



Faculty of Medicine and Health Sciences

**AN INTERVENTIONAL STUDY ON THE LEVELS OF KNOWLEDGE,
ATTITUDE AND PRACTICE ON HAND WASHING AMONG THE
RESIDENTS OF KAMPUNG STAPANG I, SIBU
FROM 11TH JUNE TO 17TH AUGUST 2012**

4th Year Medical Students

Community Medicine and Public Health Posting MDP 40210

Group 2 (Rotation 2)

Research Supervisors:

Associate Prof. Dr. Md Mizanur Rahman

Dr. Helmy Hazmi

Amal Athirah Zarzilah
Bong Yee Hong
Chan Siew Fong
Farahana Jaafar
Fatin Nabila Abdul Aziz
Ha Sha Lene
Kong Sing Ling
Lee Chen Dar

Looi Zhen Siang
Muhammad Khalid Mohd Yusof
Nasuha Nordin
Nur Aizzudin Azzfar Harun
Nur Iwana Abdul Taib
Nur Jalilatul Husna Mansor
Nurhamizah Ismail
Rashidah Rusli

Siti Safra Omar Mohd Azam
Suguna a/p Seraman
Tan Shong Sheng
Teh Huey Chiat
Wirdatul Farah Said
Yap Oi Chia
Yeong Jin Yuan
Zafirah Kaiyisah Abd Karim

**AN INTERVENTIONAL STUDY ON THE LEVELS OF KNOWLEDGE,
ATTITUDE AND PRACTICE ON HAND WASHING AMONG THE
RESIDENTS OF KAMPUNG STAPANG I, SIBU FROM 11TH JUNE TO 17TH
AUGUST 2012**

Amal Athirah Zarzilah	Looi Zhen Siang	Siti Safra Omar Mohd Azam
Bong Yee Hong	Muhammad Khalid Mohd Yusof	Suguna a/p Seraman
Chan Siew Fong	Nasuha Nordin	Tan Shong Sheng
Farahana Jaafar	Nur Aizzudin Azzfar Harun	Teh Huey Chiat
Fatin Nabila Abdul Aziz	Nur Iwana Abdul Taib	Wiratul Farah Said
Ha Sha Lene	Nur Jalilatul Husna Mansor	Yap Oi Chia
Kong Sing Ling	Nurhamizah Ismail	Yeong Jin Yuan
Lee Chen Dar	Rashidah Rusli	Zafirah Kaiyisah Abd Karim

**A report submitted in partial fulfilment of the requirement for the MDP 40210
(Community Medicine and Public Health Posting)**

GROUP MEMBERS

Matric Number	Name
18162	Chan Siew Founq
20637	Amal Athirah binti Zarzilah
21012	Ha Sha Lene
21622	Muhammad Khalid bin Mohd Yusof
22394	Siti Safra Omar binti Mohd Azan
22632	Wirdatul Farah bt Said
20959	Fatin Nabila binti Abdul Aziz
23277	Bong Yee Hong
23467	Farahana bt Jaafar
23777	Kong Sing Ling
23813	Lee Chen Dar
23907	Looi Zhen Siang
24263	Nasuha binti Nordin
24531	Nur Aizzudin Azzfar bin Harun
24599	Nur Iwana bt Abdul Taib
24602	Nur Jalilatul Husna binti Mansor
24672	Nurhamizah binti Ismail
24874	Rashidah binti Rusli
25175	Suguna A/P Seraman
25242	Tan Shong Sheng
25266	Teh Huey Chiat
25410	Yap Oi Chia
25420	Yeong Jin Yuan
25441	Zafirah Kaiyisah binti Abd Karim

ACKNOWLEDGEMENT

First and foremost, we are deeply indebted to our posting coordinators, Dr. Clifton Akoi, Dr. Aye Aye Aung and all the lecturers of the Department of Community Medicine and Public Health, for their professional supervision and guidance throughout this posting. We would also like to extend our gratitude to our supervisors, Associate Prof. Dr. Md. Mizanur Rahman and Dr. Helmy Hazmi for their assistance and support in this study. In addition, much appreciation goes to the Faculty of Medicine and Health Sciences, University Malaysia Sarawak (UNIMAS) for providing us a chance to do this study and to interact with the local Iban long house community. During this study, we have learned to appreciate this new culture and realized the value of working together as a team. We would also like to extend our deepest appreciation to Mr. Sukran Kana, Community Development Officer and a special thanks to *Tuai-tuai* Rumah of all 8 long houses and Stapang I Community for their endless cooperation. Last but not least, we would also like to thank the Divisional Health Officer, Dr Muhamad Rais Abdullah and all officers from Divisional Health Office for their great help in making our studies a possible, medical team from Lanang, Oya, Sekuau and Selangau Clinic as well as the UNIMAS drivers for their hard work in making this study a success.

ABSTRACT

Hand washing practice is one of preventive measures for some common infectious diseases. Thus to promote hand washing among community, level of knowledge and awareness among the population should be assessed so that appropriate interventions can be carried out. The objective of this study was to study the knowledge, attitude and practice on hand washing among residents of Stapang I aged 18 and above from 11th of June to 17th of August 2012. The results obtained were then using as the baseline data to conduct an intervention programme beneficial to the community to enhance their level of knowledge, attitude and practice towards hand washing. Data collection was done by face to face interview using interview-based questionnaire. Data analysis was done using SPSS software version 20.0. Results showed that 50% of the respondents had good knowledge and good attitude while 63.3% had good practice towards hand washing. Post-intervention study showed significant improvement in the total score for knowledge and attitude towards hand washing ($p < 0.05$), but no significant increase in the total level practice ($p > 0.05$). In conclusion, there is a great need for intensive intervention in order to enhance the practice of hand washing among the respondents.

ABSTRAK

Amalan mencuci tangan adalah salah satu cara mencegah penyebaran sesetengah penyakit berjangkit. Oleh itu untuk memupuk amalan tersebut dalam kalangan komuniti, tahap pengetahuan dan kesedaran dalam kalangan penduduk perlu dinilai supaya campur tangan yang sesuai boleh dijalankan. Objektif kajian ini adalah untuk mengkaji pengetahuan, sikap dan amalan mengenai amalan pencucian tangan dalam kalangan penduduk Stapang I berumur 18 tahun ke atas dari 11 Jun hingga 17 Ogos 2012. Keputusan yang diperolehi digunakan sebagai data asas untuk menjalankan campur tangan yang dapat memberi manfaat kepada masyarakat bagi meningkatkan tahap pengetahuan, sikap dan amalan ke arah amalan pencucian tangan. Pengumpulan data telah dilakukan melalui temuduga secara bersemuka dengan menggunakan soal selidik berasaskan temubual. Analisis data dilakukan dengan menggunakan perisian SPSS versi 20.0. Hasil kajian menunjukkan bahawa 50% responden mempunyai pengetahuan dan sikap, manakala 63.3% mempunyai amalan pencucian tangan yang baik. Kajian pasca-campur tangan menunjukkan peningkatan yang ketara dalam jumlah markah pengetahuan dan sikap tentang pencucian tangan ($p < 0.05$), tetapi tidak ada peningkatan yang ketara dalam jumlah tahap amalan ($p > 0.05$). Kesimpulannya, campur tangan intensif amat diperlukan untuk meningkatkan kesedaran terhadap pencucian tangan dalam kalangan responden.

TABLE OF CONTENT

	PAGE
Group Members	i
Acknowledgements	ii
Abstract	iii
Abstrak	iv
Table of Contents	v
List of Annex	x
List of Tables	xi
List of Figures	xii
CHAPTER 1: Introduction	
1.1 Background information	1
1.2 Problem statement	3
1.3 Significance of the study	5
1.4 Objectives of study	
1.4.1 General objective	5
1.4.2 Specific objectives	5
1.5 Research questions	7
1.6 Research hypotheses	7
1.7 List of variables	8
1.8 Conceptual framework	9
1.9 Operational definitions	10

CHAPTER 2: Literature review

2.1	Introduction	11
2.2	Proper hand washing in community	12
2.3	Benefits of hand washing in relation to diseases	
2.3.1	Gastrointestinal diseases in relation to hand washing	12
2.3.2	Respiratory diseases in relation to hand washing	13
2.3.3	Skin disease, intestinal worms and eye infections	14
2.4	Relationship of socio – demographic characteristics with knowledge, attitude and practice of hand washing	
2.4.1	Age	15
2.4.2	Gender	16
2.4.3	Ethnic group	17
2.4.4	Religion	17
2.4.5	Education level	18
2.4.6	Income	18
2.4.7	Occupation	19
2.5	Relationship between facilities availability and hand washing practice	
2.5.1	Water supply	19
2.5.2	Water stands and sinks	20
2.5.3	Soaps	20
2.6	Knowledge, attitude, and practice of hand washing	
2.6.1	Knowledge	21
2.6.2	Attitude	21
2.6.3	Practice	23
2.7	Intervention	
2.7.1	Knowledge, attitude and practice change following health intervention program	24
2.7.2	Types of intervention	25

CHAPTER 3: Methodology

3.1	Study design	26
3.2	Study population and place of study	26
	3.2.1 Inclusion criteria	27
	3.2.2 Exclusion criteria	27
3.3	Sample size determination and sampling procedure	28
3.4	Data collection instrument	30
3.5	Data collection procedure	32
3.6	Intervention	34
3.7	Statistical analysis	34
3.8	Ethical issue	34
3.9	Duration of study	35

CHAPTER 4: Results

4.1	Introduction	36
4.2	Socio-demographic characteristics of the respondents	
	4.2.1 Age	37
	4.2.2 Gender	38
	4.2.3 Ethnicity	39
	4.2.4 Religion	39
	4.2.5 Level of education	40
	4.2.6 Occupation	41
	4.2.7 Household Income	42
4.3	Facilities information of the respondents	
	4.3.1 Sources of water supply	43
	4.3.2 Water shortage	44
	4.3.3 Number of working washing stand	45
	4.3.4 Availability of soap	45
4.4	Level of knowledge on hand washing	
	4.4.1 Sources of knowledge on hand washing	46
	4.4.2 Total level of knowledge on hand washing	47
4.5	Attitude on hand washing	49

4.6	Level of practice	
4.6.1	Practice towards hand washing (moments & frequency)	52
4.6.2	Practice towards hand washing (method)	53
4.7	Relationship between knowledge on hand washing and socio-demographic characteristics	53
4.8	Relationship between attitude towards hand washing and socio-demographic characteristics	57
4.9	Relationship between practice towards hand washing and socio-demographic characteristics	60
4.10	Relationship between facilities availability and practice towards hand washing	62
4.11	Relationship between knowledge, attitude and practice on hand washing before intervention	64
4.12	Relationship between Availability of Education and Information on Hand Washing and Practice towards Hand Washing	65
4.13	Post-intervention results	
4.13.1	Introduction	66
4.13.2	Change of level of knowledge towards hand washing following intervention	66
4.13.3	Changes of attitude towards hand washing following intervention	68
4.13.4	Changes of practice towards hand washing following intervention	70

CHAPTER 5: Intervention

5.1	Introduction	71
5.2	Preparation	71
5.3	Objectives	
5.3.1	General objective	71
5.3.2	Specific objectives	72

5.4	Details of intervention activities	
5.4.1	Talk	73
5.4.2	Hand washing demonstration	73
5.4.3	Exhibition	73
5.4.4	Quizzes	74
5.4.5	Games	
	5.4.5.1 Pairing game	74
	5.4.5.2 Jigsaw puzzle	75
5.5	Intervention activities feedback	75
5.6	Limitation	78
5.7	Conclusion	79

CHAPTER 6: Discussion

6.1	Introduction	80
6.2	The levels of knowledge, attitude and practice (KAP) on hand washing	80
6.3	The relationship between knowledge of hand washing and socio-demographic characteristics	82
6.4	The relationship between attitude of hand washing and socio-demographic characteristics	84
6.5	The relationship between practice of hand washing and socio-demographic characteristics	86
6.6	The relationship between facilities availability and hand washing compliance	88
6.7	Correlation among knowledge, attitude and practice on hand washing	88
6.8	Changes in knowledge, attitude, and practice after intervention	90
6.9	Limitation	92

CHAPTER 7: Conclusion & recommendation

7.1	Conclusion	93
7.2	Recommendation	95

BIBLIOGRAPHY	97
ANNEX	
ANNEX 1. Research timeline for pre intervention research activities	105
ANNEX 2. Research timeline for post intervention research activities	106
ANNEX 3. Questionnaire	107
ANNEX 4. Feedback form	127
ANNEX 5. Photos	131
ANNEX 6. Map	133

LIST OF TABLES

TABLE	PAGE
Table 4.1 Age distribution of the respondents	37
Table 4.2 Distribution of the respondents by ethnicity	39
Table 4.3 Distribution of the respondents by religion	39
Table 4.4 Level of education among the respondents	40
Table 4.5 Monthly household income of the respondents	42
Table 4.6 number of water supply among the respondents	43
Table 4.7 Number of working washing stand in the respondent's household	45
Table 4.8 Sources of information on hand washing	47
Table 4.9 General knowledge regarding hand washing	47
Table 4.10 Distribution of the respondents by attitude toward hand washing	53
Table 4.11 Methods in hand washing after four moments among the respondents	53
Table 4.12 Relationship between knowledge on hand washing and socio-demographic characteristics	54
Table 4.13 Relationship between attitude on hand washing and socio-demographic characteristics	60
Table 4.14 Relationship between practice towards hand washing and socio-demographic characteristics	60
Table 4.15 Relationship between practice towards hand washing and facilities availability	62
Table 4.16 Correlation matrix of knowledge, attitude and practice of hand washing	64
Table 4.17 Mean changes of knowledge score following intervention	65
Table 4.18 Relationship between practice towards hand washing and availability of education and information on hand washing	66
Table 4.19 Mean changes of attitude score following intervention	68
Table 4.20 Mean changes of practice score following intervention	70

Table 5.1	Number of respondents to specific question in feedback form	77
-----------	---	----

LIST OF FIGURES

FIGURE	PAGE	
Figure 4.1	Percentage distribution of respondents by gender	38
Figure 4.2	Percentage distribution of respondents by occupation	41
Figure 4.3	Sources of water supply among the respondents	43
Figure 4.4	Frequency of water shortage among the respondents in the past 3 months	44
Figure 4.5	Percentage distribution of availability of soap in the respondent's household	45
Figure 4.6	Percentage distribution of availability of education and information on hand washing among the respondents	46
Figure 4.7	The level of knowledge on hand washing	48
Figure 4.8	Level of attitude toward hand washing among the respondents	51
Figure 4.9	Level of score among the respondents	52
Figure 4.10	Level of knowledge of the respondents following intervention	67
Figure 4.11	Level of attitude among the respondents following intervention	69
Figure 4.12	Level of practice among the respondents following intervention	70

CHAPTER 1

INTRODUCTION

1.1 Background information

Bacteria recovered from the hand can be divided into two categories; resident and transient. The resident flora tends to dominate under the superficial cells of the stratum corneum and can also be found on the surface of the epidermis, with *Staphylococcus epidermidis* being the dominant species. Among fungi, the commonest genus, would be *Pityrosporum (Malassezia)* spp. (Wilson, 2005). Resident flora are not known to cause infections on the skin. However they do cause infections on non-intact skin, sterile body cavities or the eyes (Lark *et al.*, 2001). Transient microorganisms acquired during contact with contaminated surface or environment typically colonize the superficial layer of the skin and do not usually multiply on the skin, but they survive and sporadically multiply on skin surface, and are more amenable to removal by routine hand hygiene (Kampf & Kramer, 2004).

With the development of vaccines and antimicrobial medications during the mid 20th century, in addition to control over the common infectious microbes such as tuberculosis and diphtheria, the significant practice of hygiene has faded. Rather, the focus of health concern has shifted to non-communicable diseases which are steadily increasing, while it is observed that the decline in hygiene is ever evident especially in the home and community. Advances in medicine and public health seemed, at one time, to extensively lighten the number of infectious diseases. Nonetheless, concerns for this and the need for prevention through home and community hygiene have steadily climbed back up the health agenda (Aiello *et al.*, 2007). According to Pinner *et al.* (1996) deaths

attributable to infectious disease increased by 22% in the United States (US) alone between the year 1980 and 1992, making up the third leading cause of death among US residents. This trend is largely attributed to two main factors: first, the constantly mutating nature and range of pathogens to which we are exposed and, secondly, the changes are occurring in the community, which affect the resistance to infection. Undetermined the extent of ignorance to hygiene practice, poor hand hygiene is a vital factor for many cases of gastrointestinal (GI), respiratory tract and skin infection which make up the biggest slice of the infectious disease burden (Aiello *et al*, 2007).

Hand hygiene according to the World Health Organization (2009), is a general term referring to any action of hand cleansing. This is done with the aim of physically or mechanically removing dirt, organic material and/or microorganisms. One of the important measures in preventing the spread of infection is generally considered to be hand washing. In a study conducted by Choi *et al*. (2007) to evaluate the public's awareness in Korea of the importance of hand washing, the result showed that a majority of 77.6% of the survey respondents were aware of the significance of hand washing in preventing communicable diseases, however 39.6% of the respondents failed to do so, as they claimed to not be accustomed to washing their hands and 30.2% found washing their hands to be bothersome. Being cognizant to the lack of knowledge, negligence of attitude and practice of the community, our group will conduct an interventional research by handing out questionnaires which aim to determine, compare, and verify the knowledge, attitude and practice of the community in relation with hand washing practice. Subsequently, from the results analyzed, numerous interventions will be conducted to establish correct knowledge, attitude and practice of the community towards hand hygiene.

1.2 Problem Statement

Hand washing is one of the most important factors for the prevention of disease transmission. In community setting, proper hand washing helps to protect people against food-borne disease like viral gastroenteritis, air-borne disease, for example influenza and disease transmitted through direct physical contact such as impetigo, and hand, foot and mouth disease (HFMD).

According to The Global Public-Private Partnership for Hand Washing with Soap (PPPHW, 2009), "Hand washing with soap is the single most cost-effective health intervention". It is evidenced because a \$3.35 investment in hand washing brings the similar health benefits as an \$11.00 investment in latrine construction, a \$200.00 investment in household water supply, and an investment of thousands of dollars in immunization (PPPHW, 2009). Investments in the promotion of hand washing with soap can also maximize the health benefits of investments in water supply and sanitation infrastructure. Moreover, the cost of providing inpatient care for childhood rotavirus gastroenteritis in Malaysia was estimated to be US\$1.8 million yearly. Cost is not typically an obstacle to hand washing promotion as almost all households in the world already have soap although it is commonly used for other purposes, for example, laundry rather than for hand washing.

Although these diseases are preventable with hand washing, the Third National Health and Morbidity Survey still show that the incidence of acute diarrhea in Sarawak is 5.6% which was higher than the national (Malaysia) incidence of 5.0% (Institute for Public Health (IPH), 2008). Furthermore, from 1997 until 2006, Sarawak had experienced a 3 yearly pattern outbreak of Hand Foot Mouth Disease (HFMD), and Sibul was the most affected division (Sarawak Health Department, 2006). Early 2012, an outbreak of HFMD had occurred and the highest number of cases was 757 cases reported during 4th to 10th March 2012 in Sarawak. Up till 24th June 2012, there were 8270 cases of HFMD in Sarawak and among those cases, 437 are reported from Sibul.

However, Sibu was not the worst division affected in this outbreak (Sarawak Health Department, 2012).

If hand washing can be practiced, there will be a reduction of these diseases as shown in studies by Curtis & Cairncross (2003), and Luby *et al.* (2004) that respectively concluded that washing hands with soap were associated with a decrease in risk of diarrheal disease of 47% and more than 50% reduction of the number of pneumonia-related infections in children under the age of five year-old when hand washing with soap is practiced. However, the observed rate of hand washing with soap at critical moments was only up till 34 percent around the world and the suggested major reason was hand washing is not the habit in community around the world (PPPHW, 2009). According to Niffenegger (1997), hand washing helped to reduce colds at the test child care center where frequent and proper hand washing practices were incorporated into the curriculum through a hand washing intervention programme. According to Arnaud *et al.* (1993), the childrens' hand washing skills did improve after the hand washing teaching programme. The children had fewer visits to the doctor, took fewer prescribed antibiotics, and had fewer infectious illnesses than they did for the same time period the previous year. However, other variables, in addition to the teaching programme may have contributed to the outcome.

This study would be done in the community setting as most of the intervention studies took place in childcare centers or school (63%) rather than community settings (37%). Majority of the intervention studies were conducted among younger age groups (≤ 5 years), which was 59% if compared to age group more than five year-old, which was 41% (Aiello *et al.* 2008). While there is much discussion and research done on about how to improve hand washing habits in healthcare settings, the importance of hand washing in household or community setting, particularly in developing countries, receives scant attention (Curtis *et al.* 2003). Thus, it is hoped that this study can give an insight about the knowledge, attitude and practice of hand washing among community setting in the adult respondents in Stapang 1.

1.3 Significance of the Study

The Ministry of Health (MOH) had commenced hand hygiene campaign since 2006. This campaign comprised the hospital, schools, food and beverages outlets and public places such as commuters and front liners. Hand hygiene becomes more important following the spread of pandemic Influenza A 2009 (H1N1) virus globally including Malaysia. Up to September 2010, there were 12210 cases of H1N1 and 92 deaths had been recorded. Hand food mouth disease (HFMD), tuberculosis and food poisoning are other common diseases related to improper practice of hand hygiene. The campaign had been carried out widely in hospital, schools and restaurants but not in community level. In community level, this research is carried out to examine the extent of awareness on hand hygiene particularly in hand washing practice among rural residents in Stapang 1. It is also designed to assess the knowledge, attitude and practice of the community on hand washing and educate them about the common diseases through interventions so that early prevention and treatment can be achieved.

In a study done by Halder *et al.* (2010) in rural Bangladesh, hand cleanliness among caretakers and children were associated with economic status and availability of water at hand washing locations. Therefore, it is necessary to determine whether the compliance of hand washing is influenced by characteristics of socio-demographic and availability of the facilities or otherwise. Besides this socio-demographic and water supply availability, other factor such as soap usage and availability of washing stand in the study location also contribute to the hand washing compliance. This is supported by the result form the research above, Halder *et al.* (2010) found that rinsing hands with water only was more common compared to the washed both hands with soap at critical moments or key hand washing times. Hence, this research is important to enhance the community knowledge, attitude and practice on hand washing in-related with facilities availability.

1.4 Objectives of Study

1.4.1 General Objective

This research aims to study knowledge, attitude and practice (KAP) of hand washing in Stapang 1 community and to evaluate their changes of KAP on hand washing after the health intervention.

1.4.2 Specific Objectives

The specific objectives of this study are to:

- 1.4.2.1 identify the socio-demographic characteristics of the respondents;
- 1.4.2.2 assess the respondent's levels of KAP on hand washing;
- 1.4.2.3 determine the relationship between KAP of hand washing and the socio-demographic characteristics of Stapang 1 respondents;
- 1.4.2.4 determine the relationship between KAP and hand washing compliance;
- 1.4.2.5 determine the relationship between hand washing compliance and the availability of hand washing facilities in the community; and
- 1.4.2.6 evaluate the changes of KAP on hand washing among the respondents after the health intervention.

1.5 Research Questions

The study aims to answer the following research questions:

- 1.5.1 What are the socio-demographic characteristics of the Stapang 1 community?
- 1.5.2 What are the levels of KAP on hand washing among the study population?
- 1.5.3 What are the relationship between knowledge, attitude and practice on hand washing?

1.6 Research Hypotheses

The following hypotheses will be put forward in this study:

- 1.6.1 The respondents who have good KAP on hand washing are likely to comply with the procedure.
- 1.6.2 The score of knowledge, attitude, and practice correlate with each other.
- 1.6.3 The socio-demographic characteristics of the respondents are likely to influence the KAP on hand washing.
- 1.6.4 The respondents are likely to be compliant with hand washing, if the facilities are available in the community
- 1.6.5 The respondent's KAP on hand washing is likely to improve after the relevant health intervention program

1.7 List of Variables

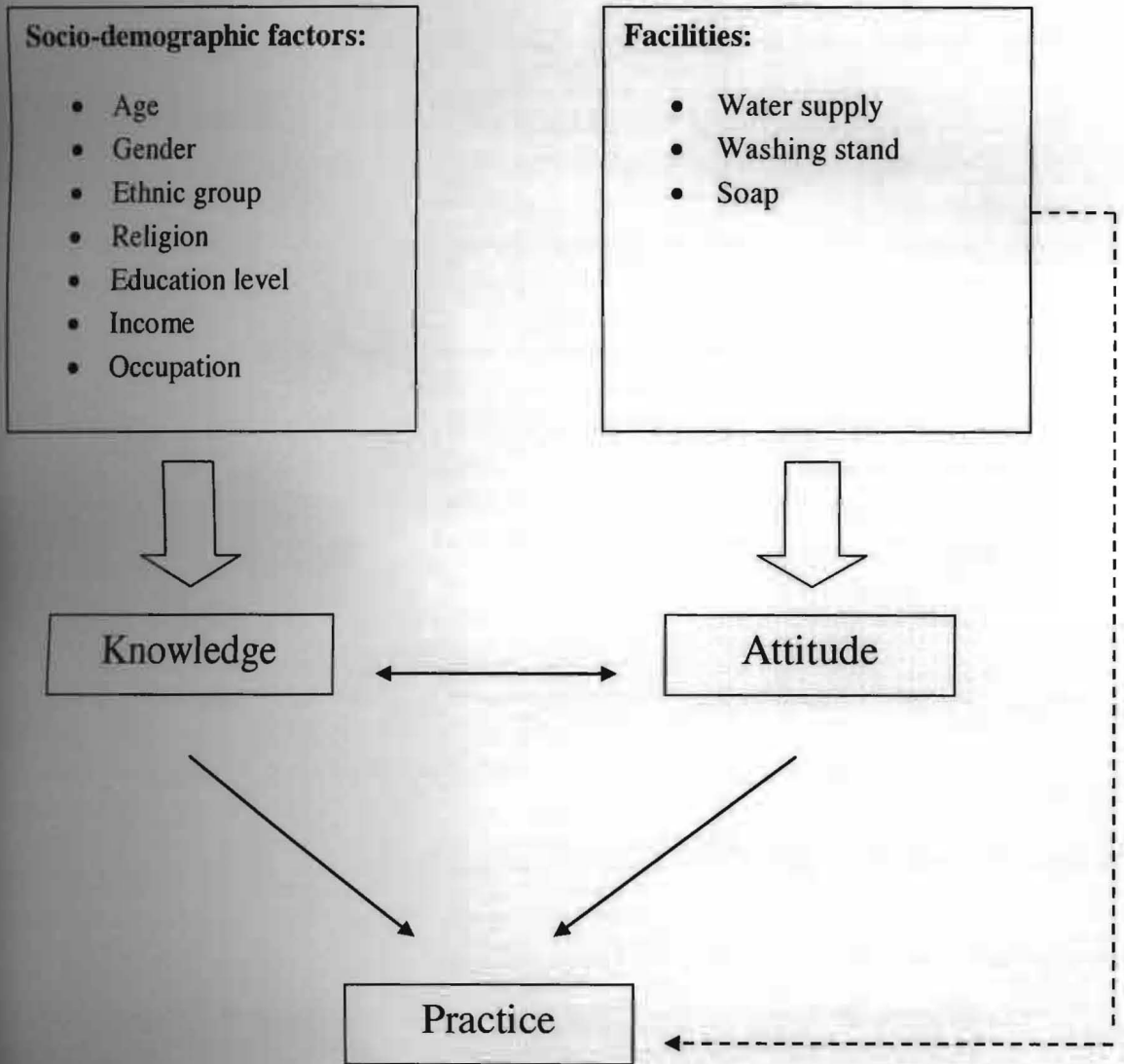
1.7.1 Independent Variables

- Age
- Gender
- Religion
- Ethnic group
- Highest educational level
- Occupation
- Household income
- Facilities availability (water, soap, washing stand)

1.7.2 Dependent Variables

- Knowledge
- Attitude
- Practice

1.8 Conceptual Framework



19 Operational Definitions

19.1 *Hand washing practice:*

The habit of cleansing the hands with water and soap or other detergent, for the purpose of removing dirt or microorganisms.

19.2 *Infectious disease:*

An illness transmissible (as from person to person) by direct contact with an affected individual or the individual's discharges or by indirect means (as by a vector).

19.3 *Knowledge:*

Information and skills acquired through experience or education, the theoretical or practical understanding of hand washing practiced at home.

19.4 *Attitude:*

A settled way of thinking or feeling, typically reflected in a person's behaviour towards hand washing practiced in community setting.

19.5 *Practice:*

Application of hand washing in community setting.