THE STUDY OF BEHAVIORS AND ENVIRONMENT CONDUCIVE TO HEALTH PROMOTING BEHAVIORS AMONG YOUTHS, HOUSEWIVES AND WORKERS IN THAILAND

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ABSTRACT

Health promotion is one of the responsibities of the Ministry of Health. The rapid changes in economics, social issues and environment has led to changes in lifestyle, population migration, consumers' behaviors, including people's health-related behaviors that have resulted in an increase in non-communicable diseases. The progress of non-communicable disease has been gradual and mostly due to changes in people's lifestyles and behavior which have been ignored by many people. Therefore, it is necessary that Thailand critically review, develop policies, plan and implement more effective health promotion programs emphasizing accessibility to high-risk and deprivated groups. Detailed information on health promoting behavior is very rare, therefore, it is expected that data on health promoting behaviors of adolescents, housewives, and industrial workers including information on factors, both personal and environmental, conducive to health (based on the Health Promotion Model (Pender and Pender, 1987) and PRECEDE-PROCEED Model (Green and Kreuter 1991)), would be very useful for health promotion program planning and implementing in the country.

The objectives of this project were to assess health promoting behaviors of youths, housewives, and workers and to study the relationship of health

promoting behaviors with the following factors: cognitive-perceptual factors, modifying factors and supportive environment.

The data collection was done through interviews by using interviewing schedules and observations of health promotion program activities. The sampled population consisted of 6,659 subjects; 1949 from Bangkok and 4,710 from 12 sampled provinces. From the total of 6,659, there were 2,430 youths (aged 15 - 19), 2,314 housewives, and 1,527 industrial workers.

From the analysis of the data, the following conclusions could be made: a high percentage of the sampled group had positive attitudes toward health and health promotion, internal health locus of control, life satisfaction level between neutral and high, defined "health" as "absence of illness" (a small percentage defined "health" as physical exercise, psychological well-being, non-smoking and eating behavior), valued the following health promotion behaviors at a low to slightly higher than moderate level: eating, physical exercise, stress management, accident prevention, social network and, health information seeking. The sampled group from Bangkok placed **higher value** on the use of food advertised as "health promoting" e.g. "Brand chicken soup", vitamins, etc., than the sampled groups from other provinces. The other provinces placed **higher value** than the sampled group from Bangkok on the following behaviors: indent below the use of sedatives, physical exercise, endurance, meditation, doing jobs/tasks without the pressures of urgency, and having friend(s)/trust worthy person(s) who can help solve personal problems. All of the three sampled groups from Bangkok and the other provinces were found to practice some undesirable health promoting behaviors. The most common health promoting behavior that more than 50 percent of every sampled group responded that they often practiced was "not eating raw meat". Other health promoting behaviors that more than 50 percent of some sampled groups often practiced were: not smoking, not drinking, not using sedatives, using safety hats and seatbelts. From this it is was concluded that there are various common risk behaviors in all three sampled groups that

should be targeted. There were many health promoting behaviors that the sampled groups placed high value on but did not practice often, e.g. physical exercise, having friends or other persons that they could consult concerning seeking health information, etc.. There was a statistically significant relationship between health promoting behaviors and the following factors: perceived self-efficacy, health promotion values, perceived benefits of health promoting behaviors, interpersonal influence, situation factors, health locus of control, and age.

From the analysis of data concerning organizations' health promotion activities and environments, it was found that most of the organizations sampled carried out various health promotion activities but did not focus on some important aspects. In addition, they questioned the effectiveness of their programs due to many problems, e.g. budget, lack of qualified health educators/health promotors, non-explicit policy, lack of coordination and collaboration between organizations, etc.. The administrators provided many valuable recommendations: the establishment of a public policy, regulations and rules that are conducive to health improvement, more public parks, availability and access to health information, and other environmental supports.

The results of this study revealed the significance and urgent need for the government to review and re-organize the health promotion program in the country by emphasizing: the formulation of a national health promotion policy, the provision of an adequate budget, the establishment of a group of representatives from both government and non-government organizations who can work coordinately and collaboratively in formulating policy, goals, and strategies more effectively with focus on target groups such as youths, women, industrial workers, and elderly groups. The main emphasis should be on the development of people's health promotion values using a variety of methods, media, information technology, etc., and developing environmental supports.

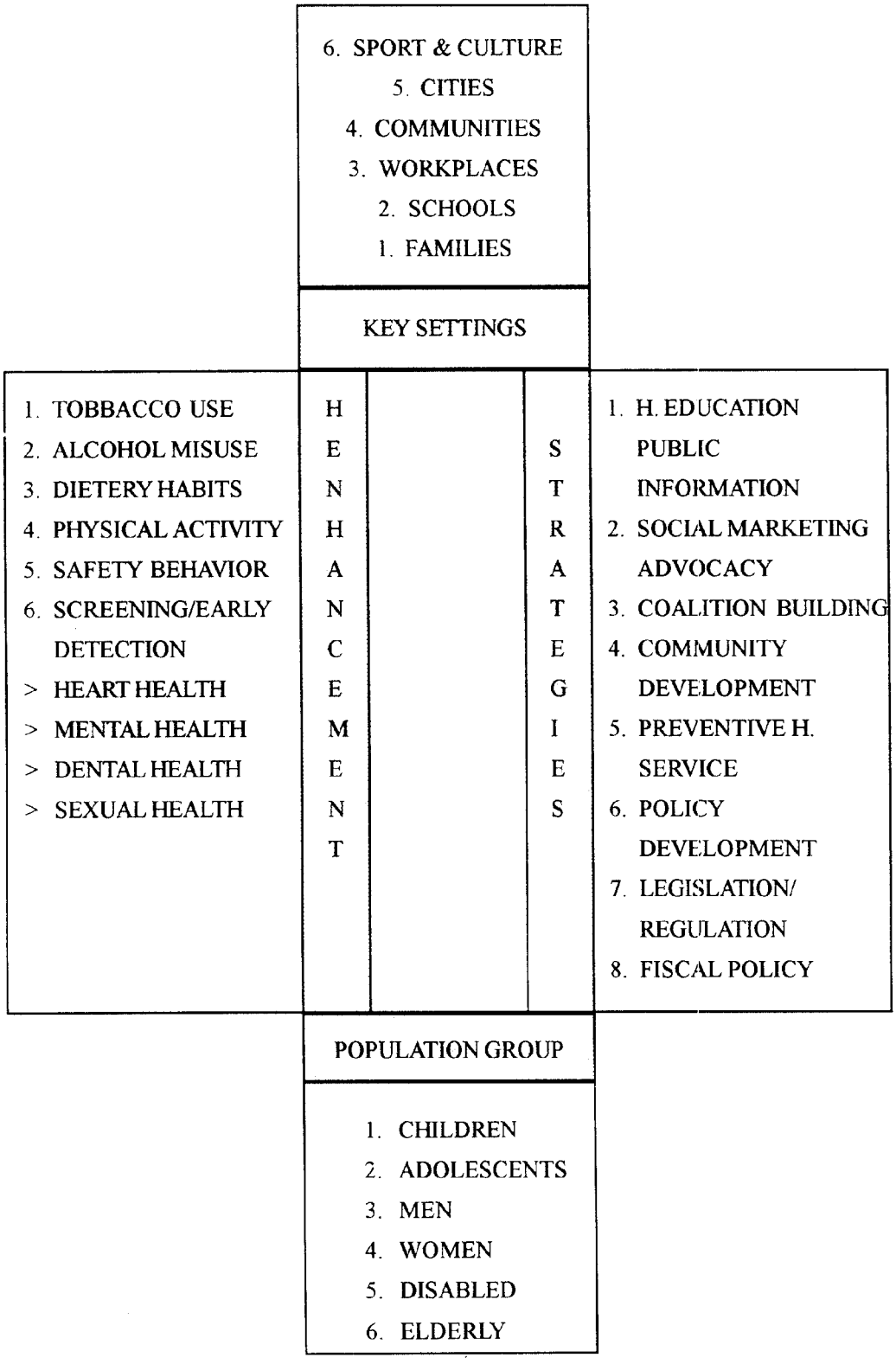
THE STUDY OF BEHAVIORS AND ENVIRONMENT CONDUCIVE TO HEALTH PROMOTING BEHAVIORS AMONG YOUTHS, HOUSEWIVES AND WORKERS IN THAILAND

1. BACKGROUND AND PROBLEMS

Health Promotion is one of the significant core tasks of the Ministry of Public Health in Thailand. The Ministry has set "health promotion" as a significant policy that needs to be developed. It has been realized globally that prevention is better than cure. With regard to prevention, the most important people that can instigate the practice of preventive health behaviors is the public themselves. In order to reach the goal of desirable health prevention behaviors in the people, responsible health promotion organizations need to have explicit policies, goals, plans, objectives, and effective strategies and methodologies. The organizations must also be aware of the people's health status and their health-related behaviors, especially among the deprivated and high-risk groups. Detailed information about health and health-related behaviors would be very beneficial for appropriate and effective programme planning and strategies. Thailand's present health situation has revealed that in order to effectively prevent health problems proactive policy that results in the organizion of various activities that can reach the target population rapidly and effectively is neccsary. Therefore, a study of health promotion behaviors and attitudes in various target population groups including reference to health promotion values and specific health service needs, is urgenty needed for planning national health promotion policy in order to prevent and solve health problems in our country.

An analysis of the the present health promotion programme indicated that the present health promotion strategies as being carried out in Thailand need to be more comprehensive at all levels, in particularly in health enhancement, key settings, target groups, and strategies. See Figure 1. For establishing

Figure 1 4 DIMENSIONS OF HEALTH PROMOTION



the policy, planning the programme, and organizing the planned programme, it is necessary to get the detailed base-line data about the target population in order to select the appropriate and effective strategies. Presently, populations being targetted in the health promotion programme included pregnant women and new-born babies. But the present situation in Thailand includes many problems among Thai youths and some deprivated populations regarding drug abuse, smoking, alcohol drinking, normal and deviated sexual behaviors, suicide, stress and emotional problems, injuries and accidents, etc.. In addition, there are environmental factors that promote such undesirable behaviors, both directly and indirectly, such as night-clubs, pubs, snooker-clubs, etc.. Marketing strategies in Thailand have been carried out strictly for business without appropriate interventions by the goverment to minimize deviant behavior exposure to youths and deprivated population groups. This includes advertisements of alcohol and other drinking brands that are advertised as "health promoting drinks", and include direct sales programmes.

The analysis revealed that the health promotion programmes presently operating in Thailand have not been done effectively and appropriately within certain settings such as family, school, work-place, city, community, and village. Therefore, the research team decided to target groups for studying health promotion behaviors which are allocated as high risk deprivated especially in terms of lacking opportunity to get appropriate health promotion information and services, and are faced with many physical, mental and social health-related problems. These groups include youths, housewives, and industrial workers. It was expected that information about health promotion behaviors in these groups would be very beneficial for formulating policy, planning, and organizing effective health promotion programmes that would lead to effective and sustainable behavioral changes. At present, there is no single organization, neither government nor nongovernment, and mechanism that emphasizes health in these groups adequately and effectively.

Even though there has been extensive research on various aspects of health behavior, there has been a lack of systematics, and appropriate standards and concepts regarding various variables in health behavior. Due to the different beliefs and theories related to behavioral sciences, there has been no standardized instruments for measuring health behaviors. This project aimed to study health promotion behaviors of youths, housewives, and industrial workers by applying Pender's Health Promotion Model (Pender, 1987) and the PRECEDE-PROCEED MODEL of Green and Kreuter (1991).

2. OBJECTIVES OF THE STUDY

The objectives of this programme were as follows:

1. To study health promotion practices of the following groups:
   - 1.1 Youths (15 - 19 year olds)
   - 1.2 Housewives; and
   - 1.3 Industrial workers
2. To study the influence of cognitive-perceptual factors, modifying factors and supportive environment on health promotion behaviors among youths, housewives, and industrial workers.

This research programme aimed to explain the variables based on the Health Promotion Behavior Model developed by Pender and Pender (Pender and Pender, 1987) as shown in Figure 2.

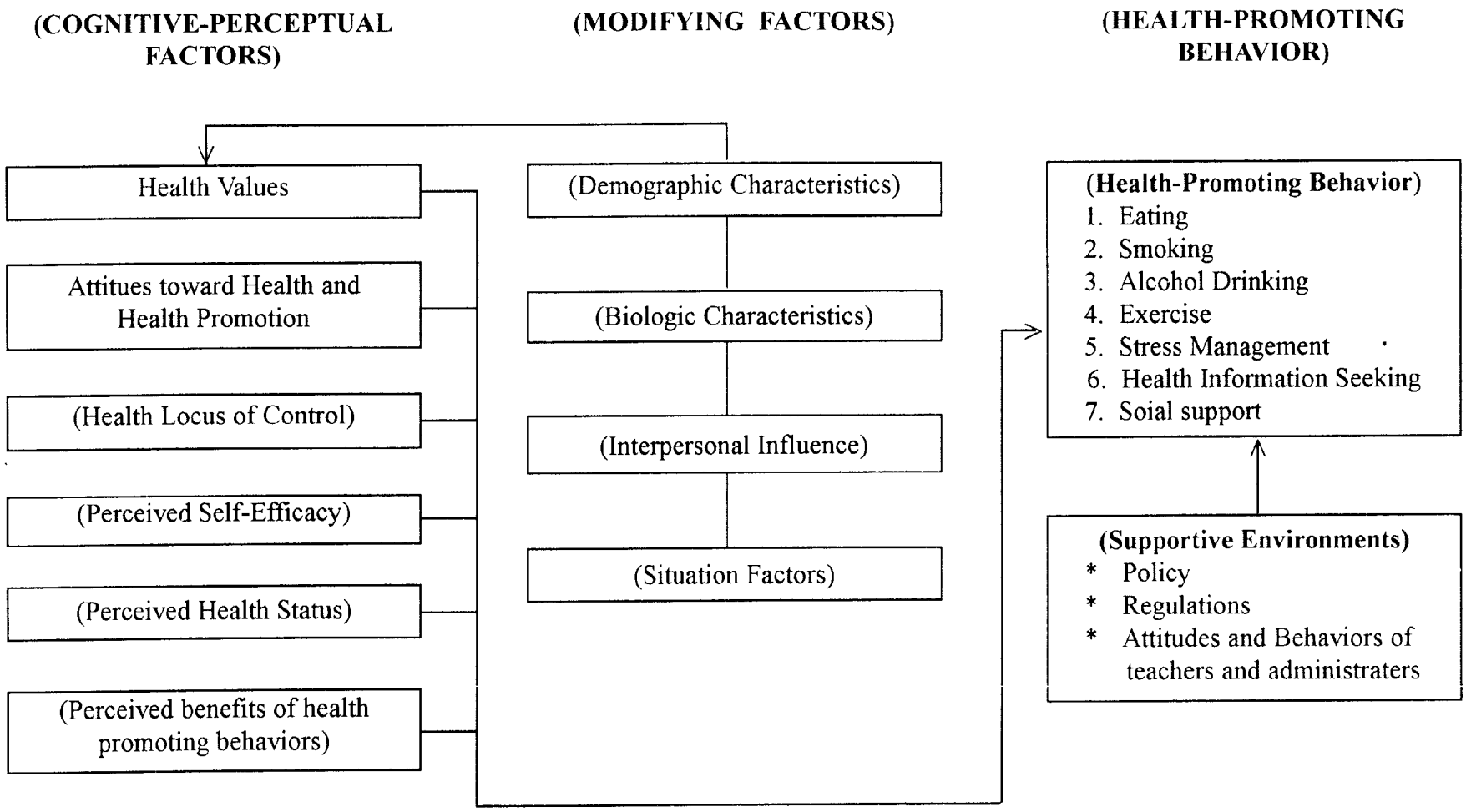


Figure 2 Conceptual Framework of Variables

3. RESEARCH METHODOLOGY

3.1 Research Design This study was designed as a qualitative and quantitative survey.

3.2 Sampled Population The sampled population was selected from various geographical regions of Thailand including Metropolitan Bangkok. Randomly selected groups of youths (12 - 19 year olds), housewives, and industrial workers were selected from 12 provinces.

3.3 Sampling Procedures The sampling procedures were done as follows:

3.3.1 First Stage Twelve provinces in which Ministry of Health's Regions were located were selected, including Metropolitan Bangkok.

3.3.2 Second Stage Two-Cluster sampling was applied to select two districts in each of the 12 provinces. In each province one Muang District was selected in addition to another district which met the criterium that a 30 bed hospital be located in it. From each province 10 households were selected for a total of 120. In each household the youth(s), housewife, and any adults (20 - 60 years in age) who were industrial workers were interviewed. The names of selected provinces and districts were showed in page 7.

The sampling within Metropolitan Bangkok was carried out by selecting 700 households from 10 selected regions. The three categories of the sampled population were interviewed.

The sampled population was composed of 6,659 subjects, 1949 from Bangkok and 4,710 from the 12 provinces. The sampled population consisted of 2,430 youths (15 - 19 year olds), 2,134 housewives, and 1,527 industrial workers.

4. QUALITATIVE STUDY

A qualitative study was also carried out in 27 secondary schools, 29 industries, and 16 special projects in communities within the sampled districts.

PROVINCE	DISTRICT
1. Smutpragarn	Amphor Muang, Prapradang
2. Supanburi	Amphor Muang, Sriprajan
3. Cholburi	Amphor Muang, Sri-racha
4. Rachaburi	Amphor Muang, Ban-Pong
5. Nakornrachasrima	Amphor Muang, Sri-kien
6. Khankan	Amphor Muang, Ban-Phai
7. Ubolrachathanee	Amphor Muang, Warinchamrap
8. Nakornsawan	Amphor Muang, Bunpotpaisai
9. Pissanuloke	Amphor Muang, Watbost
10. Lampang	Amphor Muang, Hangchut
11. Nakornsrithammarat	Amphor Muang, Parkpanung
12. Songkhla	Amphor Muang, Haadyai

5. METHODS OF COLLECTING DATA

The data were collected by administering questionnaires and observations. Data from other written sources were also included in the data set.

6. DATA-COLLECTING INSTRUMENTS

The data was collected via questionnaires which addressed the following variables:

6.1 Health Promotion Practices: eating, smoking, alcohol drinking, exercise, stress management, health promotion information seeking,

and social support. The 1 - 3 point scaling system was used (often, sometimes, and never).

6.2 Cognitive-Perceptual Factors:

6.2.1 Health and Health Promotion Values

6.2.2 Attitudes Toward Health and Health Promotion

6.2.3 Health Locus of Control

6.2.4 Perceived Self-Efficacy

6.2.5 Perceived Health Status

6.2.6 Perceived Benefits of Health Promoting Behaviors

6.3 Modifying Factors: The questionnaire also addressed demographic characteristics (e.g., age, sex, education, income, and occupation); biological characteristics (e.g., weight, types of diseases); interpersonal influences (communication with others about health promotion behaviors); and situation factors.

6.4 Supportive Environment: The qualitative study measured the supportive environment by interviewing the organizations' administrators concerning policies, regulations, health promotion activities, health promotion attitudes and practices of administrators/managers in schools, industries and various health promotion programmes.

The questionnaires were pretested on 100 housewives, youths, and industrial workers in 35 households in Amphor District, Kanjanaburi Province. The questionnaires were revised by analyzing the reliability of the cognitive-perceptual factors section. The total reliability was found to be .8086. The deletion and/or revision of each statement was based on the comparison of the values: "Alpha if item deleted", "Corrected Item-Total Correlation", "Reliability Coefficient", "Scale-Variance If Item-Deleted", and "Content Validity".

An analysis of discrimination power was also carried out by using item analysis. The statements that had lower t-values were subsequently deleted or revised.

The revised questionnaire was in-house pretested on 10 students in the Department of Health Education and Behavioral Sciences, Faculty of Public Health, Mahidol University before preparing the final draft to be used in the study.

7. DATA ANALYSIS

The data was statistically analyzed by a Multiple Classfication Analysis (MCA).

8. RESULTS

8.1 Health Promotion Behaviors

From the 20 health promotion behaviors listed, the respondents were asked to respond as to how often they had carried out each behavior within the last 3 months, i.e. often, sometimes, or never. In brief, the findings are as follows:

8.1.1 The first 5 health promotion behaviors that each sampled population group indicated they carried out often:

Youths (Percentage range 56.7 - 46.1)

1. Not eating half-raw/half-cooked food
2. Not smoking
3. Not drinking alcohol
4. Not using tranquilizer drugs
5. Not driving after drinking alcohol

Housewives (Percentage range 53.8 - 43.3)

1. Not smoking
2. Not drinking
3. Not driving after drinking alcohol
4. Not using traquilizer drugs
5. Eating high fibre food

Industrial Workers (Percentage range 50.1 - 43.4)

1. Not driving after drinking alcohol
2. Not using tranquilizer drugs
3. Not smoking
4. Not drinking alcohol
5. Balanced rest and work

The most common health promotion behaviors carried out in the three groups were: 1) not smoking; 2) not drinking; 3) not using tranquilizer drugs and 4) not driving after drinking alcohol. However, even though these behaviors were the most commonly practiced the percentage of subjects that actually carried out these behaviors was relatively low.

8.1.2 When the percentages of those who had often practiced specific behaviors were compared with those who indicated that they had practiced "sometimes" or "never", we found that the majority of the sampled population had not regularly practiced health promotion behaviors.

8.1.3 When the levels of health promotion behaviors were categorized as high, moderate, and sometimes, it was found that the majority of the sampled population was in the moderate level (89.3, 87.1 and 88.0 percent of **youths, housewives,** and **industrial workers** respectively, compared to 7.8, 8.8 and 9.3 percent of those who were in the high level). Among the groups in the high health promotion behavior practice level, it was found that the youth group had the lowest percentage when compared to the housewives and the industrial workers (7.8 percent compared to 8.8 and 9.3 respectively). It can be concluded that all of the three groups, from both Metropolitan Bangkok and the other provinces, practiced undesirable health promotion behaviors.

8.2 Health Promotion Values

The 1 - 3 scoring system was used to catagorize health promotion behaviors by asking the respondents to rate 20 health promotion behaviors as high, moderate, or low in terms of importance. The findings were as follows:

8.2.1 The mean value for the health promotion behavior ratings was 2.3 (1 - 3 point rating scale).

8.2.2 Among the groups of youths, housewives, and industrial workers, a high percentage valued the following health promotion behaviors as moderate to low: eating, exercise, stress management, and accident prevention.

8.2.3 The groups in Metrolopolitan Bangkok had a higher percentage of high ratings allocated on "Eating food that was misbelieved to be health promoting food", i.e. Brand's chicken soup, vitamins, etc., than the other provinces. In the other provinces, health promotion behaviors that were valued as high at a higher percentage than Bangkok's respondents were: not using tranquilizer drugs, regular exercise "at least 20 minutes per day" controlling anger, meditation, not rushing activities, and having a friend or a trusted person who one can consult with.

8.2.4 It was found that 68.8, 64.3 and 65.5 percent of the youths, housewives, and workers resepeitively, valued health promoting behaviors as **moderate,** whereas 29.4, 34.0, and 33.1 percent valued health promoting behaviors as **high.** Of the 3 groups the youths had the lowest percentage of their responses allocated in the moderate and high value levels.

8.2.5 The majority of the youths, housewives, and industrial workers valued health promotiong behaviors at the **moderate** to **low** level.

8.2.6 When a comparison of the data concerning health promotion practices and values was made, it was found that there were many behaviors that had been valued as high by the respondents **but** were not regularly practiced. The behaviors were: regular exercise of at least 20 minutes/day, "having friend(s)/trusted person(s) who can consult with, and health promotion infor

mation seeking behaviors. It was also found that approximately 50 % of the sampled groups did not value health promotion behaviors as high, and placed even less value on the following health practices: muscle relaxation, anger control, meditation, and not rushing activities.

8.3 Attitudes Toward Health and Health Promotion

8.3.1 By rating the data representing attitudes, the sampled population was found to have positive attitudes toward health and health promotion ($\bar{x}$ = 2.3 from a 1 - 3 scoring system).

8.3.2 When the attitude scores were allocated into the 3 categories-1) positive (satisfaction), 2) uncertain, and 3) negative (dissatisfaction)-it was found that 79.5 percent of the total sampled population had positive attitudes, and 20.4 and 0.1 percent had uncertain and negative attitudes, respectively, toward health and health promotion.

8.3.3 About 76 % of the youths, and 83.1 and 81.1 % of the housewives and workers respectively, responded with positive attitudes toward health and health promotion, and the rest responded with neutral/uncertain attitudes.

8.4 Health Locus of Control

The health locus of control was measured by the "Health Locus of Control Scale" which was developed by modifying the Multi-Dimensional Health Locus of Control developed by Wallstone. In brief the findings were as follows:

8.4.1 A high percentage of the sampled population had a **high** internal health locus of control ($\bar{x}$ = 2.7) which was higher than those who had an external or by-chance locus of control ($\bar{x}$ = 2.5 and 1.8 respectively).

8.4.2 It was found that the percentage of the respondents who indicated that they agree with the statements concerning internal health locus of

control was **higher** than those who answered that they agree with the statements concerning "external health locus of control" and "by-chance health locus of control".

8.4.3 A high percentage of all three sampled groups had a high internal health locus of control but there were some respondents especially in the industrial workers and housewives who believed that illness is caused by chance.

8.5 Perceived Health Status

The data obtained on "perceived health status" were based on various perceptive attitudes such as: perception about his/her own health; specific health problems, e.g. high blood pressure, heart disease, obesity, diabetes etc.); life satisfaction; and perception about "good health". Results drawn from the data on the respondents' perceived health status were as follows:

8.5.1 68.4 % of the youths, 62.9 % of the housewives and 70.4 % of the industrial workers, perceived themselves as healthy.

8.5.2 6.7 % of the youths, 8.3 % of the workers, and 13.8 % of the housewives responded that they have problems concerning high blood pressure, obesity, diabetes mellitus, high cholesteral, or other chronic diseases.

8.5.3 With regard to "being worryed about your health," approximately 50 % of the sampled population responded "a little worried" (47.4 - 65.6). Some responded "not at all" (27.4, 21.2 and 19.1 % of the youths, industrial workers, and housewives, respectively).

8.5.4 The life satisfaction data were categorized using a rating scale of 1- 7. It was found that a high percentage of all three sampled groups had a positive feeling about their life at present. The range of satisfaction was found to be between moderate and "best".

8.5.5 24.4, 17.6 and 19.8 % of the youths, housewives, and workers, respectively, indicated that their life at present was "best". 82.6 % of the youths, 73.3 % of the housewives, and 77.2 % of the industrial workers

indicated that their life at present was between moderate and "best" (i.e. scores 5 - 7).

8.5.6 With regard to the "Definition of Health", it was found that 71.5, 69.6 and 72.0 per cent of the youths, housewives and workers, respectively, defined health as "no illness". 57 % of the youths, 35.6 % of the housewives and 44 % of the workers defined health as "psysical exercise", and 28.3 % of the youths, 16.7 housewives, and 22.4 % of the workers responded "no smoking". None of the respondents defined health as "no drinking", "accident prevention", "health examination"or "stress management".

8.6 Perceived Benefits of Health Promoting Behaviors

8.6.1 Data on attitudes regarding the perceived benefits of health promoting behaviors were obtained by asking the respondents to rate the benefits of practicing 20 health promotion behaviors as "high", "moderate" or "low". Approximately 6 % of the sampled population perceived that there were moderate benefits to the behaviors and approximately 35 % perceived that the benefits of practice were high.

8.6.2 Among the sampled groups of youths, housewives and workers, 34.2, 37.3 and 36.0 per cent, respectively, perceived health promotion benefits as "high" and 64.9, 61.9 and 63.3 per cent, respectively, perceived them as moderate.

8.7 Perceived Self-Efficacy

The perceived self-efficacy of the respondents was determined by asking the question "in the future, do you think you will be able to practice health promotion behaviors (the 20 stated behaviors)?". The three response choices were "yes", "uncertain", and "no". The data indicated the following:

8.7.1 The health promotion behaviors that a high percentage (50.6 - 79.0 %) of the respondents indicated that they are able to practice were:

1. Eating food from all 5 food groups
2. Eating high fibre food
3. Not smoking
4. Not drinking
5. Not using tranquilizer drugs
6. Regular physical exercise
7. Adequate rest
8. Having trusted friend(s)/person(s) for consultating with
9. Helmet use
10. Seatbelt use
11. Not driving after drinking alocohol, and
12. Health information seeking

8.7.2 The health promoting behaviors that a low percentage (< 50 %) of the sampled population indicated that they are able to do were:

1. Not eating high fat food
2. Weight control
3. Not rushing activities
4. Muscle relaxation
5. Controlling Anger

The reasons some of the sampled population responded that they are not able to do some of the health promoting behaviors may be due to many factors such as personal skills, perceived benefits of practice, self-confidence, environmental support, time and opportunity available, etc.

8.7.3 When the perceived self-efficacy scores were allocated into the 3 categories **high, moderate** and **low,** the following was found: in the youth group 45.5, 54.0 and 0.5 % had perceived self-efficacies of **high, moderate** and **low** respectively; in the housewife group, the percentages of those who perceived their self-efficacy as **high, moderate** and **low** were 48.1, 51.3 and

0.6, respectively; for the workers, the percentage within each cartegory were 53.0, 46.5 and 0.5, respectively.

8.8 Factors Influencing Health Promoting Behaviors

The results of the Multiple Classification Analysis (MCA) were as follows:

8.8.1 The modifying factors (age, sex, biological characteristics, interpersonal influence, and situation factors) were found to explain the variance in health promoting behavior by approximately 6 per cent. It was also found that the 'Interpersonal Influence factor' was the most influential factor (Beta = 0.18).

8.8.2 The sampled population who were subjected to **high** interpersonal influence had reported that they practice health promoting behaviors **more than** those who received only **moderate** or **low** interpersonal influence. The sampled population who were in a better supportive environment had practiced health promoting behaviors **more than** those who were in **moderate** and **low** supportive environments. With regard to sex, it was found that females practiced health promoting behaviors **more** than males.

8.8.3 Among the cognitive-perceptual factors, the Multiple Classification Analysis showed that every factor in this group (health and health promotion values, attitudes toward health and health promotion, health locus of control, perceived self-efficacy, perceived health status, and perceived benefits of health promoting behaviors) can explain the variance in health promoting behaviors significantly by approximately 24 % (Multiple $R^2 = 0.243$, $p < 0.001$). Those who possessed a high level of health and health promotion values and attitudes, health locus of control, perceived health status, perceived self-efficacy, and perceived benefits of health promoting behaviors, practiced health promoting behaviors **more often than** those who possessed a **moderate level** or low level of the aforementioned variables. Among these variables, the signifi

cance of each can be ranked in descending order as follows: perceived self-efficacy, health and health promotion values, perceived benefits of health promoting behaviors, attitudes, perceived health locus of control, perceived-obstacles for health promoting behaviors and perceived health status.

8.8.4 The same pattern of results was found when the MCA was performed by selecting 8 variables from Models 1, 2 and 3 (as presented in 8.8.1, 8.8.2 and 8.8.3). Respondents who were in the **"high category levels"** for all factors, **except age,** had practiced health promoting behviors **more often** than those who were in a lower category level. It was also found that the 8 factors could explain the variance in health promoting behaviors by 26.50 per cent (Multiple $R^2 = 0.265$). The significance of each can be ranked in descending order as follows: perceived self-efficacy, values, perceived benefits, interpersonal influence, situation factors, attitudes, perceived health locus of control and age.

8.8.5 The results of the Multiple Classification Analysis of health promoting behaviors when carried out for each sampled group, showed the same pattern when the analysis was carried out on the total sampled group. The first 5 factors that influence health promoting behaviors in each group were ranked as follows:

1. Perceived self-efficacy
2. Health values
3. Perceived benefits of health promoting behaviors
4. Interpersonal influence
5. Situation factors

8.9 Environment Conducive to Health Promotion Behaviors

The study of environmental factors conducive to health promoting behaviors was carried out by selecting schools, industries, and communities that organized health promotion programmes in the selected sub-districts. The 72

selected organizations/projects composed of 27 schools, 29 industries, and 16 community projects. The data were collected through interviewing and observations. The respondents who provided information were 33 school directors/ principles, 26 industrial managers, 5 public health personnel/village health volunteers, programme coordinators, department heads, deputy managers, and committee chairpersons. The results were presented briefly as follows:

8.9.1 The health promotion activities that the sampled groups reported had been carried out were: annual medical check-up (69.4%), nutrition education (62.5 %), sports for health programme (62.5 %), and school health programme (52.8 %). Other activities such as: health promotion programme for the aging, smoking cessation programme, stress management, running for health, health promotion programme for worker, etc., were organized by only a few organizations.

8.9.2 The opinions of organizations' administrators concerning achievement and the failure of health promotion programmes indicate that a high percentage of them felt the responsible factors were: organization policy, number and quality of personnel, budget and source of funds, and coordination among various organizations. Other important points that were indicated were: human resource development, planning skills, implementation, follow-up/monitoring, supervision, counselling, and the provision of equipment, materials, recommodations, and environmental support conducive to health promoting behaviors. This viewpoint fits the PRECEDE-PROCEED Model for health promotion programme planning developed by Green and Kreuter (1991). The Model has been applied to develop health promotion programmes in communities, schools, and workplaces in many states in the United States of America and in Canada, and in the Vic Health Programme in Victoria, Australia. Development of an oppropriate health promotion model for Thailand should be carried out. Nevertheless, the application of acheivement experiences from other countries is also highly relevant.

8.9.3 With regard to many organizations health promotion policies, it was found that a high percentage of them did not have policies pertaining to health insurance for school teachers, and training programmes and management for food service providers. For the community health promotion programmes, a high percentage of the programme administrators indicated that they have policies regarding health promotion activities (more that 70 %), except for the provision of facilities for physical exercise, meditation, religious activities, health promotion foods services, and health insurance for workers. The data from industries that were sampled provided similar results.

8.9.4 The majority of the administrators who provided the information perceived the definition of "good health" as "no illness" (88.9%, 93.8%, and 86.2% for administrators of schools, communities, and industries, respectively). In addition "good health" was defined by some as "seatbelt use", "physical exercise", "eating appropriate foods", etc..

8.9.5 The public policies suggested by the administrators as being supportive of health promotion behaviors were: laws and regulations for prohibiting alcohol and cigarette sales; penalties for not abiding by the laws, adequate public parks, providing a continnous source of updated health promotion information; the provision in every workplace for space and equipment and time for physical exercise, and no alcohol sales on Buddhist Day and other national religious days.

8.9.6 Regarding the support needed from the government concerning health promotion programmes, the administrators suggested the following aspects: policies, regulations, laws; human resource development, environmental support conducive to health promotion behaviors (e.g. space for physical exercise, effective and continual educational activities, and the provision of adequate physical exercise equipment.

8.9.7 Detailed activities of some health promotion programmes organized by both government and non-government organizations (e.g. the Healthy Cities of Metropolitan Bangkok Physical Exercise Programme of the

Community Committee, Chonburi Province, Health Promotion Programme of Nakornrajchasrima Province, etc.) were examined. It was found that there were no activities that provide for all the members of the community but only for some interested or small groups. The integration of health promotion concepts/activities into existing programmes needs to be carried out, e.g. nutrition, annual medical check-up, stress management, no smoking, no alcohol drinking, etc.. An intensive programme for community participation and social mobilization for public groups and government personnel does not exist. In government organized programmes the problems and obstacles found were: insufficient budget, lack of quality of health personnel, the lack of coordination among organizations, and insufficient monitoring and evaluations.

8.9.8 The data from the environmental study were similar to the opinions of the sampled respondents who indicated that they agree with the idea that the organizations/schools/workplaces should realize the significance of health promotion programmes and provide better health promotion activties and services.

9. RECOMMENDATIONS

From the results presented, the following recommendations are:

9.1 General Recommendations

9.1.1 The Thai government should have explicit policies that expand to cover activities for the needy and the deprivated groups of people. In addition, policies need to be developed which cover the development and modification of health promotion behaviors with consideration of longitudinal effects on youths, society and national economics.

9.1.2 Health promotion related organizations should review their own policies, goals, strategies and activities in order to evaluate whether or not

they have covered the "at risk" population and to determine if the programme effectiveness has been achieved satisfactorily.

9.1.3 Seminars and academic meetings among government, nongovernment and interested organizations need to be organized in order to develop strategic planning for health promotion programmes in the country. Previous concepts that could be applied for development of a health promotion program in Thailand are as follow: the concepts and recommendations of the Ottawa Charter for Health Promotion developed by the First International Meeting on Health Promotion in Canada; the concepts and opinions of Thai academics regarding health promotion (e.g. Prof.Dr.Praves Vasi (1994, 1996)); the conclusions of the Seminar on Visions and Health Promotion Reform for Thai Society (1996), the experiences of the VicHealth, etc..

9.1.4 The development of a body of knowledge regarding health promotion is necessary and should be carried out in coordination and collaboration with educational institutions who are responsible for personnel training and health promotion research, the Ministry of Public Health, the Ministry of Education, other related Ministries, research institutions, and non-government organizations (e.g. Thailand Health Promotion Institute, National Public Health Foundation, Health System Research Institute, etc.). Research on health promotion is urgently needed and should be carried out by at least one organization.

9.1.5 The establishment of public policy conducive to health promotion behaviors is in urgent need of development at every level (i.e.,from national to community levels). Some public policies can be initiated at the community level to develop educational programmes concerning appropriate community based concepts for health promotion. Community organizations, both formal and informal, (e.g. Sub-district Administrative Committee (Or.Bo.To), Subdistrict Council, housewife committee, etc.), can help formulate public policies and develop environmental supports that are conducive to health promotion behaviors in the people of the community.

9.1.6 At every level in the community, a **"civil society"** should be developed in order to strengthen the community's potency and skills in relation to problem analysis and solving, and to create a community net-working system and lead to the social movement towards healthy community (Choochai and Supavongse, 1966). The concept of a "Civil Society" should be explored and developed nationally.

9.1.7 The Information/Education/and Communication (IE & C) programme should be strengthened through the use of state-of-the art information technology (e.g. Internet, multi-media electronic networking, etc.). Personal health care, health promotion behaviors, motivation for health promotion interest and values, and services that can measure people's health status should be emphasized.

9.1.8 Health promotion campaigns utilizing mass media (e.g. radio, television, etc.) should be performed in collaboration with non-government organizations and should include information on health promotion services available in the community.

9.1.9 All hospitals should provide health screening programmes for the people in order to inform them of their health status which will lead to an awareness and positive attitude towards health promotion practices.

9.1.10 From the Multiple Classification Analyses (MCA) it was found that perceived self-efficacy, health and health promotion values, perceived benefits of health behaviors, attitudes, perceived health locus of control, and perceived health status influenced health promoting behaviors of the sampled population. These cognitive- perceptual factors and modifying factors should be developed among youths, housewives, and industrial workers. The concepts from the PRECEDE-PROCEED Model created by Green and Kreuter (1991) should be modified and comprehensive health promotion programmes in schools, communities, and workplaces, etc., should be established.

With regard to cognitive-perceptual and modifying factors, it was found that some of the sampled subjects possess undesirable characteristics in which effective strategies and activities are needed to address.

9.1.11 Health promotion programmes should be launched in schools, communities, and workplaces that address the present health status and health problems of the country. Curriculums, methods, activities, rules, regulations and policies are in urgent need of reform. Non-communicable diseases are due to long-term behaviors or environmental exposures. Therefore it is necessary to promote and develop appropriate health behaviors early in life. The development of non-communicable diseases preventive behaviors should commence when a child enters kindergarten and continue into higher education. This is an important issue that needs to be reviewed and improved, as more effective alternatives for changing health promotion behaviors are needed (e.g. life-skills development).

9.2 Recommendations for Specific Groups

9.2.1 Youths

The data concerning health promotion behaviors in the youth group showed that a low percentage of youths (56.7%) had practiced health promoting behaviors "regularly" over the previous 3 months. The behaviors were: physical exercise, management of stress and emotional problems, helmet use, seatbelt use, having trusted friend/person to consult with, health promotion information seeking, weight control, anger control, meditation, etc..

Data on self- reported practices when compared to the respondents' health and health promotion values, indicated that there are many health promotion behaviors that the respondents valued as high but practiced irregularly (i.e. low). The Multiple Classifications Analyses (MCA) indicated that value is a highly influential factor of health promotion behaviors. Develop

ing health promotion values among youths should be one of the strategies of the health promotion programmes.

Even though the data showed that 75.3 % of the sampled youths had positive attitudes towards health and health promotion, 24.5 per cent were in the "moderate/neutral level" which indicates a need for improvement.

The majority of the students defined health as "no illness" and a minority of them defined health as "physical exercise" and "no smoking". No respondents perceived "no alcohol drinking", "accident prevention", "medical check-up" or "stress management" as definitions of health. These findings revealed an urgent need for proactive and intensive health promotion education programmes for youths/adolescents especially with regard to a high-risk environments (e.g. night clubs, computer games, etc.) that may motivate youths to practice undesirable behaviors. The suggestions for health promotion education for youths are presented as follows:

Youths in the Formal Education System

Schools and educational institutions for youths should organize and develop health promotion programmes relevant to the present and the future health problems of the country. The existing school health programmes focus on 3 components: health education instruction, health services, and healthful school living. New concepts in comprehensive school health education reveal a need for reorienting the educational institutions' programmes such that they coincide with national health policy and provide supportive environments for students, teachers and other school personnel. The components of a school health promotion programme should consist of a variety of activities as shown in Figure 3, the ACCESS School Health Promotion Model, developed by Elaine J. Stone (1990, p.300).

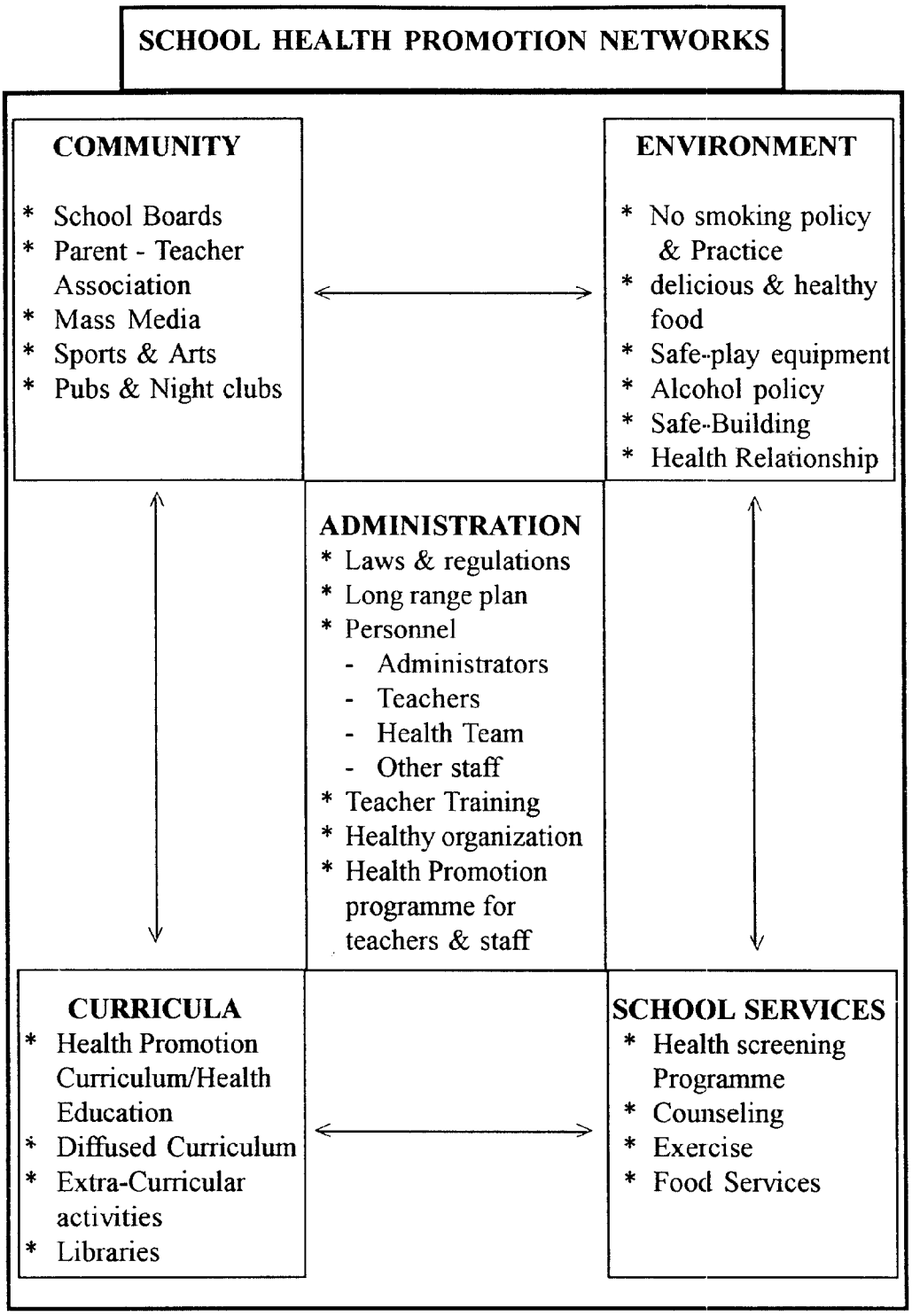


Figure 3 Access Model of Health Promotion School Programme

Adapted from Stone, E.J. "Access: Key Stones for School Health Promotion" **Journal of School Health** Sept. 1990: 60: 7: 300.

ACCESS is different from other models as it includes administrative needs. In addition, it identifies a broader category of school services, including the school food service programme as well as traditional school health services. Furthermore, the traditional term "school health programme", has the word "promotion" added to reflect accurately the promotion of healthy behavior and reflect more accurately the direction of public health movement in the country.

The ACCESS model is ideal for a school health programme because of its broad-based organizational structure for planning, implementing, and evaluating school health promotion programmes. Activities and functions categorized as the five major keystones are interrelated, as interactive pathways exist between them.

The **administrative** and **community** keystones should be developed first in the programme to provide an administrative structure and support base for other areas. The **Environmental** keystone should be viewed as the next most important area for development because it sets a tone for students and school personnel. With these three keystones in place, the **curricula** and **school services** can function at an optimal level because the inconsistencies between what is learned in the classroom and what is done outside have been ameliorated. The ACCESS model is flexible and allows for more areas to be added, depending on the school district or individual school needs.

In order to further develop the school health promotion programme, the Ministry of Education and other educational institutes must have policies addressing health promotion, and they must provide supports for the programme including adequate qualified personnel and financial support. With regard to the curriculum, it must be improved in terms of content, learning opportunities, and evaluaton. Life-skills development and empowerment programmes should be developed within the school health curriculum. School health promotion networking is another measure for developing health promotion programmes in schools in the country.

Youths Outside the Formal Education System

The development of values, attitudes, perceptions and health promoting behaviors among youths outside the education system should be the responsibility of government and non-government organizations including other social and family institutions. Only a few health promotion activities have been directly carried out with groups of youths/adolescents. An example of a health promotion programme targetted at youths and adolescents in the country was the anti-smoking campaign organized by the Anti-Smoking Foundation in which various strategies and media were used including the establishment of policies, laws, and regulations to support the programme (e.g. locating appropriate places for "No Smoking" areas such as "No Smoking" office, "No-Smoking" flights, "No Smoking" restaurant, etc). This programme was the only programme that was, to some extent, successful when compared to other health promotion programmes, especially in terms of developing awareness of the public. Nevertheless, there is a need for other health promoting programmes to be developed that address similar behaviors (e.g. non-alcohol drinking programme, physical exercise for health, food consumption, stress management, etc.). Social marketting theory should be applied to planning and organizing the programmes including the integration of health promotion concepts into sports and cultural programmes as was acheived in the VicHealth programme in Australia where varieties of media were used to reach a large proportion of the public. The sustainability of the programme is another important aspect that needs to be addressed in the development of the programme. Most importantly, the national policy should be clear and environmental supports must be provided.

9.2.2. Housewives

The results indicated by the data concerning cognitive-perception factors and health promoting behaviors among the sampled housewives was the

same for most variables for the youths and the workers. However 17.6 % of the housewives indicated that their life-satisfaction was "best" when compared with 24.4 and 19.8 per cent of youths and workers, respectively. With regard to health promotion values, it was found that 34.0 % of the housewives valued health promoting behaviors as **high** compared to 29.4 % and 33.1 % of the youths and workers, respectively. It was concluded that the housewives health promoting behaivors and cognitive-perceptual factors were unsatisfactory and in need of development. Housewives represent a special group that demands special attention as they are significant for developing desirable health values, attitudes, and perceptions in the family members. Desirable health promoting behaviors should begin in the home and should include supportive home environments conducive to health promoting behaviors (e.g. eating habits, physical exercise, no smoking, no alcohol drinking, safety behaviors, psychological environments for mental health and stress manangement).

Health promotion education activities for housewives may be accomplished through community housewife groups. The education should emphasize health promotion behavior changes.

9.2.3. Industrial Workers

The data regarding health promotion values, perceptions, attitudes, health locus of control, life satisfaction, and health promoting behaviors among the industrial workers was not different from the youths' and housewives'. With regard to health promoting behaviors, it was found that 33.1 % of the workers placed **high** values on health promoting behaviors and 65.5 per cent of them placed **moderate** values on health promoting behaviors. When an analysis of the practice of health promoting behaviors was performed it was found that the first 5 behaviors that a large percentage (50.1%) of the workers **practiced regularly** were: not driving after drinking alcohol, not using tranquilizer drugs, not smoking, not drinking alcohol, and balanced rest and work. With regard to

other health promoting behaviors such as physical exercise, eating habits, stress and emotional problems management, and safety behavior, less than 43.4 % of the workers responded that they practiced regularly. The results of the analysis indicated a need for developing health promotion education and cognitive-conceptual factor development in industrial workers in order to develop the following health promotion behaviors: accident prevention in the workplace, good mental health, alcohol nonuse, smoking and drug nonuse, physical fitness, life-style changes, communicable disease prevention, prevention of work related disease (e.g. due to chemical substances, or radioactive substances, etc.), a healthy organization in relation to communication, human relations, ethics, and occupational health and safety. At present there is no worksite or workplace in Thailand that is organizing a comprehensive health promotion programme. Many workplaces have (or are developing) occupational health and safety programmes in which the prevention of diseases directly caused by working is emphasized rather than utilizing comprehensive health promotion concepts as previously indicated.

The successful development of health promotion programmes in the workplace depends on national policies, understanding the interests of workplaces' owners/administrators, financial resources, and the cooperation of health organizations and other government and non-government organizations.

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APPENDIX

Table 1 Distribution of Number and Percentage of Respondents By Socio-Demographic Variables

Socio-Demographic Variables		Number	Percent
Age			
12 - 18		1,823	27.4
19 - 25		1,151	17.3
26 - 53		3,226	48.4
54+		459	7.0
$\bar{x}$	30.2		
S.D.	13.8		
	Total	**6,659**	**100.0**
Sex			
Male		2,698	40.5
Female		3,961	59.5
	Total	**6,659**	**100.0**
Samples N = 6,659			
Youths		2,430	36.5
Housewives		2,314	34.7
Industrial Workers		1,527	-
Others		1,915	28.8
Education			
Not Finish Primary School		416	6.2
Primary School		2,377	35.7
Jounior High School		950	14.3
Senior High School		381	5.7
Certificate/Diploma		410	6.2
Bachelor Degree		354	5.3
Higher than Bachelor Degree		354	5.3
Studying in Secondary School, Vocational or Higher Education Institute		1,737	26.1
	Total	**6,659**	**100.0**

Table 1 (Continued) Distribution of Number and Percentage of Respondents By Socio-Demographic Variables

Socio-Demographic Variables	Number	Percent
Occupation		
Government/Semi-government	420	6.3
Private Business	544	8.2
Industrial Workers	1,527	22.9
Traders	597	9.0
Did not work	965	14.5
Non-permanent Wage-earners	869	13.0
Students	1,737	26.1
Total	**6,659**	**100.0**
Family Income/month (Baht)		
Below 5,000	2,439	36.6
5,000 - 10,000	1,691	25.4
10,001 - 20,000	833	12.5
20,001 - 30,000	1,696	25.5
$\bar{x}$ 9,808.7		
S.D. 11,542.6		
Total	**6,659**	**100.0**

Table 2 Levels of Attitudes Toward Health and Health Promotion By Types of Sampled Respondents

Types of the Samples / Levels of Attitude Scores	Youths N (%)	Housewives N (%)	Workers N (%)	Others N (%)	Tatal N (%)
Low (11 - 17)	2	0	0	1	3
	(0.1)	(0.0)	(0.0)	(0.1)	(0.1)
Moderate (18 - 28)	593	392	280	374	1359
	(24.4)	(16.9)	(18.3)	(19.5)	(20.4)
High (29 - 33)	1835	1922	1247	1540	5297
	(75.5)	(83.1)	(81.7)	(80.4)	(79.5)
Total	2430	2314	1527	1915	6659
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
$\bar{X}$	29.8	30.3	30.2	30.1	30.1
S.D.	2.4	2.3	2.2	2.3	2.3

Table 3 Levels of Internal Health Locus of Control By Types of Sampled Respondents

Types of the Samples / Levels of Internal Health Locus of Control	Youths	Housewives	Workers	Others	Tatal
	N (%)	N (%)	N (%)	N (%)	N (%)
Low (6 - 9)	4	7	3	5	16
	(0.2)	(0.3)	(0.2)	(0.3)	(0.2)
Moderate (10 - 15)	571	493	396	487	1551
	(23.5)	(21.3)	(25.9)	(25.4)	(23.3)
High (16 - 18)	1855	1814	1128	1423	5092
	(76.3)	(78.4)	(73.9)	(74.3)	(76.5)
Total	2430	2314	1527	1915	6659
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
$\bar{x}$	16.3	16.3	16.2	16.3	16.3
S.D.	1.6	1.6	1.7	1.7	1.6

Table 4 Levels of External Locus of Control By Types of the Sampled Respondents

Types of the Samples / Levels of External Health Locus of Control	Youths	Housewives	Workers	Others	Tatal
	N (%)	N (%)	N (%)	N (%)	N (%)
Low (6 - 9)	49	34	38	60	143
	(2.0)	(1.5)	(2.5)	(3.1)	(2.1)
Moderate (10 - 15)	1277	897	685	872	3046
	(52.6)	(38.8)	(44.9)	(45.5)	(45.7)
High (16 - 18)	1104	1383	804	983	3470
	(45.4)	(59.2)	(52.6)	(51.4)	(52.2)
Total	2430	2314	1527	1915	6659
$\bar{x}$	14.8	15.5	15.2	15.1	15.1
S.D.	2.4	2.3	2.5	2.5	2.4

Table 5 Levels of By-Chance Locus of Control By Types of the Samples Population

Types of the Samples / Levels of By-Chance Locus of Control	Youths	Housewives	Workers	Others	Tatal
	N (%)	N (%)	N (%)	N (%)	N (%)
Low (6 - 9)	968	552	483	602	2122
	(39.8)	(23.9)	(31.6)	(31.4)	(31.9)
Modurate (10 - 15)	1284	1370	877	1085	3739
	(52.8)	(59.2)	(57.4)	(56.7)	(56.1)
High (16 - 18)	178	392	167	228	798
	(7.4)	(16.9)	(20.0)	(11.9)	(12.0)
Total	2430	2314	1527	1915	6659
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
$\bar{x}$	10.5	11.8	11.1	11.2	11.1
S.D.	2.9	3.2	3.1	3.1	3.1

Total 6 Perceived Health Status By Types of Sampled Respondents

Types of the Samples / Perceived Health Status	Youths N (%)	Housewives N (%)	Workers N (%)	Others N (%)	Tatal N (%)
1. Do you Think you are healthy ?					
Yes	1663	1455	1075	1363	4481
	(68.4)	(62.9)	70.4)	(71.2)	(67.3)
No	174	422	161	199	795
	(7.2)	(18.2)	(10.5)	(10.4)	(11.9)
Don't know/	593	437	291	353	1383
Uncertain	(24.4)	(18.9)	(19.1)	(18.4)	(20.8)
Total	2430	2314	1527	1915	6659
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
2. Do you have the following health problem ?					
2.1 Hypertension					
Yes	64	246	80	127	437
	(2.6)	(10.6)	(5.2)	(6.6)	(6.7)
No	1923	1666	1202	1449	5038
	(79.1)	(72.0)	(78.8)	(75.7)	(75.5)
Don't know/	443	402	245	339	1184
Uncertain	(18.3)	(17.4)	(16.0)	(17.7)	(17.8)
Total	2430	2314	1527	1915	6659
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)

Total 6 (Continue) Perceived Health Status By Types of Sampled Respondents

Types of the Samples / Perceived Health Status	Youths	Housewives	Workers	Others	Tatal
	N (%)	N (%)	N (%)	N (%)	N (%)
2.2 Heart Disease					
Yes	54	147	43	62	263
	(2.2)	(6.4)	(2.8)	(3.2)	(3.9)
No	1948	1744	1258	1526	5218
	(80.2)	(75.4)	(82.4)	(79.7)	(78.4)
Don't know/	428	423	226	327	1178
uncertain	(17.6)	(18.2)	(14.8)	(17.1)	(17.7)
Total	2430	2314	1527	1915	6659
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
2.3 Obesity (Over-weight					
Yes	164	320	126	157	641
	(6.7)	(13.8)	(8.3)	(8.2)	(9.6)
No	1860	1622	1202	1474	4956
	(76.5)	(70.1)	(78.7)	(77.0)	(74.5)
Don't know/	406	372	199	284	1062
uncertain	(16.8)	(16.1)	(13.0)	(14.8)	(15.9)
Total	2430	2314	1527	1915	6659
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
2.4 Diabetes					
Yes	26	102	30	49	177
	(1.1)	(4.48)	(2.0)	(2.6)	(2.7)
No	1984	1787	1269	1546	5317
	(81.6)	(77.2)	(83.1)	(80.7)	(79.8)
Don't know/	420	425	228	320	1165
uncertain	(17.3)	(18.4)	(14.9)	(16.7)	(17.5)
Total	2430	2314	1527	1915	6659
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)

Total 6 (Continue) Perceived Health Status By Types of Sampled Respondents

Types of the Samples / Perceived Health Status	Youths	Housewives	Workers	Others	Tatal
	N (%)	N (%)	N (%)	N (%)	N (%)
2.5 High Cholesterol					
Yes	27	77	28	57	161
	(1.1)	(3.3)	(1.8)	(3.0)	(2.4)
No	1919	1740	1249	1481	5140
	(79.0)	(75.2)	(81.8)	(77.3)	(77.2)
Don't know/	484	497	250	377	1358
uncertain	(19.9)	(21.5)	(16.4)	(19.7)	(20.4)
Total	2430	2314	1527	1915	6659
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
2.6 Other chronic disease					
Yes	35	76	34	33	144
	(1.4)	(3.3)	(2.2)	(1.7)	(2.2)
No	159	158	89	99	416
	(6.5)	(6.8)	(5.8)	(5.2)	(6.2)
Don't know/	2236	2080	1404	1783	6099
uncertain	(92.1)	(89.9)	(92.0)	(93.1)	(91.6)
Total	2430	2314	1527	1915	6659
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)

Total 7 Levels of Health-Related Worry By types of Sampled Respondents

Types of the Samples / Levels of Health-Related Worry	Youths	Housewives	Workers	Others	Tatal
	N (%)	N (%)	N (%)	N (%)	N (%)
1. No worry at all	667	442	323	432	1541
	(27.4)	(19.1)	(21.2)	(22.6)	(23.1)
2. Some	1255	1233	825	1034	3522
	(51.6)	(55.3)	(54.0)	(54.0)	(52.9)
3. Neutral/Moderate	305	268	185	223	796
	(12.6)	(11.6)	(12.1)	(11.6)	(12.0)
4. More	150	306	150	180	636
	(6.2)	(13.2)	(9.8)	(9.4)	(9.5)
5. Most	53	65	44	46	164
	(2.2)	(2.8)	(2.9)	(2.4)	(2.5)
Total	2430	2314	1527	1915	6659
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)

Total 8 Levels of Life-Satisfaction By Types of Sampled Respondents

Types of the Samples / Levels of Life-Satisfaction		Youths	Housewives	Workers	Others	Tatal
		N (%)	N (%)	N (%)	N (%)	N (%)
Best	7	594	407	303	346	1347
		(24.4)	(17.6)	(19.8)	(18.1)	(20.2)
	6	825	658	446	535	2018
		(34.0)	(28.4)	(29.2)	(27.9)	(30.3)
	5	588	632	430	535	1755
		(24.2)	(27.3)	(28.2)	(27.9)	(26.4)
Moderate	4	275	448	253	371	1094
		(11.3)	(19.4)	(16.6)	(19.4)	(16.4)
	3	92	104	61	74	270
		(3.8)	(4.6)	(4.0)	(3.9)	(4.1)
	2	29	46	20	36	111
		(1.2)	(2.0)	(1.3)	(1.9)	(1.7)
Worst	1	27	19	14	18	64
		(1.1)	(0.8)	(0.9)	(0.9)	(1.0)
Total		2430	2314	1527	1915	6659
		(100.0)	(100.0)	(100.0)	(100.0)	(100.0)

Total 9 Perceived Definition of "Health" By Types of Sampled Respondents

Types of the Samples / Perceived Definition of "Health"	Youths	Housewives	Workers	Others	Tatal
	N (%)	N (%)	N (%)	N (%)	N (%)
1. No illness	1737	1617	1099	1392	4746
	(71.5)	(69.9)	(72.0)	(72.7)	(71.3)
2. Doctor/Nurse	459	418	296	358	1235
	(18.9)	(18.1)	(19.4)	(18.7)	(18.5)
3. Hospital	329	293	207	278	900
	(13.5)	(12.7)	(13.6)	(14.5)	(13.5)
4. Psysical exercise	1384	824	672	873	3081
	(57.0)	(35.6)	(44.0)	(45.6)	(46.3)
5. Financial Status	731	1000	712	800	2531
	(30.1)	(43.2)	(46.6)	(41.8)	(38.0)
6. Happiness	1471	1249	869	1024	3744
	(60.5)	(54.0)	(56.9)	(53.5)	(56.2)
7. Good mental health	1453	1174	812	1022	3649
	(59.8)	(50.7)	(53.2)	(53.4)	(54.8)
8. No smoking	725	433	368	463	1621
	(29.8)	(18.7)	(24.1)	(24.2)	(24.3)
9. Foods	1100	871	639	782	2753
	(45.3)	(37.6)	(41.8)	(40.8)	(41.3)
10. Others	33	48	21	27	108
	(1.4)	(2.1)	(1.4)	(1.4)	(1.6)

Total 10 Levels of Health Promotion Values By Types of Sampled Respondents

Types of the Samples / Levels of Health Promotion Values	Youths	Housewives	Workers	Others	Tatal
	N (%)	N (%)	N (%)	N (%)	N (%)
Low (20 - 30)	44	40	22	29	113
	(1.8)	(1.7)	(1.4)	(1.5)	(1.7)
Moderate (31 - 50)	1672	1487	1000	1330	4489
	(68.8)	(64.3)	(65.5)	(69.5)	(67.4)
High (51 - 60)	714	787	505	556	2057
	(29.4)	(34.0)	(33.1)	(29.0)	(30.9)
Total	2430	2314	1527	1915	6659
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
$\bar{x}$	46.2	46.9	46.9	46.4	46.5
S.D.	7.0	7.0	6.8	6.8	6.9

Total 11 Levels of Health Promoting Practices By Types of Sampled Respondents

Types of the Samples / Levels of Health Promoting Practice	Youths N (%)	Housewives N (%)	Workers N (%)	Others N (%)	Tatal N (%)
Low (20 - 30)	70	96	41	61	227
	(2.9)	(4.1)	(2.7)	(3.2)	(3.4)
Moderate (31 - 50)	2169	2015	1344	1696	5580
	(89.3)	(87.1)	(88.0)	(88.6)	(88.3)
High (51 - 60)	191	203	142	158	552
	(7.8)	(8.8)	(9.3)	(8.2)	(8.3)
Total	2430	2314	1527	1915	6659
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
$\bar{x}$	41.7	41.5	41.8	41.6	41.6
S.D.	6.1	6.4	6.3	6 2	6.2

Total 12 Levels of Perceived Benits of Health Promotion Practices By Types of Sampled Respondents

Types of the Samples / Levels of Perceived Benefits	Youths	Housewives	Workers	Others	Tatal
	N (%)	N (%)	N (%)	N (%)	N (%)
Low (20 - 30)	22	19	10	13	54
	(0.9)	(0.8)	(0.7)	(0 7)	(0.8)
Moderate (31 - 50)	1577	1433	966	1211	4221
	(64.9)	(61.9)	(63.3)	(63.2)	(63.4)
High (51 - 60)	831	862	551	691	2384
	(34.2)	(37.3)	(36.0)	(36.1)	(35.8)
Total	2430	2314	1527	1915	6659
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
$\bar{x}$	47.5	48.0	48.2	47.9	47.8
S.D.	6.6	6.5	6.3	6.4	6.5

Total 13 Levels of Perceived Self-Efiicacy By Types of Sampled Respondents

Types of the Samples / Levels of Perceived Self-Efficacy	Youths	Housewives	Workers	Others	Tatal
	N (%)	N (%)	N (%)	N (%)	N (%)
Low (20 - 30)	11	15	7	12	38
	(0.5)	(0.6)	(0.5)	(0.6)	(0.6)
Moderate (31 - 50)	1311	1186	711	996	3493
	(54.0)	(51.3)	(46.5)	(52.0)	(52.5)
High (51 - 60)	1108	1113	809	907	3128
	(45.5)	(48.1)	(53.0)	(47.4)	(47.0)
Total	2430	2314	1527	1915	6659
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
$\bar{x}$	49.4	49.6	50.5	49.7	49.6
S.D.	6.7	6.7	6.8	6.9	6.8

Table 14 Analysis of Variance for Health Promoting Behaviors By Modifying Factors (N = 6659)

Source of Variation	Sum of Squares	df	Mean Square	F	P-value
Main Effects	15290.26	10	1529.06	41.27	< 0.001
Age (V1)	228.15	3	76.05	2.05	0.104
Sex (V2)	134.14	1	134.15	3.62	0.057
Biological Characteristics (V3)	60.63	2	30.31	0.81	0.441
Interpersonal Influence (V4)	7976.06	2	3988.03	107.66	< 0.001
Environmental Factors (V5)	4591.93	2	2295.96	61.98	< 0.001
2-way Interactions	1312.08	39	33.64	0.90	0.634
V1 - V2	57.51	3	19.17	0.51	0.670
V1 - V3	463.23	6	77.20	2.08	0.052
V1 - V4	47.13	6	7.85	0.21	0.973
V1 - V5	130.81	6	21.80	0.58	0.740
V2 - V3	247.70	2	123.85	3.34	0.036
V2 - V4	40.05	2	20.02	0.54	0.582
V2 - V5	71.13	2	35.56	0.96	0.383
V3 - V4	129.23	4	32.30	0.87	0.480
V3 - V5	245.95	4	61.48	1.66	0.157
V4 - V5	59.61	4	14.90	0.40	0.807
Explained	16602.76	49	338.83	9.14	< 0.001
Residual	244816.12	6609	37.04		
Total	261418.88	6658	39.26		

Table 15 Multiple Classification Analysis of Health Promoting Behaviors By Modifying Factors (N = 6659, $\bar{x}$ = 41.63)

Independent Variable	N	Unadjusted Deviation	Adjustaed for Independents Deviation
Age (Year) (Eta^2 = 0.0025 Beta = 0.03)			
12 - 18	1823	0.35	0.05
19 - 25	1151	-0.55	-0.40
26 - 30	1908	0.02	0.11
54+	1777	-0.02	0.09
Sex (Eta^2 = 0.0001 Bata = 0.02)			
Male	2698	-0.11	-0.17
Female	3961	0.08	0.12
Biological Characteristics (Eta^2 = 0.0004 Beta = 0.02)			
Low	75	-1.00	-0.87
Moderate	2068	0.01	0.04
High	4516	0.01	-0.01
Personal Influence (Eta^2 = 0.0361 Beta = 0.18)			
Low	1727	-1.85	-1.69
Moderate	4673	0.51	0.45
High	259	3.15	3.06
Environmental Factor (Eta^2 = 0.0256 Beta = 0.14)			
Low	350	-2.56	-2.32
Moderate	3809	-0.49	-0.47
High	2500	1.11	1.03

Multiple R Squared (R^2)	=	**0.058**
Multiple R	=	**0.242**
Grand Mean	=	**41.627**

Table 16 Analysis of Variance for Health Promoting Behaviors By Cognitive-Perceptual Factors (N = 6659)

Source of Variation	Sum of Squares	df	Mean Square	F	P-value
Main Effects	36471.38	14	4533.67	152.17	< 0.001
Value	9485.22	2	4742.78	159.18	<0.0001
Attitude	181.78	2	90.89	3.05	0.048
Perceived Health Locus of Control	154.60	2	77.30	2.59	0.075
Perceived Self-Efficacy	17478.23	2	8739.11	293.32	<0.001
Perceived Health Status	65.44	2	32.72	1.09	0.334
Perceived Benefits	5136.13	2	2568.06	86.19	<0.001
Perceived Barriers	110.31	2	55.15	1.85	0.157
Explained	63471.38	14	4533.67	152.17	<0.001
Residual	197947.49	6644	29.79		
Total	261418.88	6658	39.26		

Table 17 Multiple Classification Analysis of Health Promoting Behaviors By Cognitive-Perceptual Factors (N = 6659 $\bar{x}$ = 41.63)

Independent Variable	N	Unadjusted Deviation	Adjustaed for Independents Deviation
Values (Eta^2 = 0.1225 Beta = 0.21)			
Low	113	-8.30	-5.73
Moderate	4489	-1.17	-0.65
High	2057	3.02	1.74
Attitude (Eta^2 = 0.0049 Beta = 0.03)			
Low	3	-8.29	-5.10
Moderate	1359	-0.79	0.25
High	5297	0.21	-0.06
Health Locus of Control (Eta^2 = 0.0036 Beta = 0.03)			
Low	13	-2.70	-2.14
Moderate	4762	-0.20	-0.07
High	1884	0.52	0.20
Perceived Self Efficacy (Eta^2 = 0.152 Beta = 0.28)			
Low	38	-11.10	-6.37
Moderate	3498	-2.13	-1.57
High	3128	2.52	1.83
Perceived Health Status (Eta^2 = 0.0004 Beta = 0.02)			
Low	345	-0.37	0.37
Moderate	6305	0.02	-0.02
High	9	-2.85	-1.35
Perceived Benefits (Eta^2 = 0.1225 Beta = 0.16)			
Low	54	-10.05	-4.54
Moderate	4221	-1.42	-0.67
High	2384	2.75	1.29
Perceived Barriers (Eta^2 = 0.0009 Beta = 0.02)			
Low	25	0.17	1.77
Moderate	4599	-0.11	0.04
High	2035	0.24	-1.12

Multiple R Squared (R^2)	**= 0.243**
Multiple R	**= 0.493**
Grand Total	**= 41.627**

Table 18 Analysis of Variance for Health Promoting Behaviors By Eight Selected Variables

Source of Variation	Sum of Squares	df	Mean Square	F	P-value
Main Effects	69399.37	17	4082.31	141.18	<0.001
Age	247.00	3	82.33	2.84	0.036
Personal Influence	2854.67	2	1427.33	49.36	<0.001
Environmental Factors	2045.07	2	1022.53	35.36	<0.001
Values	8189.13	2	4094.56	141.61	<0.001
Attitudes	255.60	2	127.80	4.42	0.012
Perceived Health Locus of Control	163.52	2	81.76	2.82	0.059
Perceived Self-Efficacy	15260.70	2	7630.35	263.89	<0.001
Perceived Benefits	4793.13	2	2396.56	82.88	<0.001
Explained	69399.37	17	4082.31	141.18	<0.001
Residual	192019.51	6641	28.91		
Total	261418.88	6658	39.26		

Table 19 Multiple Classification Analysis of Health Promoting Behaviors By Eight Selected Predictors

Independent Variable	N	Unadjusted Deviation	Adjustaed for Independents Deviation
Age (Year) (Eta^2 = 0.0025 Beta = 0.03)			
12 - 18	1823	0.35	0.27
19 - 25	1151	-0.55	-0.33
26 - 30	1908	0.02	-0.06
54+	1777	-0.02	0.00
Personal Influence (Eta^2 = 0.0361 Beta = 0.11)			
Low	1727	-1.85	-0.95
Moderate	4673	0.51	0.23
High	259	3.15	2.21
Environmental Factors (Eta^2 = 0.0256 Beta = 0.09)			
Low	350	-2.62	-1.90
Moderate	3809	-0.49	-0.22
High	2500	1.11	0.60
Value (Eta^2 = 0.1225 Beta = 0.20)			
Low	113	-8.30	-5.38
Moderate	4489	-1.17	-0.60
High	2057	3.02	1.61
Attitude (Eta^2 = 0.0049 Beta = 0.03)			
Low	3	-8.29	-4.44
Moderate	1359	-0.79	0.35
High	5297	0.21	-0.09
Perceived Health Locus of Control (Eta^2 = 0.0036 Beta = 0.03)			
Low	13	-2.70	-1.57
Moderate	4762	-0.20	-0.09
High	1884	0.52	0.23
Perceived Self-Efficacy (Eta^2 = 0.1521 Beta = 0.26)			
Low	38	-11.10	-5.98
Moderate	3493	-2.13	-1.48
High	3128	2.52	1.72
Perceived Benefits (Eta^2 = 0.1225 Beta = 0.16)			
Low	54	-10.05	-4.50
Moderate	4221	-1.42	-0.64
High	2384	2.75	1.24

Multiple R Squared (R2)	**= 0.265**
Multiple R	**= 0.515**
Grand Mean	**= 41.627**

Table 20 Ranking Orders of Eight Selected Variables Affecting on health Promoting Behaviors By Types of the Sampled Population

Variable	Total	Housewives	Youths	Workers
1. Perceived Self-Efficacy	1	1	1	2
2. Health Promotion Values	2	2	2	1
3. Perceived Benefits	3	3	3	3
4. Personal Influence	4	5	4	5
5. Environmental Factors	5	4	5	4
6. Attitudes toward Health & Health Promotion	6	8	6	8
7. Perceived Health Locus of Control	7	7	7	6
8. Age	8	6	8	7