	1	3.5
B23*	3.8 (1.1)	3.6	5	3.8
B24*	3.1 (1.2)	3.2	1	3.2
B25	3.7 (1.3)	3.6	1	3.8
B26*	3.3 (1.3)	3.8	5	3.1
B27	4.3 (0.8)	4.2	5	4.3
B28*	4.4 (0.8)	4.4	5	4.4
B29	3.6 (1.3)	4.2	5	3.4
B30	4.1 (0.9)	4.4	5	3.9
B31	4.0 (1.1)	4.6	1	4.1
B32	3.7 (1.0)	4.2	5	3.5
B33	4.0 (1.1)	3.6	5	4
B34*	4.0 (0.8)	4	5	3.9
B35	3.8 (0.9)	3.8	5	3.8
B36	3.9 (1.1)	4	1	4
B37*	3.6 (1.0)	4	5	3.4
B38	3.3 (1.3)	3.6	1	3.3
B39	3.2 (1.2)	3.2	5	3.1
B40	3.7 (1.3)	3	1	4.1
B41	3.5 (1.2)	3.4	1	3.7
B42	3.7 (0.8)	3.6	5	3.7
B43	3.3 (0.9)	2.6	5	3.4
B44 general*	3.4 (0.9)	3	5	3.4

Correlation between items within groups and Factor analysis

	Correlated	Factor analysis within grouping	Factor analysis overall
B1 community	B3*		***
B2	B5*	selected	***C2
B3		Selected (less correlation)	
B4	B5***		***C6
B5			
B6	B9*	selected	
B7	B8***; B9***	selected	
B8	B9***		
B9			
B10 organisation	B29*		***C11
B19	B35*, B36*	selected	***C7
B22	B23*, B24**, B29*; B31***		
B23	B31*, B32-B35**		***C12
B24	B31**, B33*		***C1
B29		selected	
B30	B32*		
B31	B32*		
B32	B33*, B34**, B35**	selected	
B33	B34*, B35**		
B34	B35*		***C9
B35	B36*		
B36		selected	
B11 personal	B16**;B17*;B26*, B39*		
B12	B13*; B14**; B18*; B43*	selected	***C10
B13	B18*; B21**; B25*; B40**; B41**; B42*	selected	
B14	B16*; B17**; B18**;		***C8
B15	B21*;; B26*;; B41*		
B16	B17**; B42*; B43*	selected	
B17	B18*; B43**		
B18	B26*; B40**; B41**		***C4
B21	B25***; B40*; B41**	selected	
B25	B40**; B41***		
B26	B39***; B42**	selected	***C3
B39	B42*		
B40	B41***		
B41	B42**		
B42			
B43		selected	
B20 family	B28*; B37**		

B27	B28***		
B28		Selected	***
B37	B38*	Selected	***
B38		Selected	
B44 general		selected	***C5

*p<0.05; **p<0.01; ***p<0.001

Factor analysis using principle component analysis; Number of components decided by % variation explained in total (above 80%); Highest loaded variable per component chosen: (1) per dimension (the feeling of community resident's response, the insufficient supports of organisation and administration, the insufficiency of personal abilities, the lack of dealing with family members and general issue) and (2) overall for all 44 items together.

The feeling of community resident's response: 4 components explaining 86% of total variation

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.562	39.579	39.579	3.562	39.579	39.579
2	1.870	20.781	60.359	1.870	20.781	60.359
3	1.473	16.371	76.730	1.473	16.371	76.730
4	.840	9.328	86.058	.840	9.328	86.058
5	.533	5.923	91.982			
6	.358	3.975	95.956			
7	.155	1.722	97.678			
8	.116	1.290	98.968			
9	.093	1.032	100.000			

Extraction Method: Principal Component Analysis.

Loading:

Component Matrix[a]

	Component			
	1	2	3	4
b_1	-.480	.573	.242	.251
b_2	.494	.288	-.542	.545
b_3	-.415	.598	.332	.322
b_4	.591	.605	-.369	-.206
b_5	.736	.444	-.323	-.284
b_6	.269	.580	.633	-.192
b_7	.865	-.073	.245	.334
b_8	.739	-.434	.272	.280
b_9	.810	-.093	.486	-.159

Extraction Method: Principal Component Analysis.
a. 4 components extracted.

The insufficient supports of organisation and administration 4 components explaining 80% of total variation

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.559	35.071	35.071	4.559	35.071	35.071
2	2.449	18.842	53.912	2.449	18.842	53.912
3	1.842	14.169	68.082	1.842	14.169	68.082
4	1.566	12.049	80.130	1.566	12.049	80.130
5	.616	4.741	84.871			

6	.549	4.221	89.093			
7	.412	3.172	92.265			
8	.291	2.241	94.505			
9	.237	1.826	96.331			
10	.166	1.277	97.609			
11	.147	1.134	98.742			
12	.105	.811	99.554			
13	.058	.446	100.000			

Extraction Method: Principal Component Analysis.

Loading:

Component Matrix[a]

	Component			
	1	2	3	4
b_10	.155	.494	.460	.454
b_19	.107	.119	.839	-.359
b_22	.474	-.801	-.134	.013
b_23	.834	.122	-.156	-.243
b_24	.735	-.416	.140	.214
b_29	-.051	.637	-.054	.620
b_30	.667	.371	-.324	.306
b_31	.640	-.494	-.227	.444
b_32	.837	.153	-.229	-.219
b_33	.790	.298	.162	.102
b_34	.545	.313	-.133	-.565
b_35	.742	.224	.402	-.114
b_36	.187	-.562	.669	.244

Extraction Method: Principal Component Analysis.
a. 4 components extracted.

The insufficiency of personal abilities 6 components to explain 83% of variation

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.523	28.271	28.271	4.523	28.271	28.271
2	3.284	20.527	48.797	3.284	20.527	48.797
3	2.670	16.685	65.482	2.670	16.685	65.482
4	1.080	6.751	72.233	1.080	6.751	72.233
5	.956	5.973	78.206	.956	5.973	78.206
6	.803	5.018	83.224	.803	5.018	83.224
7	.624	3.902	87.126			
8	.537	3.355	90.480			
9	.471	2.942	93.422			
10	.339	2.116	95.538			
11	.237	1.479	97.017			
12	.188	1.177	98.194			
13	.154	.961	99.155			
14	.068	.422	99.578			
15	.049	.307	99.884			
16	.018	.116	100.000			

Extraction Method: Principal Component Analysis.

Loading:

Component Matrix[a]

	Component					
	1	2	3	4	5	6
b_11	-.224	.646	.248	-.042	-.224	-.126
b_12	.466	.453	-.231	-.281	.339	.436
b_13	.807	-.140	.002	.113	.150	.334
b_14	.382	.541	-.343	-.135	-.333	.372
b_15	-.138	.347	-.744	.010	.349	-.057
b_16	-.071	.857	.170	.078	-.233	-.086
b_17	.235	.782	-.107	.425	-.072	.020
b_18	.693	.316	-.154	-.231	-.348	-.197
b_21	.703	-.105	.458	.459	.021	.004
b_25	.748	-.131	.449	.267	.122	-.017
b_26	-.399	.200	.768	-.113	.074	.303
b_39	-.251	.345	.722	-.413	.143	-.020
b_40	.715	.025	.325	-.398	.184	-.225
b_41	.872	-.081	.185	-.105	-.148	-.101
b_42	-.555	.365	.386	.294	.105	.138
b_43	.206	.676	-.081	.083	.498	-.353

Extraction Method: Principal Component Analysis.
a. 6 components extracted.

The lack of dealing with family members: 3 components to explain 87.8% of total variance

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.216	44.321	44.321	2.216	44.321	44.321
2	1.393	27.863	72.184	1.393	27.863	72.184
3	.784	15.670	87.854	.784	15.670	87.854
4	.413	8.254	96.108			
5	.195	3.892	100.000			

Extraction Method: Principal Component Analysis.

Loading:

Component Matrix[a]

	Component		
	1	2	3
b_20	.726	.195	-.587
b_27	.662	-.621	.176
b_28	.794	-.499	.047
b_37	.583	.681	-.105
b_38	.531	.507	.629

Extraction Method: Principal Component nalysis.
a. 3 components extracted.

OVERALL: 12 components to explain 92.8% of total variability

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	10.286	23.376	23.376	10.286	23.376	23.376
2	7.525	17.101	40.478	7.525	17.101	40.478
3	5.890	13.387	53.864	5.890	13.387	53.864

4	3.699	8.406	62.271	3.699	8.406	62.271
5	3.089	7.020	69.291	3.089	7.020	69.291
6	2.469	5.611	74.901	2.469	5.611	74.901
7	1.971	4.479	79.380	1.971	4.479	79.380
8	1.566	3.559	82.939	1.566	3.559	82.939
9	1.451	3.298	86.238	1.451	3.298	86.238
10	1.105	2.511	88.748	1.105	2.511	88.748
11	1.025	2.330	91.078	1.025	2.330	91.078
12	.773	1.756	92.834	.773	1.756	92.834
13	.672	1.527	94.361			
14	.552	1.256	95.616			
15	.464	1.055	96.671			
16	.378	.859	97.530			
17	.304	.690	98.220			
18	.255	.579	98.798			
19	.176	.400	99.198			
20	.156	.354	99.552			
21	.110	.249	99.801			
22	.088	.199	100.000			
23	9.193E-16	2.089E-15	100.000			
24	6.565E-16	1.492E-15	100.000			
25	5.716E-16	1.299E-15	100.000			
26	5.308E-16	1.206E-15	100.000			
27	4.038E-16	9.177E-16	100.000			
28	3.600E-16	8.181E-16	100.000			
29	2.069E-16	4.702E-16	100.000			
30	1.581E-16	3.593E-16	100.000			
31	5.629E-17	1.279E-16	100.000			
32	2.110E-17	4.795E-17	100.000			
33	-1.847E-18	-4.199E-18	100.000			
34	-2.911E-17	-6.616E-17	100.000			
35	-1.263E-16	-2.870E-16	100.000			
36	-1.998E-16	-4.540E-16	100.000			
37	-2.631E-16	-5.979E-16	100.000			
38	-3.146E-16	-7.150E-16	100.000			
39	-3.728E-16	-8.474E-16	100.000			
40	-4.088E-16	-9.291E-16	100.000			
41	-5.385E-16	-1.224E-15	100.000			
42	-5.992E-16	-1.362E-15	100.000			
43	-6.766E-16	-1.538E-15	100.000			
44	-7.949E-16	-1.807E-15	100.000			

Appendix F: Informed Consent Form-Phase Two-Step Two and Three

English version

INFORMED CONSENT FORM-Stage two -Appendix F

PRINCIPAL INVESTIGATOR	**Yueh Mei Gau**
PROJECT TITLE:	**The measurement of the burden experienced by community health volunteers in Taiwan**
SCHOOL	**School of Nursing, Midwifery and Nutrition**

I understand the aim of this research study is to explore the burden related to being a health promotion volunteer in Taiwan. I consent to participate in this project, the details of which have been explained to me, and I have been provided with a written information sheet to keep.

I understand that my participation will involve a questionnaire **and I agree that the researcher may use the results as described in the information sheet.**

I acknowledge that:

- any risks and possible effects of participating in the questionnaire have been explained to my satisfaction;
- taking part in this study is voluntary and I am aware that I can stop taking part in it at any time without explanation or prejudice and to withdraw any unprocessed data I have provided;
- that any information I give will be kept strictly confidential and that no names will be used to identify me with this study without my approval;
-

(Please tick to indicate consent)

I consent to be interviewed		**Yes**		**No**
I consent to complete a questionnaire		**Yes**		**No**

Name: *(printed)*	
Signature:	**Date:**

The Burden Index of Community Health Volunteers

Dear volunteer:

This questionnaire is designed to understand how you feel about your work as a health promotion volunteer in the community. It is being designed and distributed as part of a PhD study at James Cook University (JCU), Queensland, Australia, under the supervision of Professor Kim Usher. The project has ethical approval from the JCU Human Ethics Research Committee and the Institutional Review Board (the IRB) of Chang Gung Medical Foundation in Taiwan. The results from the study will provide information from which future improvements can be designed to help increase participation in health promotion volunteer work and to improve the role and satisfaction of volunteers.

PART 1: Asks questions related to your background, experience and current role. These questions have tick boxes for you to indicate your choice.

PART 2: Asks questions related to the burden of work as a health promotion volunteer. This section has five different frequency descriptions after each item, from never, seldom, sometimes, often or nearly always.
Please place a tick (√) next to each item which coincides with your current situation.

When you have completed the questionnaire, please place it in the envelope provided. Thank for your opinions and participation.

If you have any questions about the study, please contact the researcher's e-mail :

yuehmei.gau@jcu.edu.au or cell phone : 0939-654724 Or the supervisor:

kim.usher@jcu.edu.au.

Or mail to: Yueh-Mei, Gau. Address: 6F, No. 30, Lane 44, He-Xing Rd, Wen-Shan District, Taipei city, 116, Taiwan, R.O.C.

Part 1: Background of volunteer

✵Social-demographic information

1. Sex: ☐male ☐female
2. Age:____years old
3. Level of education: total ____years
   ☐Under or Elementary School ☐ Junior High School
   ☐ Senior High School ☐ College/university or above

4. Religion: ☐none ☐Buddhist ☐Taoist ☐Christine ☐Islam
5. Main language (The language that you usually use in daily life, multiple selected) ☐Mandarin ☐Holo ☐Hakka ☐Other (please indicate): _____
6. Current occupation (multiple choice):
   ☐Profession ☐Administrator ☐Assistance ☐Technician ☐non-Technician
   ☐Farmer ☐ Soldier ☐Government employee ☐School teacher ☐Labourer
   ☐Business ☐Service Industry ☐Freelance ☐ Housework ☐Unemployed
7. Situation of occupation:
   ☐Regular schedule and location ☐ Irregular location
   ☐ Irregular schedule ☐ Irregular for both schedule and location
8. Marital status: ☐ Unmarried/single ☐ Married/cohabited
   ☐Divorced/Separated ☐ Widow/Widower
9. Compare to similarly aged people, how is your current health status?
   ☐very well ☐well ☐good ☐not well ☐not very well
10. Economic condition: ☐completely sufficient ☐sufficient ☐enough
    ☐insufficient
11. Who lives with you? (Please mark all that apply and circle the most important relationships if more than one category applies to you)
    ☐I live alone
    I live with: ☐ My spouse ☐ My offspring ☐ My parent(s) ☐ My relative ☐ My friend(s)

12. Extent of residency in this community:____years____months

13. Place of residence:_____district_____county

❋*Experiences of health promotion volunteers*

14. Time spent as health promotion volunteer: :____years_____months
15. Average service hours per week (including traffic time):_____hours
16. Average number of people serviced per week:_____persons
17. What kind of volunteering job in the community health development do you do? (Please describe):

18. How were you recruited to the position? (Please describe):

19. Have you ever been being any other kind of volunteer?☐no ☐yes

If you answer **yes**, please answer **19-1 and 19-2**

19-1 What kind of volunteer service?	19-2 How long have you been a volunteer in this service?
(1)	(1) ____years____months
(Please describe)	
(2)	(2) ____years____months
(Please describe)	

Part 2: The burden of work as a community health volunteer.

	never	seldom	Some-times	often	Nearly always
1. I feel the low participation by the community residents in planned healthcare activities impacts on my role.	☐	☐	☐	☐	☐
2. I feel I lack support from members of the community residents in carrying out my role	☐	☐	☐	☐	☐
3. Misunderstanding by the community residents about the health service availability affects my role.	☐	☐	☐	☐	☐
4. I feel the presence of criminal groups in Taiwan makes my role as a health care volunteer more difficult.	☐	☐	☐	☐	☐
5. An adaptation course would help me to conduct my role.	☐	☐	☐	☐	☐
6. I feel the lack of volunteers makes my role more difficult.	☐	☐	☐	☐	☐
7. I feel the benefits for volunteers are adequate.	☐	☐	☐	☐	☐
8. I feel my role is affected by missing or broken equipment.	☐	☐	☐	☐	☐
9. I feel the difficulty associated with completing the required paper work impacts on my role.	☐	☐	☐	☐	☐
10. I feel the frequent change of supervising strategies of the health government impacts on my role.	☐	☐	☐	☐	☐
11. I feel that I have too many community activities to conduct to be effective.	☐	☐	☐	☐	☐
12. I feel the courses provided for volunteers did not adequately prepare me for the health problems I manage.	☐	☐	☐	☐	☐
13. I find difficult it difficult to communicate among some of the community residents, such as immigrant residents, and this makes my role harder.	☐	☐	☐	☐	☐
14. I am unclear about the expectations of my role.	☐	☐	☐	☐	☐
15. I feel lack of communication and/or interaction with other volunteers makes my role more difficult.	☐	☐	☐	☐	☐
16. I feel that the dangers associated with the health services and home care impact on my role.	☐	☐	☐	☐	☐
17. I feel physically exhausted due to my volunteer role.	☐	☐	☐	☐	☐
18. I feel the lack support of my family makes my role more difficult.	☐	☐	☐	☐	☐
19. I feel it is difficult to arrange health schedules during holidays.	☐	☐	☐	☐	☐
20. Overall, I feel the burden associated with the volunteer's role is heavy.	☐	☐	☐	☐	☐

Are there any other issues associated with being a volunteer that you wish to add?

Thank you for taking the time to assist with the research

Chinese version

長庚技術學院
受訪同意書

一、試驗主題

社區健康促進活動志工工作負荷經驗工具發展及測量

二、簡介

社區健康促進志工在社區中熱心協助及宣導健康的重要性，除身體力行外且能督促民眾執行健康生活方式，促進居民遠離慢性病與心理不適的威脅，成為社區居民健康生活方式的模範，帶給社區活力、安全、健康的環境。但此工作執行，相信志工們有不同層次之困難，因此個人希望瞭解您在執行健康生活方式宣導工作之負荷情形為何，並設計出健康促進志工工作負荷之問卷，協助衛生局與衛生所護理人員能清楚評估熱心從事志工的工作負荷，以提供適切的協助與服務。

三、試驗目的

透過本研究，期望瞭解您在當地社區執行健康促進活動的各種經驗，如參與動機、如何加入、參與健康促進活動喜樂感及困難等感受。

四、試驗方法與程序說明

本研究共兩年，共分五個階段，此為第三階段，是將所第二階段訪談後修正之工作負荷問卷，訪談四十位參與者，參與者完全是志願的，此次參與受訪者是不同於第一及第二階段參與者，由研究者面對面將問卷逐一訪談 30 分鐘，以確認所修正之問卷，能評估社區健康促進志工工作困難陳述。本研究完全依照澳洲大學人類研究倫理委員會及長庚紀念醫院人體試驗研究倫理委員會相關規定執行，所問的問題不涉及各位隱私，訪談的問卷也一律妥善保存於研究者就讀學校研究單位的櫃子並上鎖，研究的結果與報告也不會呈現受訪者的身分。

五、可能產生之副作用及危險

訪談中如果有任何讓您覺得不方便回答的問題，您可以不必回答。任何您所提供的資訊不會被認出您個人身分，隱私權都將被保護，除非徵得您的同意，否則不會被透露。您所回答的內容，在論文口頭或書面發表時，均也不會列出您的姓名，您決定參加與否不會影響任何醫療照護機構對您的服務，也不會影響您和衛生所醫護人員的關係。

六、預期試驗效果

期望能瞭解當您在執行健康生活方式宣導工作時，所面臨的困難程度為何。並設計出能評估健康促進志工工作負荷之問卷，能讓社區衛生護理人員能即時且清楚評估志工的工作負荷，得以提供協助及加強志工在在地社區所提供的健康促進活動服務。

七、緊急狀況之處理

受訪過程中，若您感到任何不適，將立即中止訪談，並提供必要之協助。若因為參與本研究而造成您身體上的任何損害，研究主持人高月梅將會提供您完善的醫療照護，24 小時聯絡電話：0939-654724。

八、受試者權益

11. 費用負擔：您無須負擔試驗費用。
12. 損害賠償：如果是因為訪談造成您的損害，長庚技術學院及計畫主持人將依中華民國法令賠償責任。
13. 保護隱私
    a. 一個編號代碼將代表您的身分，此代碼不會顯示您的姓名、身分證字號、住址。

b. 對於您受訪的結果及診斷，試驗主持人將持保密的態度。除了有關機關依法調查外，試驗主持人會小心維護您的隱私。

c. 行政院衛生署與本院人體試驗倫理委員會在不危害您隱私的情況下，得以檢視您的資料。

14. 如本計畫成果產生學術文獻發表、實質效益或衍生其他權益時，亦同意無償捐贈給本院作為疾病預防、診斷及治療等公益用途。

15. 受試者或立同意書人有權在無任何理由情況下，隨時要求終止參與試驗。

九、研究者聯絡方式

如果您有任何有關此研究的問題與疑慮，可以隨時聯絡我，我的聯絡電話是 0939654724 或用電子郵件和我聯繫，我的電子郵件信箱是 yuehmei.gau@jcu.edu.au 或 ymgau@mail.cgit.edu.tw；您也可以用英文直接和我的指導教授 Usher 博士聯繫，她的電子郵件信箱是 kim.usher@jcu.edu.au。

本研究內容及同意書，已經由高月梅完整口頭告知及說明，受訪者本人已充分瞭解並同意。

受試者　：_____　　手機號碼：_____

試驗主持人：_____(簽名)　日期：____年____月____日

第一部份：人口學資料：

1. 您的性別：□①男 □②女

2. 年齡：_____歲（足歲）

3. 教育程度：□①國小或以下 □②初中、國中 □③高中、高職

□④專科 □⑤大學 □⑥研究所或以上

4. 宗教：□①無 □②佛教 □③道教 □④基督天主教 □⑤回教 □⑥一貫道

5. 語言：□①國語 □②閩南 □③客家 □④其他_____(請描述)

6. 目前職業：(可複選)

□①專業性工作人員 □②行政人員 □③助理人員 □④技術性工作人員

□⑤非技術性工作人員 □⑥農漁夫 □⑦軍 □ ⑧公務人員 □⑨教師

□⑩工 □11商 □12服務業 □13自由業 □14家管□ 15無□

7. 工作情況-- □①固定場所及時間 □②不固定場所 □③不固定時間

□④不固定場所及時間

8. 婚姻狀況：□①未婚/單身□②已婚配偶還在□③離婚或分居□④喪偶

9. 跟同年齡比較，您覺得自己的健康狀況如何？

□①很健康 □②健康 □③普通 □④不健康 □⑤很不健康

10. 經濟狀況：□①很充裕 □②充裕 □③普通 □④不足 □⑤很不足

11. 居住狀況：□①獨居 □②僅夫妻二人同住 □③固定與(孫)子女或親友同住

□④到子女家中輪流居住 □⑤三代同堂

12. 您在本社區(里、村)居住時間：_____年_____個月

13. 您現居住於_____縣(市)_____鄉、鎮、市

14. 您擔任保健志工時間：_____年_____個月

15. 您每週平均服務時數(包括交通時間)：_____小時

16. 您每週平均服務人數：_____人

17. 您擔任社區健康營造中心或保健志工職務為:

(或社區發展協會或婦女會或家政班…等之職務皆可填入)

18. 您是經由何種招募途徑參與社區服務志工？

□①自願 □②鄉鎮市代表 □③村長 □④社區發展協會相關監理事

□⑤婦女會 □⑥家政班 □⑦衛生所 □⑧鄰居或家人

□⑨ 其他_____(請描述)

19. 請問您是否還擔任其他類別之志工?

□①否 □②是，若是，請填答 19-1 及 19-2 題

19-1 志工性質　　19-2 擔任時間

(1)_____；_____年_____個月

(2)_____；_____年_____個月

(3)_____；_____年_____個月

※第二部分: 志工工作負荷量表

親愛的保健志工：

此份問卷主要瞭解您在執行社區健康促進活動時的感受，在每個敘述後面，依發生的頻率，有五種不同的選項，從不、很少如此(一個月幾次)、有時候(一週 1-2 次)、經常如此(一週 3 次以上)或總是如此(幾乎每次)。請依您的感覺，選出您認為最符合當前的情況，而您的意見有助於研究人員清楚評估志工的工作負荷，得以提供社區衛生護理人員推展保健志工之協助，並加強志工在在地社區所提供的健康促進活動服務。感謝您的意見！

		負荷指數程度				
題號	項目	從不	很少如此	有時候	經常如此	總是如此
1	我覺得社區民眾參與度不高……	□	□	□	□	□
2	我覺得社區民眾不支持我的服務……	□	□	□	□	□
3	我覺得社區民眾誤解我所提供的服務…	□	□	□	□	□
4	我覺得我提供服務的時間和社區民眾的時間無法配合……	□	□	□	□	□
5	我覺得詐騙集團囂張，使我的服務無法順利進行……	□	□	□	□	□
6	我覺得我需要調適類課程納入志工訓練課程	□	□	□	□	□
7	我覺得志工人數不足……	□	□	□	□	□
8	我覺得志工福利差……	□	□	□	□	□

負荷指數程度

	項目	從不	很少如此	有時候	經常如此	總是如此
9	我覺得社區健康服務所使用的檢查工具錯誤率高.....	□	□	□	□	□
10	我覺得社區領導者的引導理念與志工的服務理念不合.....	□	□	□	□	□
11	我覺得社區健康服務計畫相關報告難以書寫	□	□	□	□	□
12	我覺得中央專責單位輔導人員常更替，使我無所適從.....	□	□	□	□	□
13	我覺得社區健康服務項目多，讓我忙不過來	□	□	□	□	□
14	我覺得我所接受的志工訓練課程，不足以應付社區民眾的健康需求.....	□	□	□	□	□
15	我覺得與社區民眾(例如新住民)溝通是困難的	□	□	□	□	□
16	我覺得社區民眾對我的角色不清楚.....	□	□	□	□	□
17	我覺得志工間彼此相處困難.....	□	□	□	□	□
18	我覺得家人不支持我做志工服務.....	□	□	□	□	□
19	我覺得每逢假日難以出席配合各項服務活動	□	□	□	□	□
20	整體而言，我覺得執行社區服務時，工作負荷程度是沉重的一件事.....	□	□	□	□	□

若有其他方面的負荷，未被列述於問卷中，煩請描述下列空行中：

全部題目到此結束，麻煩再檢查一次，非常感謝您的協助！祝萬事如意！！

Appendix G: List of Experts for Content Validity

1. The list of clinical nursing experts for assisting with tool content validity (n=9)

	Position
Chia, Shu-li	Chief of the Health Management Section of the Public Health Bureau, Taipei County Government
Chen, Ming-Fang	Coordinator of the Health Management Section of the Public Health Bureau, Taipei County Government
Zhuo, Ya-Fen	Coordinator of the Health Management Section of the Public Health Bureau, Taoyuan County Government
Hsiao, Ya-Chu	Associate Professor, Director of Technology Cooperation of Chang-Gung Institute of Technology
Chang, Shu-Hung	Associate Professor, Director of Department of Nursing of Chang-Gung Institute of Technology
Shung, Shu-Hui	Lecturer, Deputy Director of Department of Nursing of Chang-Gung Institute of Technology
Hsiao, Ping-Ju	Lecturer of Department of Nursing of Chang-Gung Institute of Technology
Wu, Li-Yu	Lecturer of Department of Nursing of Chang-Gung Institute of Technology
Lu, Jin-Yi	Chief of the Community Health Promotion Development Centre and Director of Administration and Nursing Department of Min-Sheng General Hospital

2. The result of burden scale content validity by experts (n=9)

No. of item	Expert comment			result			
	appropriate	Appropriate after modifying	In-appropriate	CVI %	reserve	revise	delete
1	9	0	0	100	*		
2	9	0	0	100	*		
3	9	0	0	100	*		
4	9	0	0	100	*		
5	3	4	2	33		*	
6	8	1	0	89		*	
7	6	2	1	67		*	
8	7	2	0	78		*	
9	7	2	0	78		*	
10	9	0	0	100	*		
11	9	0	0	100	*		
12	8	1	0	89		*	
13	5	3	1	56		*	
14	8	1	0	89		*	
15	9	0	0	100	*		
16	8	1	0	78		*	
17	9	0	0	100	*		
18	9	0	0	100	*		
19	7	2	0	78		*	
20	7	2	0	78		*	

長庚技術學院

受訪同意書　　第二階段

一、試驗主題

社區健康促進活動志工工作負荷經驗工具發展及測量

二、簡介

社區健康促進志工在社區中熱心協助及宣導健康的重要性，除身體力行外且能督促民眾執行健康生活方式，促進居民遠離慢性病與心理不適的威脅，成為社區居民健康生活方式的模範，帶給社區活力、安全、健康的環境。但此工作執行，相信志工們有不同層次之困難，因此個人希望瞭解您在執行健康生活方式宣導工作之負荷情形為何，並設計出健康促進志工工作負荷之問卷，協助衛生局與衛生所護理人員能清楚評估熱心從事志工的工作負荷，以提供適切的協助與服務。

三、試驗目的

透過本研究，期望瞭解您在當地社區執行健康促進活動的各種經驗，如參與動機、如何加入、參與健康促進活動喜樂感及困難等感受。

四、試驗方法與程序說明

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六、預期試驗效果

期望能瞭解當您在執行健康生活方式宣導工作時，所面臨的困難程度為何。並設計出能評估健康促進志工工作負荷之問卷，能讓社區衛生護理人員能即時且清楚評估志工的工作負荷，得以提供協助及加強志工在在地社區所提供的健康促進活動服務。

七、緊急狀況之處理

受訪過程中，若您感到任何不適，將立即中止訪談，並提供必要之協助。若因為參與本研究而造成您身體上的任何損害，研究主持人高月梅將會提供您完善的醫療照護，24 小時聯絡電話：0939-654724。

八、受試者權益

1. 費用負擔：您無須負擔試驗費用。
2. 損害賠償：如果是因為訪談造成您的損害，長庚技術學院及計畫主持人將依中華民國法令賠償責任。
3. 保護隱私
   - 一個編號代碼將代表您的身分，此代碼不會顯示您的姓名、身分證字號、住址。

- 對於您受訪的結果及診斷，試驗主持人將持保密的態度。除了有關機關依法調查外，試驗主持人會小心維護您的隱私。

4. 行政院衛生署與本院人體試驗倫理委員會在不危害您隱私的情況下，得以檢視您的資料。

- 如本計畫成果產生學術文獻發表、實質效益或衍生其他權益時，亦同意無償捐贈給本院作為疾病預防、診斷及治療等公益用途。
- 受試者或立同意書人有權在無任何理由情況下，隨時要求終止參與試驗。

九、研究者聯絡方式

如果您有任何有關此研究的問題與疑慮，可以隨時聯絡我，我的聯絡電話是 0939654724 或用電子郵件和我聯繫，我的電子郵件信箱是 yuehmei.gau@jcu.edu.au 或 ymgau@mail.cgit.edu.tw；您也可以用英文直接和我的指導教授 Usher 博士聯繫，她的電子郵件信箱是 kim.usher@jcu.edu.au

本研究內容及同意書，已經由高月梅完整口頭告知及說明，受訪者本人已充分瞭解並同意。

受試者　：_____　　手機號碼：_____

試驗主持人：_____(簽名)　日期：____年____月____日

※第一部分人口學資料：

	合適	修正後合適	不合適	修正意見
1. 您的性別：□①男 □②女	□	□	□	
2. 年齡：_____歲（足歲）	□	□	□	
3. 教育程度：□①國小或以下□②初中、國中□③高中、高職□④專科□⑤大學□⑥研究所或以上	□	□	□	
4. 宗教：□①無 □②佛教 □③道教 □④基督天主教 □⑤回教 □⑥一貫道	□	□	□	
5. 語言：□①國語 □②閩南 □③客家 □④其他_____(請描述)	□	□	□	
6. 目前職業：(可複選) □①專業性工作人員□②行政人員□③助理人員□④技術性工作人員□⑤非技術性工作人員□⑥農漁夫□⑦軍□⑧公□⑨教師□⑩工□11商□12服務業□13自由業□14家管□15無	□	□	□	
7. 工作情況：□①固定場所及時間□②不固定場所□③不固定時間□④不固定場所及時間	□	□	□	
8. 婚姻狀況：□①未婚/單身□②已婚配偶還在□③離婚或分居□④喪偶	□	□	□	

	合適	修正後合適	不合適	修正意見
9. 跟同年齡比較，您覺得自己的健康狀況如何？□①很健康 □②健康 □③普通 □④不健康 □⑤很不健康	□	□	□	
10. 經濟狀況：□①很充裕 □②充裕 □③普通 □④不足 □⑤很不足	□	□	□	
11. 居住狀況：□①獨居 □②僅夫妻二人同住 □③固定與(孫)子女或親友同住 □④到子女家中輪流居住 □⑤三代同堂	□	□	□	
12. 您在本社區(里、村)居住時間： 年 _____個月	□	□	□	
13. 您現居住於_____縣(市) _____鄉、鎮、市	□	□	□	
14. 您擔任保健志工時間：_____年 _____個月	□	□	□	
15. 您每週平均服務時數(包括交通時間)： 小時	□	□	□	
16. 您每週平均服務人數：_____人	□	□	□	
17. 您擔任社區健康營造中心或保健志工職務為(或社區發展協會或婦女會或家政班…等之職務皆可填入):	□	□	□	

	合適	修正後合適	不合適	修正意見
18. 您是經由何種招募途徑參與社區服務志工？□①自願□②鄉鎮市代表□③村長□④社區發展協會相關監理事□⑤婦女會□⑥家政班□⑦衛生所□⑧鄰居或家人□⑨其他(請描述)	□	□	□	
19. 請問您是否還擔任其他類別之志工? □①否 □②是，若是，請填答 19-1 及 19-2 題 19-1 志工性質 19-2 擔任時間 (1)_____；____年____個月 (2)_____；____年____個月 (3)_____；____年____個月	□	□	□	_____

請續下頁作答，謝謝!

第二部份：志工工作負荷量表

此份問卷主要瞭解您在執行社區健康促進活動時，擔任志工工作(角色)會遇到的困難或負荷。在每個敘述後面，依發生的頻率，有五個不同的選項，從不、很少如此(一個月幾次)、有時候(一週 1 次)、經常如此(一週 2-3 次以上)及總是如此(幾乎每次)。請依您的感覺，選出您認為最符合當前的情況，您的意見有助於社區衛生護理人員確實評估志工的工作負荷，期能協助志工順利推展在地社區健康促進活動與服務。感謝您！***敬祝　　健 康 ！！***

	項目	合適	修正後合適	不合適	修正意見
1	我覺得社區民眾參與度不高……	□	□	□	
2	我覺得社區民眾不支持我的服務…	□	□	□	
3	我覺得社區民眾誤解我所提供的服務…	□	□	□	
4	我覺得詐騙集團囂張，使我的服務無法順利進行……	□	□	□	
5	我覺得我所接受的志工訓練課程，無法協助我自我調適……	□	□	□	
6	我覺得志工招募不易……	□	□	□	
7	我覺得志工福利差……	□	□	□	
8	我覺得社區健康服務所使用的檢查工具錯誤率高……	□	□	□	
9	我覺得社區健康服務計畫相關報告難以書寫	□	□	□	
	項目	合	修正	不合	修正

		適	後合適	適	意見
10	我覺得中央專責單位輔導政策多變，使我無所適從.....	□	□	□	
11	我覺得社區健康服務項目多，讓我忙不過來	□	□	□	
12	我覺得我所接受的志工訓練課程，不足以應付社區民眾的健康需求.....	□	□	□	
13	我覺得我與社區民眾(例如新住民)溝通是困難的.....	□	□	□	
14	我覺得自己對我的志工角色不清楚.....	□	□	□	
15	我覺得志工間彼此相處困難.....	□	□	□	
16	我覺得我服務的工作危險性高.....	□	□	□	
17	我覺得提供健康服務時，常讓我身體疲累	□	□	□	
18	我覺得家人不支持我做志工服務.....	□	□	□	
19	我覺得在假日難以配合各項服務活動	□	□	□	
20	整體而言，我覺得執行社區服務時，志工工作本身負荷是沉重的.....	□	□	□	

若有其他方面的負荷，未被列述於問卷中，煩請描述下列空行中：

全部題目到此結束，麻煩再檢查一次，非常感謝您的協助！祝萬事如意！！

Appendix H: Informed Consent Form-Survey

English version

INFORMED CONSENT FORM-Stage two-version 3-Final-Appendix H

PRINCIPAL INVESTIGATOR	**Yueh Mei Gau**
PROJECT TITLE:	**The measurement of the burden experienced by community health volunteers in Taiwan**
SCHOOL	**School of Nursing, Midwifery and Nutrition**

I understand the aim of this research study is to explore the burden related to being a health promotion volunteer in Taiwan. I consent to participate in this project, the details of which have been explained to me, and I have been provided with a written information sheet to keep.

I understand that my participation will involve a questionnaire **and I agree that the researcher may use the results as described in the information sheet.**

I acknowledge that:

- any risks and possible effects of participating in the questionnaire have been explained to my satisfaction;
- taking part in this study is voluntary and I am aware that I can stop taking part in it at any time without explanation or prejudice and to withdraw any unprocessed data I have provided;
- that any information I give will be kept strictly confidential and that no names will be used to identify me with this study without my approval;
-

(Please tick to indicate consent)

I consent to be interviewed		**Yes**		**No**
I consent to complete a questionnaire		**Yes**		**No**

Name: *(printed)*	
Signature:	**Date:**

The Work Burdens Index of Community Health Volunteers

Dear volunteer:

This questionnaire is designed to understand how you feel about your work as a health promotion volunteer in the community. It is being designed and distributed as part of a PhD study at James Cook University (JCU), Queensland, Australia, under the supervision of Professor Kim Usher. The project has ethical approval from the JCU Human Ethics Research Committee and the Institutional Review Board (the IRB) of Chang Gung Medical Foundation in Taiwan. The results from the study will provide information from which future improvements can be designed to help increase participation in health promotion volunteer work and to improve the role and satisfaction of volunteers.

PART 1: Asks questions related to your background, experience and current role. These questions have tick boxes for you to indicate your choice.

PART 2: Asks questions related to the burdens of work as a health promotion volunteer. This section has five different frequency descriptions after each item, from never, seldom, sometimes, often or nearly always.
Please place a tick (√) next to each item which coincides with your current situation.

When you have completed the questionnaire, please place it in the envelope provided. Thank for your opinions and participation.

If you have any questions about the study, please contact the researcher's e-mail : yuehmei.gau@jcu.edu.au or cell phone : 0939-654724 Or the supervisor: kim.usher@jcu.edu.au.
Or mail to: Yueh-Mei, Gau. Address: 6F, No. 30, Lane 44, He-Xing Rd, Wen-Shan District, Taipei city, 116, Taiwan, R.O.C.

Part 1: Background of volunteer

❋*Social-demographic information*

1. Sex: ☐male ☐female
2. Age:____years old
3. Level of education: total ____years

   ☐ Under or Elementary School ☐ Junior High School

   ☐ Senior High School ☐ College/university or above
4. Religion: ☐none ☐Buddhist ☐Taoist ☐Christian ☐Catholic ☐Islam

   ☐other_____.
5. Main language (The language that you usually use in daily life, multiple selected) ☐Mandarin ☐Holo ☐Hakka ☐Other (please indicate): _____
6. Current occupation (multiple choice):

   ☐Profession ☐Administrator ☐Assistance ☐Technician ☐non-Technician ☐Farmer ☐ Soldier ☐Government employee ☐School teacher ☐Labourer ☐Business ☐Service Industry ☐Freelance ☐Housework ☐Retirement ☐Unemployed
7. Situation of occupation:

   ☐ Regular schedule and location ☐ Irregular location ☐ Irregular schedule ☐ Irregular for both schedule and location
8. Marital status:

   ☐ Unmarried/single ☐ Married/De-facto ☐Divorced/Separated ☐Widow/Widower
9. Compare to similarly aged people, how is your current health status?

   ☐very well ☐well ☐good ☐not well ☐not very well

10. Economic condition: ☐completely sufficient ☐sufficient ☐enough ☐insufficient
11. Who lives with you? (Please mark all that apply and circle the most important relationships if more than one category applies to you)

    ☐ I live alone

    I live with: ☐ My spouse ☐ My offspring(s) ☐ My parent(s) ☐ My relative ☐ My friend(s)

12. Extent of residency in this community:___years____months

13. Place of residence:_____district (township)_____county

❋*Experiences of health promotion volunteers*

14. Time spent as health promotion volunteer: :____years_____months

15. Place of voluntary service:_____district (township)_____county

16. Average service hours per week (including traffic time):_____hours

17. Average number of people serviced per week:_____persons
18. What kind of volunteering job in the community health development do you do?

    ☐ Member ☐ paperwork team ☐ financial management team ☐ leader ☐ chief or director ☐ other (please describe):_____.

19. How were you recruited to the position? (multiple choices)

☐ voluntary ☐ from the councillor of township ☐ from the chief of village or the director of the Community Health Promotion Development Centre

☐ from member of the Public Health Centre

☐ from family member or neighbour ☐ other organisation (please describe):

i. ₁

20. Have you ever been being any other kind of volunteer? ☐no ☐yes

If you answer yes, please answer the below table

	Kind of volunteer	Time spend	Average service hours per week
☐	①Community environment protection	yrs mons	
☐	②Community guard	yrs mons	
☐	③School volunteer	yrs mons	
☐	④Public Health Centre volunteer	yrs mons	
☐	⑤Hospital volunteer	yrs mons	
☐	⑥Temple or church volunteer	yrs mons	
☐	⑦Cherish organisation volunteer	yrs mons	
☐	⑧Other government volunteer	yrs mons	
☐	⑨ Other (please describe):_____.	yrs mons	

21. "I am planning to stay on as a community health promotion volunteer."

☐ Strongly agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly disagree

Part 2: The burden experienced as a community health volunteer

	never	seldom	Some-times	often	Nearly always
1. I feel the low participation by the community residents in planned healthcare activities impacts on my role.	☐	☐	☐	☐	☐
2. I feel I lack support from members of the community residents in carrying out my role	☐	☐	☐	☐	☐
3. Misunderstanding by the community residents about the health service availability affects my role.	☐	☐	☐	☐	☐
4. I feel the presence of criminal groups in Taiwan makes my role as a health care volunteer more difficult.	☐	☐	☐	☐	☐
5. I feel the adaptation courses provided for volunteers did not adequately help me to conduct my role.	☐	☐	☐	☐	☐
6. I feel the lack of volunteers makes my role more difficult.	☐	☐	☐	☐	☐
7. I feel the benefits for volunteers are inadequate.	☐	☐	☐	☐	☐
8. I feel my role is affected by missing or broken equipment.	☐	☐	☐	☐	☐
9. I feel the difficulty associated with completing the required paper work impacts on my role.	☐	☐	☐	☐	☐
10. I feel the frequent change of supervising strategies of the health government impacts on my role.	☐	☐	☐	☐	☐
11. I feel that I have too many community activities to conduct to be effective.	☐	☐	☐	☐	☐

	never	seldom	Some-times	often	Nearly always
12. I feel the courses provided for volunteers did not adequately prepare	☐	☐	☐	☐	☐

me for the health problems I manage.					
13. I find it difficult to communicate with some of the community residents, such as immigrant residents, and this makes my role harder.	☐	☐	☐	☐	☐
14. I am unclear about the expectations of my role.	☐	☐	☐	☐	☐
15. I feel lack of communication and/or interaction with other volunteers makes my role more difficult.	☐	☐	☐	☐	☐
16. I feel that the dangers associated with the health services and home care impact on my role.	☐	☐	☐	☐	☐
17. I feel physically exhausted due to my volunteer role.	☐	☐	☐	☐	☐
18. I feel the lack support of my family makes my role more difficult.	☐	☐	☐	☐	☐
19. I feel it is difficult to arrange health schedules during holidays.	☐	☐	☐	☐	☐
20. Overall, I feel the burden associated with the volunteer's role is heavy.	☐	☐	☐	☐	☐

Are there any other issues associated with being a volunteer that you wish to add?

_____.

Thank you for taking the time to assist with the research!

Chinese version

長庚技術學院

受訪同意書

一、試驗主題

社區健康促進活動志工工作負荷經驗工具發展及測量

二、簡介

社區健康促進志工在社區中熱心協助及宣導健康的重要性，除身體力行外且能督促民眾執行健康生活方式，促進居民遠離慢性病與心理不適的威脅，成為社區居民健康生活方式的模範，帶給社區活力、安全、健康的環境。但此工作執行，相信志工們有不同層次之困難，因此個人希望瞭解您在執行健康生活方式宣導工作之負荷情形為何，並設計出健康促進志工工作負荷之問卷，協助衛生局與衛生所護理人員能清楚評估熱心從事志工的工作負荷，以提供適切的協助與服務。

三、試驗目的

透過本研究，期望瞭解您在當地社區執行健康促進活動的各種經驗，如參與動機、如何加入、參與健康促進活動喜樂感及困難等感受。

四、試驗方法與程序說明

本研究共兩年，共分五個階段，此為第三階段，是將所第二階段訪談後修正之工作負荷問卷，訪談二十位參與者，參與者完全是志願的，此次參與受訪者是不同於第一及第二階段參與者，由研究者面對面將問卷逐一訪談 30 分鐘，以確認所修正之問卷，能評估社區健康促進志工工作困難陳述。本研究完全依照澳洲大學人類研究倫理委員會及長庚紀念醫院人體試驗研究倫理委員會相關規定執行，

所問的問題不涉及各位隱私，訪談的問卷也一律妥善保存於研究者就讀學校研究單位的櫃子並上鎖，研究的結果與報告也不會呈現受訪者的身分。

五、可能產生之副作用及危險

訪談中如果有任何讓您覺得不方便回答的問題，您可以不必回答。任何您所提供的資訊不會被認出您個人身分，隱私權都將被保護，除非徵得您的同意，否則不會被透露。您所回答的內容，在論文口頭或書面發表時，均也不會列出您的姓名，您決定參加與否不會影響任何醫療照護機構對您的服務，也不會影響您和衛生所醫護人員的關係。

六、預期試驗效果

期望能瞭解當您在執行健康生活方式宣導工作時，所面臨的困難程度為何。並設計出能評估健康促進志工工作負荷之問卷，能讓社區衛生護理人員能即時且清楚評估志工的工作負荷，得以提供協助及加強志工在在地社區所提供的健康促進活動服務。

七、緊急狀況之處理

受訪過程中，若您感到任何不適，將立即中止訪談，並提供必要之協助。若因為參與本研究而造成您身體上的任何損害，研究主持人高月梅將會提供您完善的醫療照護，24 小時聯絡電話：0939-654724。

八、受試者權益

16. 費用負擔：您無須負擔試驗費用。
17. 損害賠償：如果是因為訪談造成您的損害，長庚技術學院及計畫主持人將依中華民國法令賠償責任。
18. 保護隱私

a. 一個編號代碼將代表您的身分，此代碼不會顯示您的姓名、身分證字號、住址。

b. 對於您受訪的結果及診斷，試驗主持人將持保密的態度。除了有關機關依法調查外，試驗主持人會小心維護您的隱私。

c. 行政院衛生署與本院人體試驗倫理委員會在不危害您隱私的情況下，得以檢視您的資料。

19. 如本計畫成果產生學術文獻發表、實質效益或衍生其他權益時，亦同意無償捐贈給本院作為疾病預防、診斷及治療等公益用途。

20. 受試者或立同意書人有權在無任何理由情況下，隨時要求終止參與試驗。

九、研究者聯絡方式

如果您有任何有關此研究的問題與疑慮，可以隨時聯絡我，我的聯絡電話是 0939654724 或用電子郵件和我聯繫，我的電子郵件信箱是 yuehmei.gau@jcu.edu.au 或 ymgau@mail.cgit.edu.tw；您也可以用英文直接和我的指導教授 Usher 博士聯繫，她的電子郵件信箱是 *kim.usher@jcu.edu.au*

本研究內容及同意書，已經由高月梅完整口頭告知及說明，受訪者本人已充分瞭解並同意。

受試者　：_____　　手機號碼：_____

試驗主持人：_____(簽名)　日期：____年____月____日

※第一部分人口學資料：

※人口學資料：

1. 您的性別：□①男 □②女
2. 年齡：_____歲（足歲）
3. 教育程度：□①國小或以下 □②初中、國中 □③高中、高職
   □④專科 □⑤大學 □⑥研究所或以上
4. 宗教：□①無 □②佛教 □③道教 □④基督教 □⑤天主教 □⑥回教
   □⑦一貫道 □⑧其他_____(請描述)
5. 語言(可複選)：□①國語 □②閩南 □③客家 □④其他_____(請描述)
6. 目前職業：(可複選) **(若選項為⑭⑮⑯則 7.可不用填)**
   □①專業性工作人員 □②行政人員 □③助理人員 □④技術性工作人員
   □⑤非技術性工作人員 □⑥農漁夫 □⑦軍 □⑧公務人員 □⑨教師
   □⑩工 □⑪商 □⑫服務業 □⑬自由業 □⑭家管 □⑮退休 □⑯無
7. 工作情況-- □①固定場所及固定時間 □②不固定場所 □③不固定時間
   □④不固定場所及不固定時間
8. 婚姻狀況：□①未婚/單身 □②已婚 □③離婚或分居 □④喪偶
9. 跟同年齡比較，您覺得自己的健康狀況如何？
   □①很健康 □②健康 □③普通 □④不健康 □⑤很不健康
10. 經濟狀況：□①很充裕 □②充裕 □③普通 □④不足 □⑤很不足
11. 居住狀況：□①獨居 □②僅夫妻二人同住 □③與配偶及子女同住
    □④到子女家中輪流居住 □⑤三代同堂 □⑥其他_____(請描述)
12. 您在本社區(里、村)居住時間：_____年_____個月

13. 您現居住於_____縣(市)_____鄉、鎮、市_____村里

❋目前擔任社區健康促進志工相關資料

14. 您擔任社區健康促進志工時間：_____年_____個月

15. 您現在服務於_____縣(市)_____鄉、鎮、市_____村里

16. 您每週平均服務時數(包括交通時間)：_____小時

17. 您每週平均服務人數：_____人

18. 您是經由何人招募參與社區服務志工？(可複選)

□①自願 □②鄉鎮市代表 □③村長或社區發展協會監理事 □④衛生所人員

□⑤鄰居或家人 □⑥其他團體人員_____(請描述)

19. 您現擔任社區健康促進營造中心志工職務(或社區發展協會或婦女會或家政班…等之職務皆可填入，**可複選**)

□①組員 □②文書組工作 □③總務組工作 □④組長或班長或隊長

□⑤總幹事或理事長或監理事或社區營造中心負責人

□⑥其他_____(請描述)

20. 請問您是否還擔任其他類別之志工?

□①否 □②是，若是，請填答下列表格(可複選)

	志工性質	**擔任多久時間**	**平均時數/每週**
□	①社區環保志工	年 月	
□	②社區巡守隊	年 月	

□	③學校志工	年　月	
□	④衛生所志工	年　月	
□	⑤醫院志工	年　月	
□	⑥教會或廟宇志工	年　月	
□	⑦慈善團體志工	年　月	
□	⑧其他政府機關志工(如郵局、派出所、消防所、公所等)	年　月	
□	⑨其他(請描述)	年　月	

21.我會持續做社區健康促進志工

□①非常同意 □②同意 □③中立意見 □④不同意 □⑤非常不同意

請續下頁作答，謝謝!

※第二部份：社區健康促進志工工作負荷量表

此份問卷主要瞭解您在執行社區健康促進活動時，擔任志工工作(角色)會遇到的困難或負荷。在每個敘述後面，依發生的頻率，有五個不同的選項，從不、很少如此(一個月一次)、有時候(一週 1 次)、經常如此(一週 2-3 次以上)及總是如此(幾乎每次遇到)。請依您的感覺，選出您認為最符合當前的情況，請在適當的□內打「✓」，您的意見有助於社區衛生護理人員確實評估志工的工作負荷，期能協助志工順利推展在地社區健康促進活動與服務。感謝您！

	在社區裡執行健康促進活動時，	發生頻率				
		總是如此	經常如此	有時候	很少如此	從不
1	我覺得社區民眾參與度不高……	□	□	□	□	□
2	我覺得社區民眾不支持我所提供的服務……	□	□	□	□	□
3	我覺得社區民眾會誤解志工服務的意義性…	□	□	□	□	□
4	我覺得詐騙集團囂張，使志工的服務無法順利進行……	□	□	□	□	□
5	我覺得我所接受的志工訓練課程，無法協助我處理服務時產生的挫折或壓力……	□	□	□	□	□
6	我覺得志工人數不足……	□	□	□	□	□
7	我覺得志工的基本福利差……	□	□	□	□	□
8	我覺得社區健康服務所使用的檢查工具(如體重計、血壓計、量尺…等)錯誤率高……	□	□	□	□	□

	在社區裡執行健康促進活動時，	發生頻率				
		總是如此	經常如此	有時候	很少如此	從不
9	我覺得書寫社區健康服務計畫相關報告或報表有困難的……	□	□	□	□	□
10	我覺得專責單位(衛生局、社會局、衛生所)輔導政策多變，使我無所適從……	□	□	□	□	□
11	我覺得社區健康服務項目多，讓我忙不過來	□	□	□	□	□
12	我覺得我所接受的志工訓練課程，無法應付社區民眾的健康需求……	□	□	□	□	□
13	我覺得我與社區民眾溝通講解健康知識是有困難……	□	□	□	□	□
14	我覺得自己對我志工的角色不清楚……	□	□	□	□	□
15	我覺得志工間彼此相處困難……	□	□	□	□	□
16	我覺得我服務的工作危險性高……	□	□	□	□	□
17	我覺得提供健康服務會讓我身體疲累…	□	□	□	□	□
18	我覺得家人不支持我做志工服務……	□	□	□	□	□
19	我覺得在假日難以配合各項服務活動……	□	□	□	□	□
20	整體而言，我覺得執行社區服務時，工作本身負荷程度是沉重的……	□	□	□	□	□

若有其他方面的負荷，未被列述於問卷中，煩請描述下列空行中：

全部題目到此結束，麻煩再檢查一次，非常感謝您的協助！祝萬事如意！！

Appendix I: Approval of HREC

Appendix J: Approval of IRB

For the phase one of study

For the phase two of study

Appendix K: The Consent Letter of Governments

From the Bureau of the Public Health of New Taipei City Government

From the Bureau of the Public Health of Taoyuan County Government

From the Bureau of the Public Health of Hsinchu County Government

Appendix L: Lists of CHPDC From the Bureau of the Public Health

From the Bureau of the Public Health of New Taipei City Government

no.	營造鄉鎮	單位名稱	selected	District	Association
1	板橋市	臺北縣板橋市雙新社區發展協會		Banchiau District	Shuanghsin Community Development Association
2	板橋市	臺北縣板橋市三民社區發展協會	ˇ	Banchiau District	Sanmin Community Development Association
3	板橋市	臺北縣板橋市四汴頭社區發展協會		Banchiau District	Sihbiantou Community Development Association
4	板橋市	臺北縣板橋市板新社區發展協會	ˇ	Banchiau District	Panhsin Community Development Association
5	新莊市	社團法人臺北縣全民終身教育發展協會(新莊社區大學)		Hsinchuang District	Hsinchuang Populance Lifetime Education Development Association
6	新店市	臺北縣新店市健康關懷志願服務協會(北新社區)		Hsindian District	Hsindian Healthy Careing Voluntary Service Association
7	新店市	臺北縣新店市長青愛心關懷協會	ˇ	Hsindian District	Changching Healthy Caring Association
8	樹林市	臺北縣樹林市彭厝社區發展協會		Shulin District	Pengtsuo Community Development Association
9	板橋市	臺北縣板橋市江寧社區發展協會	ˇ	Banchiau District	Jiangning Community Development Association
10	三峽鎮	國際同濟會台灣總會台北縣星宸同濟會		Sanhsia District	Shingchen, Taiwan District of kiwanis international Organisation
11	三重市	社團法人台灣二十一世紀議程協會-三重社區大學	refuse	Sanchung District	Sanchung Populance Lifetime Education Development Association
12	新店市	財團法人天主教耕莘醫院	ˇ	Hsindian District	Cardinal Tien Hospital
13	汐止市	國泰醫院汐止分院		Sijhih District	Sijhih Cathay General Hospital
14	板橋市	板橋市中山社區發展協會		Banchiau District	Jungshan Community Development Association

15	新店市	臺北縣新店市下城社區發展協會	ˇ	Hsindian District	Shiacheng Community Development Association
16	新店市	慈濟醫院台北分院	refuse	Hsindian District	Taipei Buddhist Tzuchi General Hospital
17	永和市	永和市秀朗社區發展協會		Yunghe District	Shioulang Community Development Association
18	雙溪鄉	臺北縣雙溪鄉生態旅遊協會		Shuanghi District	Shuanghi Township Ecotourism Association
19	雙溪鄉	臺北縣黃金山城願景協會		Shuanghi District	Shuanghi Golden Hill Village Prospect Association
20	鶯歌鎮	台北縣鸚哥石文化夢想協會	ˇ	Tingge District	Yinggestone Culture Development Association
21	平溪鄉	平溪文史工作室		Pingshi District	Pingshi Culture and History Institute
22	永和市	雙和醫院		Yunghe District	Shuang Ho Hospital
23	板橋市	板橋市埤墘社區發展協會	ˇ	Banchiau District	Beichian Community Development Association
24	三重市	三重市重新社區發展協會	ˇ	Sanchung District	san chung jung shin Community Development Association
25	瑞芳鎮	瑞芳鎮侯硐社區發展協會		Rueifang District	Houtung Community Development Association
26	淡水鎮	淡水鎮長青會		Danshuei District	Danshuei Senior Association
27	汐止市	汐止市鄉長社區發展協會		Sijhih District	Hsiangchang Community Development Association
28	平溪鄉	平溪鄉健康城市促進協會		Pingshi District	Pingshi Healthy City Promotion Association
29	淡水鎮	馬偕醫院淡水分院	refuse	Danshuei District	Mackay memeorial Hospital

From the Bureau of the Public Health of Taoyuan County Government

no.	鄉鎮市	社區健康營造名稱	selected	Township	**Association**
1	觀音鄉	觀音鄉衛生所		Guanyin Hsiang	Guanyin Community Health Promotion Development Centre
2	觀音鄉	觀音鄉樹林社區發展協會		Guanyin Hsiang	Shulin Community Development Association
3	中壢市	天晟醫院中壢市社區健康營造中心		Chungli City	Chungli Community Health promotion Development Centre, Tienchen Hospital
4	大溪鎮	大溪鎮南興社區發展協會		Dashi Township	Nanhsin Community Development Association
5	大溪鎮	大溪月眉社區發展協會		Dashi Township	Yuehmei Community Development Association
6	楊梅鎮	怡仁綜合醫院		Yangmei Township	Yijen General Hospital
7	楊梅鎮	天成醫院		Yangmei Township	Tienchen Hospital
8	大園鄉	大園鄉竹圍社區發展協會	ˇ	Dayuan Hsiang	Chuwei Community Development Association
9	龜山鄉	長庚醫療財團法人桃園長庚紀念醫院		Gueishan Hsiang	Taoyuan ChangGung Nemorial Hospital
10	龜山鄉	長庚醫療財團法人林口長庚紀念醫院	ˇ	Gueishan Hsiang	Linkou ChangGung Nemorial Hospital
11	龍潭鄉	國軍桃園總醫院附設民眾診療服務處		Lungtan Hsiang	Taoyuan Armed Forces General Hospital
12	龍潭鄉	龍潭敏盛醫院		Lungtan Hsiang	Mingsheng Hospital
13	平鎮市	壢新醫院	ˇ	Pingjen City	Lihsin Hospital
14	桃園市	行政院衛生署桃園醫院		Taoyuan City	Taoyuan General Hospital, Department of Health

no.	鄉鎮市	活力站名稱	selected	Township	Health Promotion Vitality Station
1	桃園市	桃園市忠義社區健康活力站	ˇ	Taoyuan City	Chungyi Health Promotion Vitality Station
2	桃園市	南通社區健康活力站		Taoyuan City	Nantung Health Promotion Vitality Station
3	中壢市	幸福中壢健康活力站		Chungli City	Hsinfu Health Promotion Vitality Station
4	中壢市	中壢市莊敬里健康活力站		Chungli City	Chuangching Health Promotion Vitality Station
5	平鎮市	桃園縣平鎮市獅子林社區健康活力站	ˇ	Pingjen City	Shihtzulin Health Promotion Vitality Station
6	平鎮市	桃園縣平鎮市北勢社區健康活力站	ˇ	Pingjen City	Beishr Health Promotion Vitality Station
7	八德市	大安健康活力站		Bade City	Daan Health Promotion Vitality Station
8	八德市	八德市瑞祥健康活力站		Bade City	Rueishiang Health Promotion Vitality Station
9	大溪鎮	大溪鎮南興里健康活力站		Dashi Township	Nanhsin Health Promotion Vitality Station
10	楊梅鎮	紅梅健康活力站		Yangmei Township	Hungmei Health Promotion Vitality Station
11	楊梅鎮	桃園縣楊梅鎮中山里健康活力站		Yangmei Township	Chungshan Health Promotion Vitality Station
12	蘆竹鄉	蘆竹鄉蘆竹村健康活力站	ˇ	Luchu Hsiang	Luchu Health Promotion Vitality Station
13	蘆竹鄉	蘆竹鄉山腳村健康活力站	ˇ	Luchu Hsiang	shanjiau Health Promotion Vitality Station
14	大園鄉	大園鄉竹圍村健康活力站	ˇ	Dayuan Hsiang	Chuwei Health Promotion Vitality Station
15	龜山鄉	龜山鄉大同村健康活力站		Gueishan Hsiang	Datong Health Promotion Vitality Station
16	龜山鄉	龜山鄉新路村健康活力站		Gueishan Hsiang	Hsinlu Health Promotion Vitality Station
17	龍潭鄉	龍潭鄉怡德養護中心健康活力站		Lungtan Hsiang	Yide Long-term Care Institute Health Promotion Vitality Station
18	新屋鄉	新屋鄉大坡健康活力站		Hsinwu Hsiang	Dapo Health Promotion Vitality Station
19	觀音	桃園縣觀音鄉廣福		Guanyin Hsiang	Guangfu Health Promotion Vitality Station

	鄉	健康活力站			
20	復興鄉	復興鄉羅浮村健康活力站		Fushing Hsiang	Luofu Health Promotion Vitality Station

From the Bureau of the Public Health of Hsinchu County Government

no.	鄉鎮	單位	selected	Township	**Association**
1	竹東鎮	竹東衛生所		Chudong Township	Chudong Public Health centre
2	竹東鎮	新竹縣行政院衛生署竹東醫院		Chudong Township	Chudong General Hospital, Department of Health
3	五峰鄉	五峰衛生所	ˇ	Wufang Hsiang	Wufang Public Health centre
4	竹北市	東元醫院	ˇ	Chubei City	Dongyuan Hospital
5	湖口鄉	天主教仁慈醫院		Hukou Hsiang	Catholic Jentzu Hospital
6	湖口鄉	湖口鄉湖鏡村	ˇ	Hukou Hsiang	Hujing Community Development Association
7	北埔鄉	北埔鄉衛生所		Beipu Hsiang	Beipu Public Health centre

Appendix M: Publication List

Publication 1:

Thesis	Article	Publication Details	Author Contributions	Impact Factors
Chapter 1	Community health promotion volunteers in Taiwan: their value to nurses	*Australian Journal of Advanced Nursing*	Yueh-mei Gau (50%) Lee Stewart (10%) Petra Buettner (10%) Kim Usher (30%)	0.379(2010)

Publication 2:

Thesis	Article	Publication Details	Author Contributions	Impact Factors
Chapter 2	The burden of volunteering in a community health role in Taiwan: an integrated literature review	*Journal of Clinical Nursing*	Yueh-mei Gau (50%) Kim Usher (20%) Lee Stewart (20%) Petra Buettner (10%)	1.228

Publication 3:

Thesis	Article	Publication Details	Author Contributions	Impact Factors
Chapter 4	Burden experienced by community health volunteers in Taiwan: a qualitative study	*International Journal of Nursing Practice*	Yueh-mei Gau (50%) Petra Buettner (10%) Kim Usher (20%) Lee Stewart (20%)	0.9

Publication 4:

Thesis	Article	Publication Details	Author Contributions	Impact Factors
Chapter 5	Development and validation of an instrument to measure the burden experienced by community health volunteers in Taiwan	*Journal of Clinical Nursing*	Yueh-mei Gau (40%) Petra Buettner (30%) Kim Usher (20%) Lee Stewart (10%)	1.228

Publication 5:

Thesis	Article	Publication Details	Author Contributions	Impact Factors
Chapter 6	Burden experienced by community health volunteers in Taiwan: a questionnaire survey	*International Journal of Nursing Studies*	Yueh-mei Gau (40%) Lee Stewart (20%) Petra Buettner (15%) Kim Usher (25%)	2.4

Appendix N: Confirmation seminar invitation

JAMES COOK UNIVERSITY
AUSTRALIA

An invitation is extended to all staff members and research students of the School of Nursing, Midwifery & Nutrition to attend a

Higher Degree Research Seminar by

Ms Yueh-Mei Gau

PhD Confirmation Seminar

Date: Thursday 11 June 2009
Time: 11.00 am – 11.50 am
Venues: JCU Townsville – **DA009-001**
JCU Cairns – **A2.201** [videoconference]

To develop and conduct an initial validation of a questionnaire to assess burden associated with volunteering in health promotion in Taiwan.

Supervisor:	Professor Kim Usher
Co-Supervisor:	Dr Lee Stewart
Associate Supervisor:	Dr Petra Buttner
RSM:	Assoc. Professor Betsy Jackes

Dr Lea Budden, Postgraduate Liaison Officer
School of Nursing, Midwifery & Nutrition
(Ph: 4781 5354)

Appendix O: Pre-completion seminar invitation

research seminar

JAMES COOK UNIVERSITY AUSTRALIA

You are invited to attend the Pre-Completion Seminar by Doctor of Philosophy candidate

Yueh-Mei Gau

Master of Science
| National Yang-Ming University

Bachelor of Science in Nursing
| Kaohsiung Medical College

Diploma of Nursing and Midwifery
| National Taipei College of Nursing

When: 2:00 – 2:50 pm
Monday 7 November 2011

Where: Townsville – 09-001
Cairns – A2-201

Panel: Prof Kim Usher
| Principal Supervisor

A/Prof Lee Stewart
| Co-Supervisor

Dr Petra Buttner
| Associate Supervisor

Prof Betsy Jackes
| Research Student Monitor

School of Nursing, Midwifery & Nutrition

Dr Elizabeth Emmanuel, Postgraduate Liaison Officer
(Ph: 4042 1306 or Elizabeth.Emmanuel@jcu.edu.au)

The development of the burden on Community Health Promotion Development Volunteers instrument and the measurement of burden experienced by community health promotion development volunteers in Taiwan

Background: The work of volunteers increases the service hours and range of services available at community health centres in Taiwan. Without these volunteers, many health promotion activities in Taiwan would cease to be available to people. While we know the government's resources are limited, the strength of the civilian community is enormous. Since the Taiwan Government funding for community health promotion diminished, some centres have not only been able to continue to recruit volunteers, offer health promotion in the community, or integrate manpower and materials from the local community for the purpose of delivering health promotion to members of the community. Health promotion volunteers often face negative attitudes to their role form community members that leads to frustration. The volunteers may also be engaged in other forms of volunteering, which could lead to burden and result in attrition from the role. To date however there has been little empirical evidence regarding the burden experienced by community health promotion development volunteers in Taiwan and no instrument to measure the phenomenon.

Objectives: To develop a questionnaire to measure burden experienced by community health promotion development volunteers and to investigate the current burden experienced by this cohort of volunteers in an area of Taiwan.

Methods: A sequential mixed method exploratory design was chosen as the best way to conduct the study. The study incorporated the following three phases; initial development of a questionnaire, testing of the questionnaire, and surveying a large sample of volunteers using the developed questionnaire.

Results: The 20 item instrument designed to measure burden on community health promotion volunteers (the BCHPDV) in Taiwan showed good internal consistency, content validity, and construct validity.

Conclusions: Community nurses in Taiwan will be able to use the BCHPDV instrument to assess the burden experienced by volunteers in the future. The identification of the factors associated with burden in the current sample will allow the government, nurses and those in leadership positions to develop strategies to help reduce the burden on these volunteers in the future.