IJNHS

INTERNATIONAL JOURNAL OF NURSING AND HEALTH SCIENCE

CHRISTIAN UNIVERSITY OF THAILAND

VOLUME 2 ISSUE 2 JULY-DECEMBER 2014 ISSN: 2408-1035

International Journal of Nursing and Health Science Christian University of Thailand

Volume 2 Issue 2 July - December 2014 ISSN : 2408-1035

Owner Christian University of Thailand
Office PO. Box 33 Donyaihom, Nakhon Pathom Thailand. 73000

Editor-In-Chief Assistant Professor Dr. Janjira Wongkhomthong

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1. To publish knowledge, concepts, theories, innovations, guidelines and new technologies in nursing and health science
2. To be a supportive resource for academics, students, and instructors in health institutions and organizations in Thailand and international
3. To promote research and development of knowledge in nursing and health science
4. To be a center of knowledge and experienced exchange among health professional scholars, academics and practitioners

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Printing

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We would like to invite you to submit papers for consideration of publication in the international journal of nursing and health science and/or subscribe the IJNHS.

Yours sincerely,

Assistant Professor Dr. Janjira Wongkhomthong
President of Christian University of Thailand
and Editor-in-chief International Journal of Nursing and Health Science (IJNHS)

Content

Factors of Sufficient Living Affecting Happiness in the Members of the Seventh District under the Church of Christ in Thailand (C.C.T.)

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Abstract

This descriptive correlational research aimed to determine the factors of sufficient living affecting happiness in the members of the Seventh District under the Church of Christ in Thailand (C.C.T.). Samples taken were the 400 church members in 7 geographical areas under the Seventh District of the C.C.T. during the period of May to June 2015. The research instrument consisted of 4 sections and 73 items, which was evaluated for content validity by using Item-Objective Congruence index (IOC) and for reliability by using Cronbach's alpha coefficient. Data analysis was done by using Descriptive statistics: Frequency, percentage, and mean, and using Inferential statistics: Independent sample t-test, ANOVA, Pearson's correlation coefficient, and Multiple Regression analysis. The research findings showed that the samples had a moderate level of sufficient living (= 3.42, S.D. = .27) and also a moderate level of happiness (= 3.47, S.D. = .36). Correlational analysis showed that the factors of sufficient living had a positive correlation with happiness in a moderate degree ($r = .626$, $p < .001$), arranging from high to low correlation as the following: Stewardship, Giving, Contentment, Grateful attitudes, Psychological immunity, and Reasoning ability, $r = .550^{***}$, $.546^{***}$, $.374^{***}$, $.363^{***}$, $.243^{***}$, $.200^{***}$ respectively, $p < .001$. Statistical analysis showed that there were five factors with predictive ability—Stewardship, Giving, Contentment, Psychological immunity, and Grateful attitudes, based on the regression equation: Predicted happiness level (Y) = .862 + (.209) Stewardship+ (.252) Giving+ (.108) Contentment+ (.082)Psychological immunity+ (.091) Grateful attitudes. This regression equation had a value of predictive ability of 44.2 percent (R^2 .442, $p < .05$) with a significant Multiple Regression Coefficient value(R) of.665, $p < .05$. Recommendations from this research are that Christian education on Biblical Economics for pastors, church leaders, and members in the Seventh District of the C.C.T. should be provided so that their level of happiness can be raised. Emphasis should be placed on Stewardship and Giving because these two factors correlate most with the happiness level.

Keywords : Sufficient living, Happiness, Christians

Background and Significance of the Research

In the midst of advance development of technology and materialism, human lives should be more comfortable. Yet in reality, they still have to work very hard and thus most of them are still tired, confused, and stressed with the burdens of life. The happiness of Thai people tends to decline, while their stress increases as circumstances become more undesirable. The outcome is that the mental health of the Thaisis getting worse every day. Research findings by the ABAC Poll reported in May 2010 showed that the Gross National Happiness (GNH) of the Thai people tended to decline to a lower degree than before. The reason for this is relevant to today's globalization that affects all kinds of people around the world, driving them to adjust themselves among the social and economic fluctuations under capitalism and materialism. Regretfully, most people in the developing countries including Thailand are unable to cope with the situations and in fact they are still living a difficult life, striving to overcome poverty. The result is the widened gap between the rich and the poor, the increase of debtburden, migration, and slums, which make the quality of life decline. The subsequent impact on society are the rising events of crimes, drug trafficking, prostitution and human trafficking. The root of all these problems is the lack of reasoning abilities, psychological immunity, grateful attitudes, wisdom, morality, self-esteem, and unaware of the dignity of others. This is indeed a crisis that should be addressed by urgent economic and social resolution. Hence, modern development focuses on a holistic development of the country centered at human resource development. Therefore, the National Social and Economic Development Plan 11 (2555-2559) was declared at a time when Thailand faced with a situation of social, economic and environmental changes, which produced faster and more severe consequences than ever before, Thai society agreed that we should adopt the philosophy of sufficiency economy to be the main theme in developing the country. The expectation is that Thai people will have sufficient mind, reasoning abilities, and psychological immunity, and will have to potential to implement a sustainable national development in the future.

Nevertheless, research proves that development focusing on increasing revenue or raising social status does not always make people happier (Monkol Saiyakul and Chayanit Rungrangsee, 2550). Furthermore, the difference between expected income and the actual income produces an effect on the individual happiness. If the difference becomes more, happiness becomes less. This is because the increased difference makes people more greedy, more envious and depressed. The researcher believes that if people in society can reduce the values of materialism while increase the virtue of sufficient mind and the sufficient living, they will certainly have more happiness of life.

"Sufficient mind" is the specific kind of mind cultivated by the Philosophy of Sufficiency Economy. It has three components: reasoning abilities, psychological immunity, and grateful attitudes. Only those who have "sufficient mind" can produce "sufficient behavior" (Duangduoen Panthumnavin, 2552). So if you never cultivate each person with such sufficient mind, it is hard to expect that one will express sufficient behavior in the midst of such capitalism and materialism as today. Thus, it is important and urgent to develop a sufficient mind in the Thai people in order to develop the country. One important social support to cultivate sufficient mind is the King's Philosophy of Sufficiency Economy, which encourages modesty, reason, immunity, morality and knowledge.

Research relating to the application of the Philosophy of Sufficiency Economy in Thai people's

life affirmed that living by the philosophy is correlated with subjective happiness of farmers (Chanadda Hoengthong, 2551). This supports the findings of Kanokwan Kansa (2550), which finds that sufficient living has a positive correlation with the quality of life of the villagers in Tambon Kokkung, Amphur Mueang Suang, Roi Et Province. Moreover, the findings of Wutikorn Wutichai's study also affirms that the Philosophy of Sufficiency Economy can be applied into practice in both the family level and the community levels by arranging in the form of activities (Wutikorn Wutichai, 2551).

For Thai Christians, self-sufficient lifestyle is further supported by the Biblical Economics, which has three key elements, namely contentment, stewardship, and giving. But so far as the researcher has reviewed the literature, no research has been done on the relation between factors of sufficient living and happiness in the context of Christian population. This leaves a gap of knowledge yet to be fulfilled. This motivated the researcher to explore using the conceptual framework of Philosophy of Sufficiency Economy and the sufficient mind to create a new framework that focuses on the relationship between two sets of independent variables and one set of dependent variable. Firstly, the two sets of independent variables include personal characteristics of the factors of sufficient living, which consists of sufficient mind and Biblical Economics. Sufficient mind has three factors: Reasoning abilities, psychological immunity, and giving. Secondly, the dependent variable is happiness, which has four components: Physical well-being, Mental well-being, social well-being, and spiritual well-being. The researcher decided to choose the church members in the Seventh District of the C.C.T. as the research population because it is has the greatest in size with the greatest numbers of churches, members, and distribution in Thailand. Thus, the research findings can be best referred back to the Thai Christian population.

Research Objectives

The research objectives are to analyze the level of sufficient living, the level of happiness, the relation between different personal characteristics and happiness level, the correlation between factors of sufficient living and happiness level, and the abilities of these factors in predicting the happiness level of members in the Seventh District of the C.C.T.

Conceptual framework

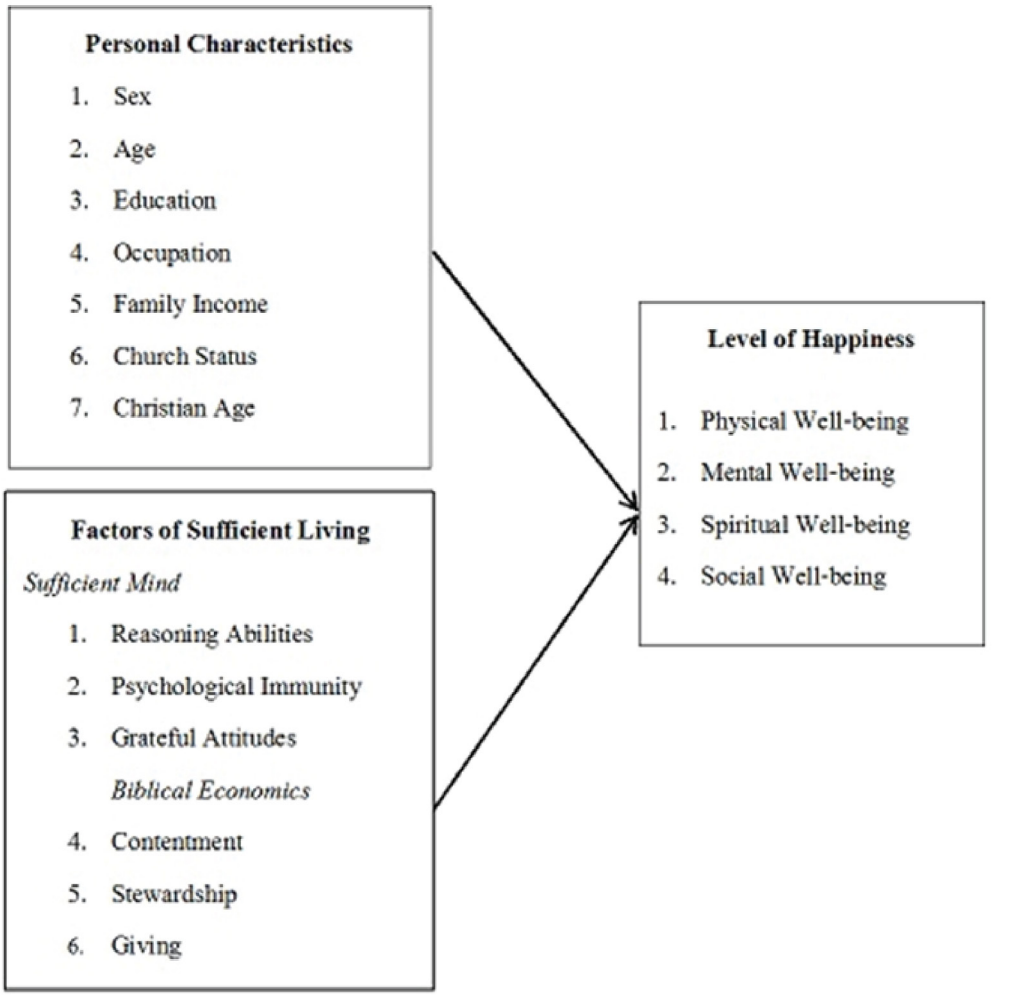

Figure 1 : Conceptual framework of the study

Research Methods

This is a quantitative and correlational study using questionnaire as the research instrument to collect data from the samples, who are the church members under the Seventh District of C.C.T. The venues where data was collected are the local churches and preaching points under the District locating in seven areas in the country: Bangkok Metropolitan Region Area, the Upper Northern Area, the Lower Northern Area, The North Eastern Area, The Central Area, the Southern Area, and the Hmong Area. Data collection began on 4 May and was completed on 24 June, 2015.

Population and Sampling Design

Populations in this research were the members in the Seventh District of the C.C.T. in seven geographical areas of the country. The Seventh District has 73 local churches and 44 preaching points, altogether 103, with 10,043 full members registered in 2014 (The Seventh District of the C.C.T.,2014: 85-86). Sample size was determined from Taro Yamane's formula (Yamane, 1973: 725) at the confident level of 95% to be 385 samples. Yet to gain more complete data, the researcher added up to be 400 samples. Sampling began first with Stratified Random Sampling method, followed by Simple Random Sampling by picking up the names of the churches in each area.

Research Instrument

The research instrument for this study is developed by the researcher starting by reviewing literature, then by creating items based on concepts and theories and related research studies to cover the research objectives. The questionnaire composed of four parts: Seven items for personal data, thirty-seven items for sufficient living, twenty-six items for Christian happiness, and three items for opinions and recommendations. The total number of items was seventy-three. Then, this questionnaire was presented to the research adviser to be evaluated and adjusted in terms of structure, content, and language used. Then it was revised according to the adviser's comments.

The researcher submitted the revised research instrument to three specialists to evaluate its content validity and construct validity. The result of the evaluation was that from the sixty-eight items in part 2 and 3, sixty-three got from +0.50 point up, and five items got less than +0.50 and were thus taken off. The items remained were sixty-three in number. The researcher brought the revised instrument to use as a pre-test in the Sapan Luang Klongtan Church, Bangkok, in forty members (10% of 400). The collected data was analyzed for internal consistency using Cronbach's alpha coefficient value. The reliability test should yield the result of 0.70-1.00 for the items to be applicable (Pannee Leekijwatana, 2557: 199), and the result of the test was 0.833, affirming its reliability and practicability.

Data Collection

The research project was approved by the Research Ethics Committee of the Graduate School of the Christian University of Thailand, and permission was granted through an official written letter. Then the researcher issued the letter to the Presidents of target churches to ask for permission to collect data, signed by the Dean of the Bangkok Institute of Theology. The researcher distributed 400 copies of questionnaires to target churches in the sample list. After five weeks, there were only 366 copies (91.50%) returned. So another 34 copies were collected to fulfill the amount of 400.

Data Analysis

The collected data of the research was analyzed by using descriptive statistics: frequency, percentage, and mean, to address personal characteristics and the level of sufficient living and that of happiness. Thedata was further analyzed by using the inferential statistics: Independent sample–test, ANOVA, Pearson's correlation coefficient, and multiple regression analysis.

Result

The research findings showed that the majority (52.30%) of respondents were female, the main age group (26.50%) was between 21-30 years, most had an education level lower than Bachelor's degree (55.80%), freelance jobs was found most (26.50%), family income 10,001-30,000 Baht per month was the largest (37.80%), the most church status found was full member (66.89%), and Christian age of more than 21 years are the main one (34.80%).

Table 1 Level of factors of sufficient living

Factors	$\overline{X}$	S.D.	Level of sufficient living
Sufficient mind			
Reasoning abilities	3.18	.41	Moderate
Psychological immunity	3.02	.43	Moderate
Grateful attitudes	3.49	.40	Moderate
Total	3.23	.29	Moderate
Biblical Economics			
Contentment	3.68	.45	High
Stewardship	3.72	.52	High
Giving	3.44	.42	Moderate
Total	3.61	.36	High
Grand total	3.42	.27	Moderate

Table 1 shows that the overall level of sufficient living produced by all factors was in a moderate level. The support from Biblical Economics, with a high level, was stronger than that of sufficient mind, with a moderate level. Factors with high level include Stewardship and Contentment. Factors with moderate level of sufficient living include Grateful attitudes, Giving, Reasoning abilities, and Psychological Immunity.

Table2 Level of happiness determined by components.

Components of Happiness	$\overline{X}$	S.D.	Level ofHappiness
Physical well-being	3.00	.47	Moderate
Mental well-being	3.10	.42	Moderate
Spiritual well-being	3.82	.66	High
Social well-being	3.96	.48	High
Total	3.47	.36	Moderate

Table 2 shows that the overall level of happiness was in a moderate degree. The level of happiness considered by each component was that Social and Spiritual well-being were in high degree and Mental and Physical well-being were in moderate degree.

Table3 Correlation between factors and happiness level

Factors	Correlation Coefficient(r)	Correlation level
Reasoning Abilities	.200**	Low
Psychological Immunity	.243**	Low
Grateful Attitudes	.363**	Low
Contentment	.374**	Low
Stewardship	.550**	Moderate
Giving	.546**	Moderate
Total	.626**	Moderate

**. The correlation is statistically significant at .01

Table 3 shows that the overall factors of sufficient living had a positive correlation with happiness level with a correlation coefficient .626** at statistical significance level of .01, which was in a moderate range. When determined by factor, the finding was that the factor that had positive correlation arranged from moderate to low level are as follows: Stewardship r = .550**,Giving r = .546**, Contentment r = .374**, Grateful Attitudes r = .363**, Psychological Immunity r = .243**, and Reasoning Abilities r = .200** at statistical significance level of .01.

Table4 Multiple Regression Analysis

Predicting factors	b	$S.E._b$	β	t	P value
Stewardship	.209	.031	.309	6.716***	.000
Giving	.252	.039	.294	6.475***	.000
Contentment	.108	.033	.137	3.319**	.001
Psychological Immunity	.082	.033	.100	2.528*	.012
Grateful Attitudes	.091	.038	.101	2.394*	.017

Constant value = .862 ; $S.E._{est}$ = ± .164

R = .665 ; R square = .442 ; Adjusted R square = .435 ;

F = 62.460***; p value = .000

* p< .05; **p < .01 ; ***p <.001

Table 4 shows that there were five factors of sufficient living that had correlation with happiness level significantly at the level of .01, with a Regression Coefficient value (R) .665. The predicting abilities of these five factors together were 44.2%, the standard error of estimate was ± .164at the significance level of .01. The Regression Equation to predict the level of happiness of Christians in the Seventh District can be constructed as follows: Y = .862 + (.209)Stewardship+ (.252)Giving+ (.108) Contentment+ (.082) Psychological immunity+ (.091)Grateful attitudes.

Conclusion and Discussion

1. The Results show that the overall level of the respondents' factors of sufficient living was in a moderate level, with a high level of religious support from Biblical Economics and a moderate level of social support from sufficient mind. Factors with high level include Stewardship and Contentment. This can be interpreted that most of the respondents had been Christians for many years, so it was likely that they had a thorough understanding of the Biblical Economics and had applied the doctrine in their daily lives. Although people in general adopted the Philosophy of Sufficiency Economy and thus cultivated a sufficient mind, the Christians cultivated a spirit of sufficiency, which was the innermost component of man. This was based on the Theology of the Cross that challenged the Christians to show their love the way Jesus did and to bear their crosses together with him. This love was expressed concretely by sharing and giving to the poor and the needy (Cooper-White, 2009: 204-205). Result further shows that factor with the highest level was stewardship, denoting that the respondents recognized God's ownership over all things and human beings are merely the steward of God, who are responsible in managing their possessions the best they can. This supports McAfee's study that the real truth that should always be recognized is that all money and possessions

belong to God alone, Christians are only his steward. Therefore, they should always manage all possessions carefully and reasonably, and should use all resources in order to fulfill God's plan and purpose in their lives (McAfee, 2000: 15-20).

2. Results show that the overall level of happiness of the respondents was in a moderate level. It also shows that the components of happiness in high level included Social well-being and Spiritual well-being, and the components in moderate level included Mental well-being and Physical well-being. This is because social life is the way of Christian life, in church and society, gathering and fellowship together are at the heart of Christianity, to support and to pray for one another, the fruits are social well-being and spiritual well-being. The Christian way of life is love and peace in unity, with the commitment to take care of one another spiritually and materially. This supports the study of Pitch Piriyahapant (2555), which concludes that the most fundamental way to lead to happiness is love. Love is the prerequisite of happiness, expressed by living with others in society in peace and harmony. The second most component of happiness was Spiritual well-being, which supports the study of Somporn Parnpadung, Kittikorn Nilmanat, and Lapana Kitrungroej (2556), which states that Spiritual well-being has three aspects: First, peaceful happiness as a result of doing good; second, joyfulness as a result of wisdom and understanding; and third, willingness to face all challenges. The finding also supports Jesus' Sermon on the Mount in Matthew chapter 5 in the first category of blessed person who will have spiritual well-being because he recognizes that he is poor and lowly in spirit and asks for God's forgiveness: "Blessed are the poor in spirit, for theirs is the kingdom of heaven" (Matthew 5:3). Jesus promises that they will inherit the kingdom of heaven, which in this life it denotes true spiritual well-being.

3. Results show that the overall level of factors in sufficient living had a positive correlation with happiness level significantly at the level of .01, with a correlation coefficient of .626** interpreted as a moderate correlation. The findings also show that the factors that had positive correlation in moderate degree at significance level .01 are stewardship r = .550**and giving r = .546**, and the factors with positive correlation in low degree are Contentment r = .374**, Grateful attitudes r = .363**, Psychological immunity r = .243**, and Reasoning abilities r = .200**. Two factors with the highest correlation are stewardship and giving, which supports Cooper-White's Theology of Stewardship, which affirms that faithful management of money and material possessions will nurture the spirit to grow up with exceedingly delightfulness (Cooper-White, 2009: 205-206). This also supports the Biblical teaching from the Book of Acts: "It is more blessed to give than to receive" (Acts 20:35). This is because 'giving' makes those who give feel happier, mentally, spiritually, and socially, while 'receiving' provides only physical well-being for those who receive.

4. Results show that there were five factors of sufficient living that could predict the happiness level: Stewardship, Giving, Contentment, Psychological immunity, and Grateful attitudes, with the predicting abilities of 44.2% at the statistical significance level of .05, and with a Regression Coefficient value (R) .665. The Regression Equation to

predict the level of happiness of Christians in the Seventh District can be constructed as follows:Y = .862 + (.209)Stewardship+ (.252)Giving+ (.108) Contentment+ (.082) Psychological immunity+ (.091)Grateful attitudes. This finding supports the Multiple Discrepancy Theory proposed by Michalos (1985) that people always evaluate their own happiness by employing many criterion especially the perception of success in seven issues: Hope fulfillment, memorable past experience, equal possession with others, expectation in the near future, advancement, receiving what one deserves, and ability to spend to serve one's desire. Michalos stresses that when these seven items serve together, they will be better predictors that when each factor works separately.

The new body of knowledge gained from this research is that Christian's sufficient living can be cultivated not only by forming a sufficient mind but also from the application of the Biblical Economics. As the two factors which had most correlation with happiness level are faithful Stewardship and Giving, Christian are thus supported by the additional force—the Biblical Economics—which can raise the level of sufficient living, which will in turn raise the level of their happiness.

Recommendations

1. Recommendations for academic purpose. The new body of knowledge should be integrated with related course in the Master of Arts in Theology Program such as TTHE5014 Systematic Theology 1 in the part of Theological Anthropology. The concept from the research findings could help promote sufficient mind, stewardship, giving, and Contentment. Christian education should be given to pastors, church leaders, and members regarding sufficient living by Biblical Economics and sufficient mind. Lessons on sufficient living should be written and published as a small handbook to help make the teaching and learning process more effective. Mentors in the theological institute should guide their mentees to live more sufficient lives exemplified by their own model of life.

2. Recommendations for planning, administration and management purpose. The Seventh District should include the promotion of sufficient living as one aspect of providing pastoral care holistically, namely the physical well-being, mental well-being, spiritual well-being, and social well-being. This policy should be declared in the annual meeting of the district committee. Workshops on sufficient living should be organized for pastors, leaders, and members. The workshop on church accountancy should be organized for the treasurers and the financial officers of the church. Activities on sufficient living should be practiced, for example, garage sale or flea market in the urban churches, or charity library with donated books in the rural churches. In addition, the church should provide charity funds annually for donation.

3. Recommendations for further research. Research on this topic should be continued in other districts under the C.C.T. The factors to be studied may be changed according to the contexts of the particular district's nature, but they should be factors that can be increased practically in order to raise the level of happiness.

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Moringa-Curcuma Anti-Bacterial Soap

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Abstract

The study was conducted to utilize malunggay and turmeric in developing an anti-bacterial soap last 2011 at Bicol University Polangui Campus, Polangui, Albay, Philippines. Malunggay or *moringa oleifera lamk* has its anti-bacterial action on the skin and a very good quencher of unstable free radical that can react with other molecules that cause aging.Turmeric or curcuma longa has its active ingredient, curcumin which has anti-bacterial and anti-fungal effects that could be used to treat skin diseases like ringworm, herpes, an-an, and wound healing. Since both raw materials contain anti-bacterial ingredients which are beneficial to the skin, this study is indeed remarkable. The output which is an herbal product may be preferred over commercial products with harsh chemicals. Specifically, it aimed to develop a technology in extracting juice from malunggay and turmeric, determine the appropriate proportion of chemicals used, produce an anti-bacterial soap, determine the acceptability and compute its production cost. The Experimental Method of Research was used and it revealed that the output was highly acceptable and it is totally dependent upon the proportion of the chemicals used. The total production cost is Php. 142.06 with thirty pieces yield and a mark-up of 100% at Php. 9.50 per piece if meant to be commercialized.

Keywords: Innovation, Curcumin, Experimentation, Herbal Product, Commercialization

Introduction

Horseradish tree, *"Moringa Oleifera Lamk"*, commonly known as malunggay in most regions, contain nutritional and medicinal properties. It also contains anti-bacterial peptide that can destroy the cell membrane of many infectious bacteria. *(http://affleap.com/the-potentials-of-moringa-the-miracle-plant/)* Moringa Oleifera has various food and medicinal values and is potentially useful aside from being a very good source of nutritive and medicinal values. Due to its high content of vitamins as A, C, and E which are antioxidants, malunggay is also a very good quencher of unstable free radical that reacts with and damage other molecules that cause aging. Antioxidants reduces the appearance of wrinkles and fine lines. *(http://sntpost.stii.dost.gov.ph/frames/july-tosept04/pg41.htm).*

Turmeric, *Curcuma Longa* is a herbal plant that belongs to the ginger family. It is popularly known as "langkawas" in the province of Albay. The active ingredient of turmeric is the curcumin which is good in the treatment of skin diseases like ringworm or herpes, an-an and wound healing. Curcumin possesses 95% of its properties which has anti-bacterial and antifungal effects. *(http://www.motherherbs.com/curcuma-longa.html).* Despite that many people use instant whitening soap offered by many commercial manufacturers, consumers are still aware with

manufacturers, consumers are still aware with their side-effects. The study aimed to produce antibacterial soap utilizing and combining malunggay and turmeric which both contain ingredients beneficial to the skin. Specifically, it intended to develop a technology on malunggay leaves and turmeric rhizomes juice extraction, determine the appropriate proportion of the chemicals in producing the soap, and produce an anti-bacterial soap, determine the acceptability of the product in terms of appearance, smell and packaging, and compute the production cost of the anti-bacterial soap.

Objectives

Generally, the objective of the study was to develop an anti-bacterial soap utilizing malunggay leaves and turmeric rhizomes. Specifically, it aimed to develop a technology in extracting juice from malunggay leaves and turmeric rhizomes, to determine the appropriate proportion of chemicals used, to determine the acceptability of the product in terms of appearance, smell and packaging, and to compute the production cost of the anti-bacterial soap.

Research Design/Methodology

The chemicals basic in the preparation of the anti-bacterial soap are herein shown.

A. Required Chemicals

Coco cups cooking oil	Colorant
Cup caustic soda	CDEA
lye solution	Malunggay Extract
Sampaguita scent	Turmeric Extract

Figure 1. Materials for Soap Making

The experimental method of research was used in developing the anti-bacterial soap. Two (2) laboratory trials were done to determine the best proportion of chemicals. Fig. 2 shows the process flow in producing the soap, from the collection of samples up to packaging.

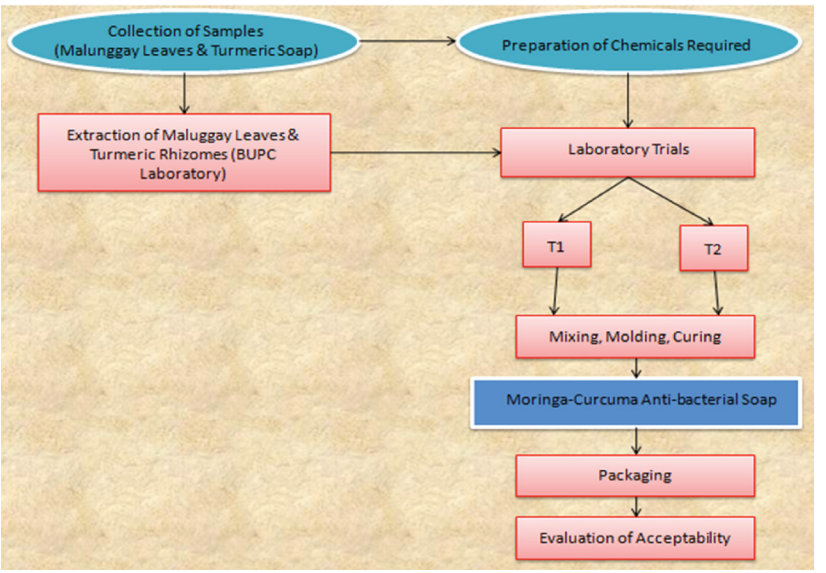

Figure 2. Process Flow in Producing the Moringa-Curcuma Anti-bacterial Soap

Production of the Antibacterial Soap

The production of the soap starts with separation of the 1500 grams malunggay leaves from the stalk and washing the 1000 grams of turmeric rhizomes for extraction. Separate the extracted juices of the raw materials. Filter and measure the extracted juices including other chemicals using the graduated cylinder. Mix all the chemicals and stir well until the desired consistency is achieved. Pour the mixture into a molder overnight to solidify. Remove from the molder and cut into desired sizes. It has to be cured within 30 days then wrap, package and the product is ready for use. Evaluation of the acceptability of the product output was done by twenty respondents/evaluators.

Figure 3. Malunggay Leaves

Figure 4. Extracting Juice from Turmeric Rhizomes

Figure 5. Mixing the Chemicals and Molding the Mixture

Figure 6. Moringa-Curcuma Antibacterial Soap

Research Findings/Results

The succeeding discussion presents the methods used in the processing the moringa-curcuma anti-bacterial soap. In Table 1, the juice recovery of the maluggay leaves and turmeric rhizomes is shown. It is very apparent that turmeric rhizomes has greater percentage of juice recovery than malunggay leaves, thus, more malunggay leaves will be needed to extract its juice to get an equal amount of turmeric rhizome juice.

Table 1. Juice Recovery of the Malunggay Leaves and Turmeric Rhizomes

Samples	Weight of Samples	Weight of Juice Extracted	% Juice Recovery
Malunggay Leaves	1500 g	150 g	10 %
Turmeric Rhizomes	1000 g	888 g	88.8%

Table 2. Results of the Laboratory Trials

Proportion of Chemicals/Materials	Results/ Observation	Remarks
1st Trial ¼ cup malunggay extract ¼ cup turmeric extract 1 cup (regular) caustic soda 3 cups water 5 cups cooking oil 10 ml scent (sampaguita) 1Tbsp. cocodiethanolamide (CDEA) 1 tsp. sodiumsilicate	The desired texture was not achieved because it was rough and hard. The color of the product was not attractive.	The correct stirring time should be observed properly because it affects the desired texture of the soap. The experiment should be done in an ambient temperature because it likewise affects the output. Colorant should be added.
2nd Trial ¼ cup malunggayextract ¼ cup turmeric extract 1 cup (regular) caustic soda 3 cups water 5 cups cooking oil 10 ml scent (sampaguita) 10 ml colorant(green) 1Tbsp. cocodiethanolamide (CDEA) 1 tsp. sodium silicate	The desired texture and color was achieved.	The correct stirring time should be 15 minutes because it affects the desired texture of the soap. The experiment was done in an ambient temperature which resulted to the desired texture of the soap.

The results of the two (2) laboratory trials show that the product in each trial differ in texture and color. With the addition of green colorant in the second trial, the desired texture and color was achieved. The stirring time and kind of temperature in doing the experiment are prime factors in achieving the desired product, thus, it is in the second trial that the desired product output was achieved.

Table 3. Acceptability of the Moringa-Curcuma Anti-bacterial Soap

Criteria	Weighted Mean	Descriptive Interpretation
Appearance		
*Attractive andwell-shaped	4.5	Highly Acceptable
*Color (green)	4.7	Highly Acceptable
Smell(Sampaguita Scent)	4.5	Highly Acceptable
Packaging	3.8	Acceptable
Average Weighted Mean	4.3	Highly Acceptable

Table 3 shows the evaluation made by the 20 respondents on the malunggay-turmeric antibacterial soap. The product was made attractive with a green refreshing color, gracefully shaped and scented with sampaguita but the packaging needs improvement. Generally, the soap can be promoted in the local market.

Table 4. Production Cost of the Moringa-Curcuma Anti-bacterial Soap

QTY	Unit	Chemical Ingredients	Unit Cost	Total Cost
60	gms	Malunggay Extract		Php 20.00
60	gms	Turmeric Extract		0.16
246	gms	Caustic Soda	90.00/kg	22.14
3	cups	Water	-	-
209	gms	Cooking Oil	80.00/kg	16.72
10	ml	Scent	45.00/50 ml	9.00
5	ml	Colorant	8.00/50 ml	0.80
10	ml	CDEA	35.00/100 ml	3.50
10	ml	Sodium Silicate	30.00/100 ml	3.00
Total Cost of Materials			Php 75.31	
Packaging			20.00	
25% Labor Cost			18.75	
Transportation			28.00	
Total Cost of Production			142.06	
Mark-Up (100%)				
Selling Price = Total Production Cost/ No. of Yields				
Number of Yields – 30 pcs				
Selling Price			Php 9.50/pc	

Table 4 shows the itemized quantity of the required chemicals or ingredients and its unit cost. The total cost of production in the amount of Php 142.06 includes the total cost of materials with a provision of Php 66.75 for the indirect cost. This implies that the product output which will cost Php 9.50 per piece is commensurate to the labor of the producer and has an adequate provision of 100 percent gain.

Conclusions

An anti-bacterial soap from malunggay leaves and turmeric rhizomes was produced, a technology in extracting juices from malunggay leaves and turmeric rhizomes was done, appropriate proportion of the chemical used was achieved, the product output is highly acceptable, and the cost of the product is very reasonable.

Recommendations

After chemical analysis of the product and if found safe for use, it may be commercialized and investment in its production can be possible.

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Entrepreneur.Philippines.March 2006

The Medicinal Flora of the Province of Albay, Luzon Island, Philippines

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Abstract

This research aimed to conduct diversity assessment of medicinal plants and gain insight on the distribution of traditional health knowledge in the province of Albay. In the diversity study, three of the most important species include *Musa paradisiaca* (batag), *Cocosnucifera* (niyog) and *Manihotesculenta* (balingoy). Apparently, these are agriculturally important crops of the province. Species that scored high on importance value index (IVI) with relatively high frequency and density estimates is *Phyllantusniruri* (turutalikod) which, in some literature has anti-hypertensive properties. *P. niruri* typically inhabits coastal areas, but registered high IV in all ecological zones. On the other hand, in household surveys, none of the respondents have knowledge on how *P. niruri* is used to treat common ailments.

The three districts of the Province of Albay are significantly different in diversity of medicinal plants, the first district being the most diverse, with a total of 190 species of medicinal flora compared to the 170 and 119 species identified in the second and third districts, respectively. In terms of utilization, five out of ten surveyed households use *Blumeabalsamifera* (lakadbulan), the species considered as the most commonly used medicinal plant in the province. Other commonly used species are oregano, lagundi, anonang and bayawas. There are a total of 44 medicinal plant species used by health practitioners, specifically the barangay health workers of the province of Albay. Sambong, lagundi, oregano, artamisa and bayabas are the mostly utilized species, whereas, herbolarios or traditional healers identified a total of 34 commonly used medicinal plants for treatment of 21 ailments. Top of the list are sambong, luya, abukado, buyo and artamisa. Utilization practices for the preparation and administration of medicinal plants are as poultice, decoction, infusion, liniment and raw-eaten plant part.

The medicinal plant species commonly known and used by Albayano youths are about 25 species, all of which were claimed to be found locally. Traditional knowledge related to the use of medicinal plants in Albay Province is still transmitted over generations, especially in rural populations. The transmission of traditional knowledge begins in the early stages of childhood. Utilization of medicinal plants among the youth implies personal connections with nature that might provide opportunities for learning, encouraging the development of attitudes which are associated with the protection of the environment.

Keywords: Medicinal Flora, Albay Province, Luzon Island

Rationale/Background

The use of medicinal plants has been widely disseminated both by government and non-government organizations these past decades. Information campaigns have been launched, manuals and pamphlets have been written, seminar-workshops have been conducted and herbal gardens have been set up towards the realization that the population will not only have been properly informed but also that the utilization of herbal medicine was fully maximized.

Promotion of the use of medicinal plants is primarily due to its abundance not only in the whole country but also in the Province of Albay. Added to this is its use for common ailments especially in the rural areas. In the Philippines, 60% of the Filipino people live below the poverty line and health resources are few. Because of this, the people have learned to rely on their indigenous resources for generations. Also, medicinal plants are cheaper and are readily available as compared to commercial pharmaceutical preparations.

This study will contribute to added literature by way of the compendium of common medicinal plants of Albay, its diversity and dominance, taxonomic classification, the ecology of the plant species in terms of habit and distribution and how it is maintained and transmitted. Also, this study will generate ecological indices of the identified medicinal plants in terms of diversity and dominance. In this study, insights can be generated about the traditional health knowledge in the province. Further, the study would increase the knowledge on the use of indigenous resources for greater self-reliance in health care delivery system.

Objectives

The study generally aimed to identify the common medicinal plants of Albay and document the transmission of this traditional knowledge, thus contribute to the growing body of literature on the role of indigenous or traditional systems of knowledge in development.

Specifically, it aimed to:

1. Identify the document and assess the common and endemic medicinal plants in the province of Albay according to taxon, ecological habit and distribution and diversity and dominance of species;

2. Document the utilization practices by households, health practitioners and herbalists and account on the transfer of traditional knowledge to the succeeding generations;

3. Develop a compendium of medicinal flora;

4. Categorize species for conservation, protection, and sustainable use of medicinal flora.

Significance

The use of medicinal plants has been widely disseminated both by the in government and non-government organizations in these past decades. Information campaigns is have been launched; manuals and pamphlets have been written; seminar-workshops have been conducted, and herbal gardens have been set up towards the realization that the population will not only have been properly informed but also that the utilization of herbal medicine was fully maximized.

Promotion of the use of medicinal plants is primarily due to its abundance not only in the whole country but also in the province of Albay. Added to this is its use for common ailments especially in the rural areas. It is known that 60% of the Filipino people live below the poverty line and that resources are costly aside from the questions of affordability to the masses. Thus, they have learned to rely on their indigenous health resources for generations. Also, medicinal plants are cheaper, affordable and readily available in the neighborhood as compared to commercial pharmaceutical preparations.

This research will contribute to an added literature on the common medicinal plants in the province of Albay. It will likewise generate IEC materials useful to the knowledge of local residents and thus they can make use of these resources to help them gain self-reliance on the use of these medicinal plants. Further, it will generate insights about the traditional health knowledge in the province which still remains to be a gap. This study is likewise viewed towards a people-oriented development strategy in the province where the people was organized, mobilized and educated to make use of the indigenous medicinal plant resources in their areas to help them become self-reliant in health care delivery system.

Research Framework

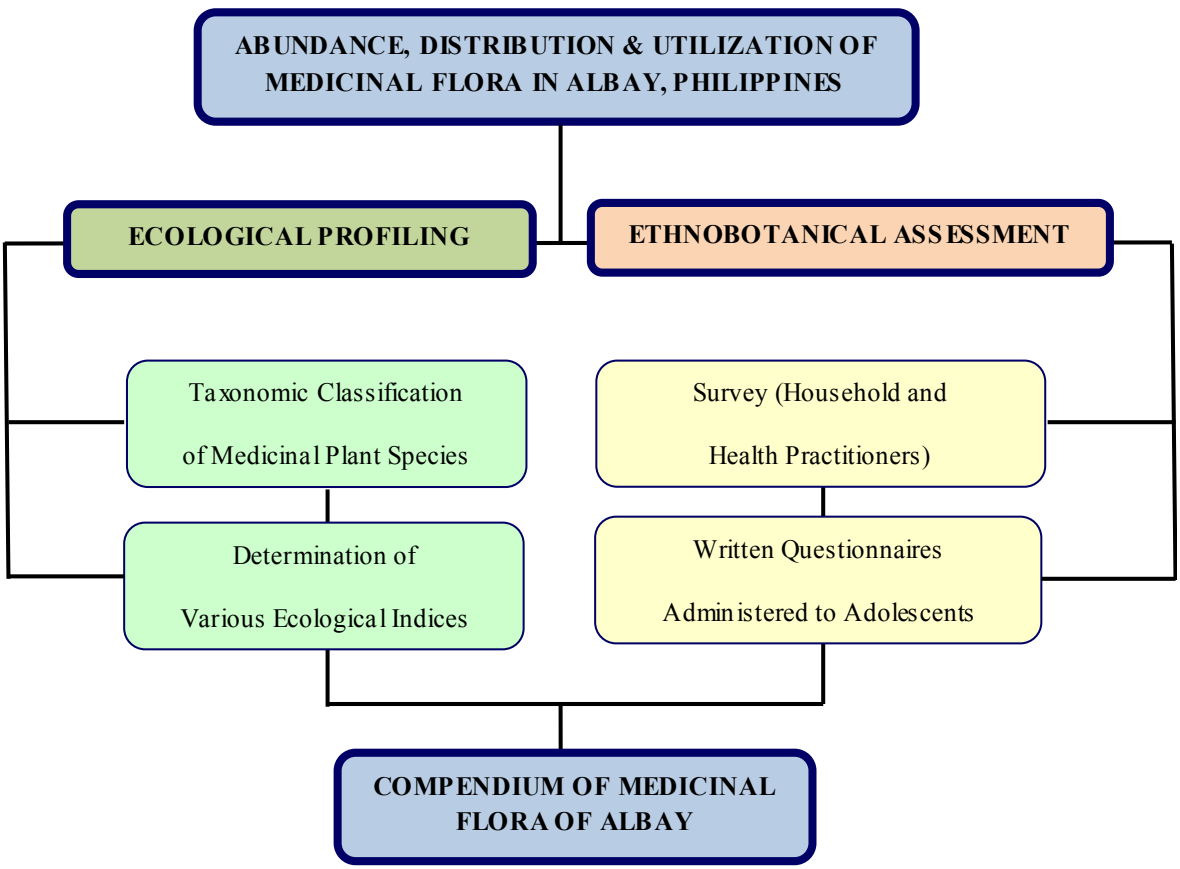

Figure 1. Research Framework

The overall aim of the research presented here is to contribute to the growing body of literature on the indigenous or traditional systems of knowledge in development. It seeks to do this by improving an understanding of the local management and use of medicinal plants and the associated local traditional knowledge. The underlying premise is that health constitutes the key player of the development process. It can at once be viewed both as the means as well as the end of development.

Within such context, this study aimed to gain insight into the distribution of traditional health knowledge at the provincial level and how it is maintained and transmitted over generations in rural and urban communities. Significant local knowledge regarding the management and use of medicinal plants as sources of home-based medicines is held by ordinary men and women. Women and elders are often the main custodians of such traditional health knowledge. Women in particular play special roles in traditional health care delivery both in their capacities as mothers and as principal managers of plants grown in home-gardens.

Conceptual Framework

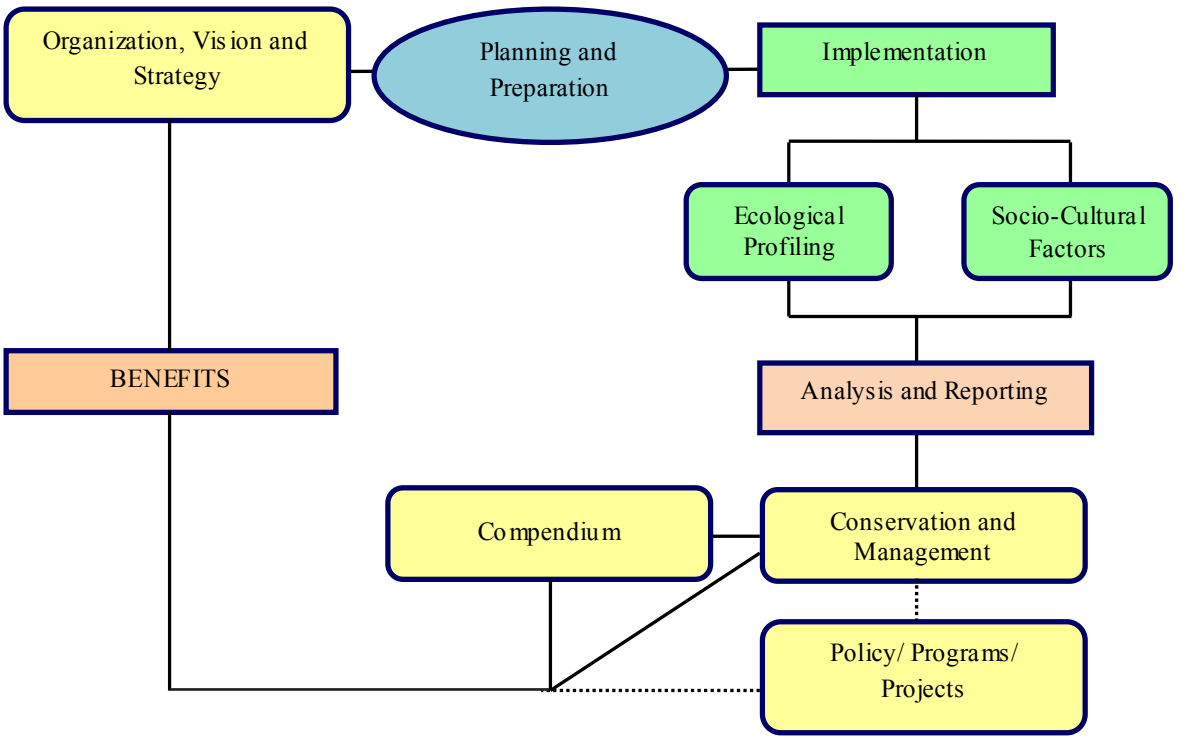

Figure 2. Conceptual Framework

The development of compendium of Medicinal Flora of the Province of Albay is an initial documentation of available medicinal plant resources in the province. The compendium, as an IEC material, may be basis for the conservation management of the plant resources and the documented utilization practices by various sectors of the community could back up the need for intensive scientific investigations on the potency of the plant materials.

This research study is focused on the identification of medicinal flora of the province of Albay in three ecological zones i.e. upland, lowland and coastal areas. Likewise, this study will determine the different ecological indices, namely, species diversity, dominance and evenness. One municipality and one city per congressional district was considered with each having three barangays representing the lowland, upland and coastal areas. Albay has three congressional districts. The study therefore will cover 6 barangays per district or 18 barangays for the whole province. The study was conducted for two years.

Methodology

Research Site

Albay (Figure 3) is located at the southern tip of Luzon Island and about 550 km. from Manila. Albay is approximately 13 to13.5 degrees latitude and 123.25 degrees east longitude. The Province of Albay is located between the provinces of Camarines Sur on the north and Sorsogon on the South. It is bounded on the east by the Pacific Ocean, on the northeast by the Lagonoy Gulf, and on the west and southwest by the Burias Pass. The islands in the north under the jurisdiction of the province are Rapu-Rapu, Batan, Cagraray and San Miguel.

Albay has a land area of 2,552.6 km2, consisting of 14 towns, and a population of 904,382. The important products of the people are hemp, coconut, sugarcane, pineapple, vegetables and rice. The mountains of the province are Mayon, Masaraga and Malinao in the northeast and Catburaun in the west. Its forests are sources of timber, rattan, pili nuts and gum elemi. There are also vast grasslands for pasturing horses, cattle, carabaos, goats and sheep.

Albay is composed of 3 cities (Legazpi, Tabaco and Ligao) and 15 municipalities grouped into 3 congressional districts, namely, first district: Bacacay, Malinao, Malilipot, Sto. Domingo, Tabaco City and Tiwi); second district: Legazpi City, Camalig, Daraga, Manito and Rapu-Rapu; and third district: Guinobatan, Libon, Ligao City, Oas, Pio Duran and Polangui.

One city and one municipality per district was considered as sampling areas. Covering an area of both high and low terrains, this work necessarily takes into account both high and low-altitude plants as well as coastal plants (Table 1). This is to cover both coastal and terrestrial medicinal flora.

Figure 3. Map of Albay

Survey questionnaire was used and key-informant interviews (KII) were conducted to know how these medicinal plants are being used in the locality. The research team coordinated with the barangay council of the identified study areas and sought assistance from the barangay health workers in distributing and retrieving questionnaires.

Prior to the conduct of fieldwork, the following activities were done: a. secondary data collection; b. processing and gaps analysis; c. entry protocols; and, d. preliminary preparation of communities. The main criteria for choice of fieldwork sites were as follows: a. contiguity and heterogeneity; b. acceptability to local government units; c. accessibility; d. biodiversity (cultural, human, natural resources, function and structure); e. security; and, f. interest from the local community.

Respondents of the Study, Research Design and Data Collection, Data Analysis and Research Instruments

Community Surveys

The household surveys, which essentially constituted the main component of the field work, involved semi-structured interviews with both men and women household heads (key informants). The objective was to gain insight into the knowledge and practices of lay community members about the most common medicinal flora and how these plants are utilized. Random samples of households (around 20 per barangay), stratified location, was drawn in each ecological zone per municipality and city per congressional district resulting in data from over 360 men and women informants.

The interview schedule employed in the survey included detailed open-ended as well as closed questions. These ranged from specific questions regarding traditional plant treatments known or routinely used for a list of common health problems, to more general ones about access to and use of government biomedical health services and perspectives regarding 'modern' vs. traditional approaches to health as a whole. Focused group discussion was conducted with sectoral representatives as respondents.

Open interviews were held with widely recognized knowledgeable elder member in each research community. The aim was to gain insights into :

1. The overall state of the local natural environment, the extent of habitat conversion and changing land use patterns over the years, including any losses of locally valued plants;

2. Local perspectives regarding major health problems/diseases in the area over the years; and

3. Changing perspectives regarding the advantages and drawbacks of traditional medical practices versus modern medicine.

The outcome of these discussions was very useful in refining the questions asked in the other methodological components.

In collaboration with a selected high schools and non-formal schools per sampling area, questionnaires were administered to 30 volunteers (15 male and 15 female students, age 14-16 years from both rural and urban backgrounds). This enabled the researchers gain insight into the extent and mechanisms through which traditional knowledge regarding the use of various medicinal plants is transferred to the young.

During the household survey, informants were asked about their use of modern health care services. In a number of cases, informants, specifically the modern health care providers from whom they frequently seek care for specific health problems. Formal interviews were conducted at the most frequently cited medical facilities (private or government health care facility in the area). Likewise, three well-known traditional healers based in each sampling area were interviewed. Discussions with these traditional healers covered the following:

1. Background/training and area of expertise (main diseases treated);

2. Major sources and current situation regarding medicinal plant supplies;

3. Perspectives regarding major illnesses in area and the role of home-based traditional medicine/use of medicinal plants by lay persons.

Determination of Various Ecological Indices

In order to generate ecological indices such as diversity, dominance and evenness of species, Line Plot Method was employed in the study. A 100 meter transect line was laid perpendicular to the contour of the slope using ten (10) 10 X 10 meter plots along the transect line with a total sampling area of 1000 m2 per transect (Figure 3). Specimens encountered were noted and documented. Raw data were processed using standard formulas. Line Plot Method was employed to survey the naturally occurring medicinal plants in the province. Backyard Sampling was conducted during household interviews to determine the medicinal plants cultivated in every household.

Collection of Samples and Taxonomic Classification of Medicinal Plants

Each species encountered within the transect and those that are identified by the folks during the interview were identified and classified with reference to existing taxonomic keys such as: Handbook on Philippine Medicinal Plants Volumes 1-4 by Ludivina de Padua, 1997; Handbook on Philippine Medicinal Plants by the Science Education Center of the University of the Philippines, 1971; and other references.

Herbarium specimens of less common medicinal flora were submitted to the University of the Philippines Los Baños Herbarium and to the National Museum Herbarium for proper taxonomic identification. These herbarium specimens was submitted to the Department of Biology, Bicol University College of Science.

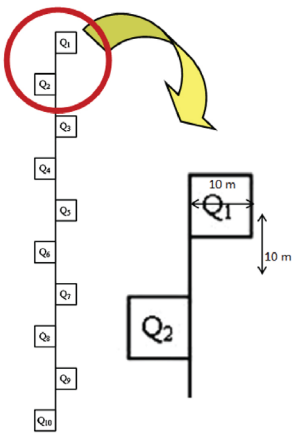

Figure 4. Modified Line Plot Method

Results and Discussions

1. Diversity of Medicinal Flora in the Province of Albay

A total of two hundred twenty-four (244) species representing eighty nine (89) families were identified. Among the three districts of Albay, first district was noted to be the most diverse community with Shannon Diversity Index of 3.94, followed by third district and second district with 3.8 and 3.75, respectively. Analysis of variance using diversity indices of the sampling barangays from the three ecological zones and from the urban and rural barangays revealed no significant difference on the plant diversity ($p=0.4574$ and $p=0.3394$). However, ANOVA on the diversity of medicinal plants in the three sampling districts showed highly significant difference ($p=0.000945$). Pairwise comparisons using Tukey's HSD showed highly significant difference between the first district and the two other congressional districts of Albay. The first district identified a total of 190 medicinal plant species compared to the 170 and 119 species recorded in Districts 2 and 3, respectively. In general, the entire province scored high on medicinal flora species. It is expected that this diversity index may increase when this indigenous knowledge is properly disseminated and managed.

Table 1: Summary of Ecological Indices

Area	Shannon-Weiner Index of Diversity	Simpson's Index of Dominance	Evenness
First District	3.94**	0.04	0.89
Second District	3.75	0.05	0.87
Third District	3.8	0.07	0.86

Based on Table 1, Simpson's index of dominance scored extremely low having recorded a dominance index ranging from 0.04 to 0.07. This means that only 4% to 7% of all the identified species dominate in the entire sampling population. These dominating species include *Musa paradisiaca* (batag) and *Colocasia esculenta* (natong/apay) based on their importance value accounting their density and frequency values relative to other identified species. Other medicinal plants with high importance value include *Cocos nucifera* (niyog), *Manihot esculenta* (balingoy), *Psidium guajava* (bayawas), *Gliricidia sepium* (kakawate), *Euphorbia hirta* (gatas-gatas), *Phyllantus niruri* (turutalikod), *Ficus pseudopalma* (lubi-lubi) and *Blumea balsamifera* (lakad-bulan) (Table 2). Majority of the plants in the list are highly important agricultural products of the province.

Diversity of plant species is usually associated with the type of substrate present in an area as well as its physical and chemical characteristics. The highly diverse medicinal flora in the first district may be correlated with its kind of soil. Based on laboratory analysis of soil texture, the sampling areas in the first district exhibited a sandy loam to sandy clay loam type of substrate except for Maynonong in Tiwi, Albay which is characterized by a clayey soil texture. Loamy soil texture is the ideal soil type for growth and development of plants. The First District likewise registered high percentage organic matter. According to Hausenbuiller, well-aerated soil displays lower organic matter content than those that are more poorly aerated. The higher diversity values may be attributed to the high organic matter content in the soil samples collected from the area. Other districts displayed sandy to silty clay loam types of soil. Soil moisture, soil pH and soil organic matter were also determined and data showed that these parameters are within the standards set by the Department of Environment and Natural Resources.

The percentage IV ranking of medicinal plant species also varied within and amongst different study sites. Species like *Hibiscus tiliacus* (malubago), *Vernoniacinerea* (agas-moro), *Lantana camara* (asin-asin), and *Ficusodorata* (hagupit) recorded high frequency and density values in coastal areas while *Leucaenaleucocephala* (ipil-ipil), *Blumeabalsamifera* (lakad-bulan) and *Gliricidiasepium* (madre de cacao) dominate upland study sites (Table 4). On the other hand, *Colocasiaesculenta* (balingoy), *Urenalobata*(rukut-dukot), *Orthosiphonaristatus* (balbas-pusa) and *Amaranthusspinosus* (kilitis) registered high scores in the lowland zones.

Phyllantusniruri (turutalikod) showed clear dominance in coastal and lowland areas having considered as the most important species with 11.27 and 13.57 importance value index (IVI), respectively. This species is also included in the ten most important species in the upland areas (IVI=6.31). Aside from *P. niruri*, three other species consistently documented high IVI in all ecological zones i.e.

umented high IVI in all ecological zones i.e. upland, lowland and coastal areas. These include *Musa paradisiaca* (batag), *Cocos nucifera* (niyog) and *Manihotesculenta* (balingoy).

Weeds and other low-statured plants were assessed using Line Intercept Method. In this method, area cover (%) was determined as well as frequency. Based on the results, the species with the highest IVI is *M. pudica* (makahiya) which is also the most frequent species. *W. trilobata* (wild sunflower) ranked second and is also the species with the highest percentage cover (4.23%). *P. niruri,* the most important species in the Line Plot Assessment Technique, is not included in the top ten species with the highest IVI. However, this species is one of the ten most frequent species using this method. Herbs and trees recorded the highest number of identified medicinal plants in the entire province (Figure 3). Thirty percent (64 species) of the 224 identified species were herbs while twenty-four percent (52 species) were trees. Most of the herbs that were spotted were found in the backyards of the sampled households. Interviews were conducted to gather data on how these medicinal flora were used by the residents (n=540). ANOVA was used to determine if the rate of utilization of medicinal plants between residents of urban and rural areas exhibited significant difference. Results indicate that the urban and rural residents showed no significant difference in terms of the degree of utilization. This was validated by the findings of the household surveys wherein 89.45% of the 540 households surveyed use medicinal plants in treating common ailments such as coughs, sprains, relapse, hypertension, and bacterial and fungal infection.

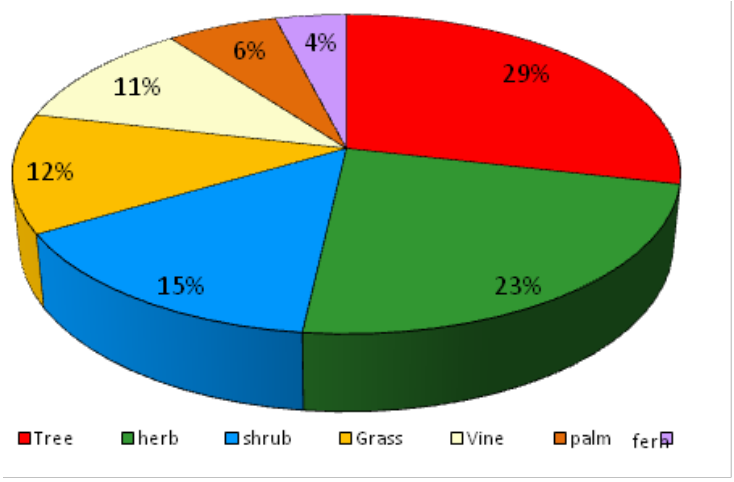

Figure 5. Percentage Composition of Plant Species According to their Growth Habit

One of the important data gathered in the survey was the rate of utilization of specific medicinal plants by the Albayanos. Table 2 lists down the ten most commonly used medicinal plants in the province of Albay. In the list are *Blumeabalsamifera* (lakadbulan), *Coleus aromaticus* (oregano) and *Vitexnegundo* (lagundi). Based on the survey, 3-5 out of 10 Albayanos use these medicinal plant species in treating/relieving common ailment/sickness such as coughs, dizziness, stomachache, menstrual cramps, kidney troubles, relapse, dyspepsia and sprains. Also included in the list are *Cordiadichotoma* (anonang), *Psidiumguajava* (bayawas), *Artemisia vulgaris* (artamisa), *Moringaoleifera* (kalunggay), *Chrysanthemum indicum* (mansanilya), *Cleodendrumintermedium* (matangkuwaw) and *Ocimum sanctum* (kamangkaw).

Table 2: Top Medicinal Plants Used By Albayanos

Rank	Used by Teens	Used by Households	Used by Health Practitioners	Used by traditional healers/ herbolarios	Occurrence as reflected in the Diversity Study	Occurrence in backyard garden assessment
1	Lagundi	*lakadbulan	*Sambong	*Sambong	batag	Mangga
2	Oregano	oregano	*Lagundi	luya	niyog	Niyog
3	Balbas pusa	*lagundi	Oregano	Buyo, ikmo	natong/apay	Langka
4	ampalaya	anonang	Artamisa	Abukado	baktutan	saging
5	Luyang Dilaw	*bayawas	*Bayabas	Artamisa	balingoy	malunggay
6	Lakad-bulan	artamisa	Anonang	Tubang-bakod	madre de cacao	Tapayas
7	Banaba	kalunggay	Buyo	*Bayabas	*bayawas	Kamoteng-kahoy
8	Malunggay	mansanilya	Kulung- kugong	Sampalok	ipil-ipil	Gabi
9	Guava leaves	matangkuwaw	* Herba Buena	Oregano	lubi-lubi	*Lakadbulan
10	Sambong	kamangkao	Manzanilya	Tanglad	*lakadbulan	Oregano

1. Household Survey and Backyard Sampling in Albay Province

In backyard sampling in the first district, a total of one-hundred fifty-three (153) medicinal plants were noted. It was observed that the top five medicinal plants with the highest frequency in Tabaco City were *Artocarpus heterophylla* (40.00%), *Mangifera indica* (37.78%), *Ficus pseudopalma* (31.11%), *Cordieum variegatum* (28.89%), and *Euphorbia milii* (25.56%). In Tiwi, Albay, the mostly occurring plants different from those in Tabaco City wherein *Moringa oleifera* had the highest frequency value of (35.56%), followed by *Mangifera indica* (28.89%), *Manihot esculenta* (22.22%), *Musa paradisiaca* (21.11%), and *Euphorbia milii* (18.89%). *Ficus pseudopalma, Artocarpus heterophylla* and *Carica papaya* were the top five most occurring plants sharing a common frequency value of 17.78%.

The percentage of utilization of the medicinal plants by households was also computed to determine which plants were used by most households in the urban and rural areas. It appeared that the most commonly-used medicinal plants were *Blumea balsamifera* (lakadbulan) and *Coleus aromaticus* (oregano), each having percentage values of 54.44% and 52.22%, respectively, implying that more than fifty percent (50%) of the households in Tabaco City and Tiwi, Albay use lakadbulan and oregano as medicine. The three remaining most commonly used plants were *Artemisia vulgaris* and *Vitex negundo* with 27.78% and 24.44% percentage values, respectively. *Psidium guajava* and *Moringa oleifera* were the fifth most commonly used plants and were found to be being utilized by 23.33% of the households.

For backyard sampling in Manito and Legazpi City, *Mangifera indica* (Mango) has the highest number of frequency in Legazpi City. Almost 39% of the total number of households has mango trees planted in their backyard. The next more frequent plants were *Ficus pseudopalma* (Lubi- lubi) and *Moringa oleifera* (Malunggay) both with 22.22%. Some of the least frequent plants were *Cansium domesticum Correa* (Lansones), *Achras sapota Linn* (Chico), *Pouteria lucuma* (Chesa) and *Gendarussa vulgaris* (Puli) with frequency value of 1.11%. In Manito *Musa paradisiaca* Linn. (Batag) has the highest frequency value of 44.44% or almost 80 of the respondents

interviewed have this plant at their backyard. This was followed by *Mangifera indica* (Mango) and *Cocos nucifera* (Nuyog) with 38.89% and 35.56 respectively. Some of the least frequent plant species observed in Manito were *Melastoma malabathricum* Linn. (Tungaw- tungaw), Nephelium lappaceum Linn. (Bulala), *Symphytum officinale* (Comprey and *Cucurbita maxima* Duschne. (Karabasa), all with 1.11% frequency values.

As to the the number of species identified per barangay, the percentage of the medicinal plants utilized in each barangay and the number of respondents who are practicing the use of herbal medicines, the barangay with the most number of medicinal plants identified was Dita (lowland) with 116 identified species. However, only 28% of these medicinal plants were utilized by the 28 out of 30 households surveyed. In Barangay Puro (Coastal), there were 111 species identified and 30% of these are being utilized by 26 households using the herbal medicines. Barangay Imalnod (Upland) has only 95 species identified, but has the most number of utilized medicinal plants with 32% and the most number of households, 29 out of 30. For Manito, Barangay Pawa (coastal) has the most number of identified medicinal plants with 111, followed by Barangay Malobago (coastal) with 105 and Barangay Cabacongan (lowland) with 97. On the other hand, Barangay Malobago (coastal) has the highest percentage of utilized medicinal plant with 41%, followed by Barangay Cabacongan (lowland) with 37% then Barangay Pawa (coastal) with 36%. All the respondents interviewed in Barangay Pawa and Malobago are using the herbal medicines, there was one however, in Barangay Cabacongan who said he was not using herbal medicines.

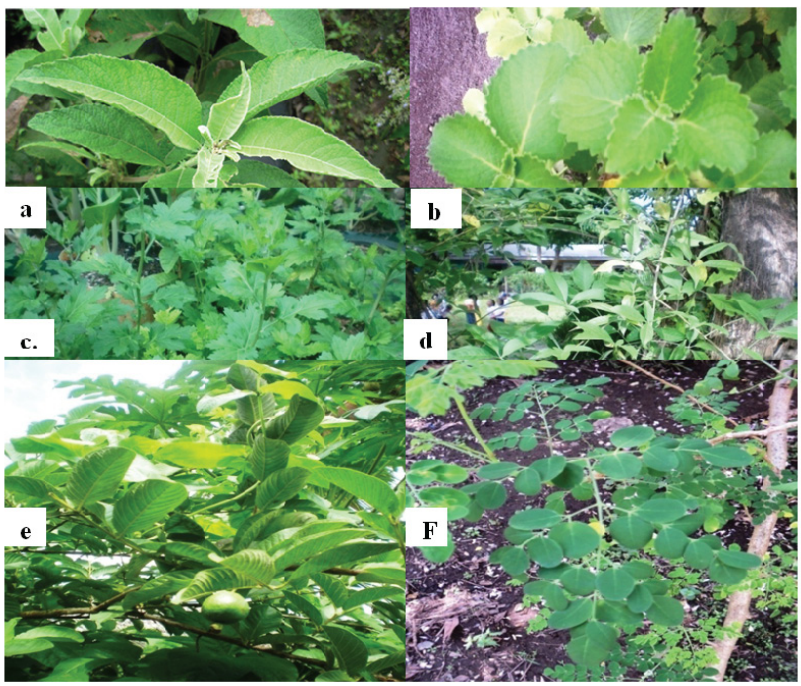

Figure 6. Six most commonly used medicinal plants: a. *Blumea balsamifera* (lakadbulan), b. *Coleus aromaticus* (oregano), *Artemisia vulgaris* (artamisa),*Vitex negundo* (lagundi), *Psidium guajava* (bayawas), and *Moringa oleifera* (kalunggay)

The household survey was conducted through the survey questionnaire method. The survey revealed a total of 74 medicinal plants used in the survey sites of Imalnod, Dita and Puro for Legazpi City, and Pawa, Cabacongan and Malobago for Manito, Albay. Based on the study, most of the household representatives surveyed in the selected barangays used medicinal plants to treat and relieve minor as well as major ailments. But there were some who are not practicing the use of traditional medicines. Out of 180 respondents, eight of them do not use medicinal plants. And out of those eight respondents only one came from Manito, Albay. According to some respondents from Manito, they resort to traditional medicines because aside from the fact that they cannot afford to buy commercial medicines; they are also very far from the hospitals and drugstores. Some of the reasons of those who were not using medicinal plants indicated are: the lack of knowledge on using medicinal plants as well as their uses, the manner of preparation and application of these medicinal plants, and their unavailability.

Indicated in the survey as the top five commonly used medicinal plants are *Blumea balsamifera* (Linn.) DC (Lakad bulan) (57.22%), *Coleus aromaticus* Benth. (Oregano) (45.00%), *Vitex negundo* Linn. (Lagundi) (27.78%), *Chrysanthemum indicum* (Mansanilla) (25.00%) and *Psidium guajava* Linn. (Bayawas) (21.67%).

Most of the medicinal plants identified in the survey are used for minor ailments such as headache, dyspepsia, flu, inflammation, chest pain, hair treatment, muscle pain, cough, stomachache, wound, dizziness, colds, fever, body pain, fungal infection, asthma, menstrual cramps, insect bite, tonsillitis, mouth sore, dyspepsia, migraine, dysmenhorrhea, sore eyes, indigestions, dog bite, sprains, diarrhea, relapse, constipation, intestinal worms, loose bowel movement (LBM), urinary tract infection, hypertension, athlete's foot, boils, "pasma", "lipot", "surip" "ponsada" and "sibang". There were also medicinal plants used for major ailments such as kidney problem, cancer, high blood pressure, low blood pressure and diabetes.

Based from the backyard sampling in the third district of Albay, a total of one hundred eighteen (118) species were identified, seventy one (71) of them were utilized as medicinal plants and forty one (41) unutilized as herbal medicine. Indicated in the survey as the top ten most commonly used medicinal plants are *Vitex negundo* L. (92.56%), *Cordia dichotoma* Forst f. (82.64%), *Clerodendrum intermedium* (72.73%), *Coleus aromaticus*(64.46%), *Psidium guajava* (62.81%), *Blumea balsamifera* (61.16%), *Moringa oleifera* (41.32%), *Artemisia vulgaris* Linn (29.75%), *Casia alata* (24.79%) and *Mentha cordifolia* (21.49%) (Table 7)

A total of one hundred eighty households (180) were interviewed, one hundred forty eight (148) of them used medicinal plants. Comparison between the miunicipality and the city in terms of the percentage of the herbal plants utilization, Ligao city has least percentage having 69.93865% while Pioduran, Albay has 91.42857%, which implies that the higher the percent of the plants being utilized, the number of the households utilizes it are also high.

The percentage occurrence of medicinal flora in the backyards of households in the Province of Albay. The result showed that among the samples the top twenty occurring medicinal plants were *mangifera indica* (manga), 31.67%, *Cocus nucifera* (nuyog), 20.19%, *Artocarpus heterophylla* (langka) 18.52%, *Musa paradisiaca* (saging), *Moringa oleifera* (malunggay) 17.78%, *Carica papaya* (Tapayas), 16.67%, *Manihot esculenta* (kamotengkahoy),14.63%,

Colocasia esculenta (gabi), 14.44%, *Blumea balsamifera* (lakadbulan), 13.89%, and *Coleus aromaticus Benth* (oregano) with 12.59%. Most of these plants are being cultivated not only for medical purposes but also as ornamental as well as a food source.

2. Utilization Documentations of the Medicinal Plants by Health Practitioners of Albay Province, Philippines

The Department of Health (DOH) has recommended 10 (ten) medicinal plants for use in the management of common ailments and illnesses in the community. These medicinal plants have underwent extensive research for its effectiveness before they are advocated.

The most commonly identified medicinal plants recommended by DOH by the health practitioners are the following: sambong, lagundi, ulasimangbato and herba buena. The least identified is bawang and tsaanggubat. sambong, lagundi, ulasimangbato and herba buena are most identified by the health practitioners because these are the plants commonly used by the local folk in the care of the sick members. Bawang is known more as a spice rather than having a medicinal property, tsaanggubat is usually used as ornamental plants which can be shaped into different forms.

The study reveals that 88.24% of the health practitioners believe that use of medicinal plants in the management of ailments does not cause any complications. They claim further that the use of medicinal plants does not bring side effects and that it is safe to use. The actions of health practitioners whenever complications arise related to medicinal plants usage is that, first is to consult a doctor, second to stop the medications and third is to give antidote. The antidote mentioned is a tablespoon of sugar to be ingested as soon as complications set in.

The problems presented by the health practitioners can be categorized into those that concerns the knowledge and skills in the use of medicinal plants; acceptability of medicinal plants to children; availability of medicinal plants; Complication/side effects of medicinal plants; Effectiveness of medicinal plants. These problems can be addressed with proper trainings on herbal plant utilization and establishment of herbal garden in their respective community.

Certain activities are suggested by the health practioners to the barangay officials. These include the following:

1. Advocate use of medicinal plants among the households
2. Initiate information dissemination on medicinal plants use as alternative medicine
3. Organize seminar-workshop regarding proper use of medicinal plants
4. Establish medicinal plants garden in the barangay.
5. Training of health practitioners on proper use of medicinal plants

The health practitioners provide ways on how they can enhance their knowledge on the use of medicinal plants. These include the following: attendance to trainings; access on different pamphlets, IEC materials; participation in the conduct of researches; provision of house to house teachings; continuous practice or use of medicinal plants in the management of diseases; maintaining medicinal plants in the backyard and participation in Mother's Classes.

Oregano, atamisa, anonang, buyo, kulungkugon and mansanilya are the other leading medicinal plants utilized by the health practitioners. Though these are not among the recommended medicinal plants of the DOH, the health practitioners claim they are effective in the management of specific ailments.

The results of the focus group discussion among the health practitioners revealed the method of preparation and administration of medicinal plants practiced by the respondents. It was noted that the usual methods of preparation of the plants include poultice (tapal-tapal), decoction (boiling), infusion and use of extract. Poultice is the application of the plants part on affected body parts. The plant parts are either crushed by hands mixed with pinch of salt and a drop of oil and applied to affected parts. Common medicinal plants administered as poultice include sambong, herba buena, tuba, anonang, atamisa, kulunkugon, and mansanilya. Decoction is the boiling of plants part in water. Variety of measures of plant parts needed is observed in decoction. Some uses seven leaves, handful of leaves or a glass or cup as the measures for the needed plant parts. No definite measures of plant parts needed is observed, estimation is rather use. Generally, the plants part is boiled with two glasses of water until it boils. Some would wait till the water is reduced to one glass only. The materials used for boiling usually are made of aluminum. The casserole is covered when cooking. Some medicinal plants are prepared by infusion. In infusion, herbal plant parts are either soaked in warm or tap water for 30 minutes. Common medicinal plants prepared as decoction include sambong, lagundi, bayabas, ulasimangbato, malunggay, tanglad, avocado, suwamangga, kaimito, taheebo, santol, banaba, tawa-tawa, makahiya. Extract of medicinal plants is done through bruising of the plant parts and squeezing the juice. Desired amount is then given per mouth. Common medicinal plants prepared as extract are akapulko, oregano, and ampalaya.

The dose of the medicinal plants particularly for the adults is usually based on how much the sick persons can tolerate. No specific measure is given. Health practitioners would simply say that what they administered is just enough "tama lang" or what he can tolerate. For children, 1/3 cup to ½ glass is the usual dose of the decoction. Infants are usually given 1/3 teaspoon of extracts particularly that of the oregano.

3. Ethnographic Accounts On The Use Of Medicinal Plants Of Albay, Philippines by Herbolarios

The use of plant, as alternative mode of medicine, and the existence of the *herbolario's* has totally stood the test of time up to this day, and it serves as part of our cultural heritage.

The result of the study revealed a total of 34 commonly used medicinal plants classified across 21 families,19 orders and 25 genera of which identifying growth forms are 10 trees, 6 herbs, 4 shrubs, 2 vines and 1 grass.

All herbolario's claimed the used of identified medicinal plants for treatment of 21 ailments. Identified medicinal plants were Sambong *(Blumea balsamifera)*, Abukado *(Persea Americana* Mill), Malunggay (*Moringa oleifera*), Buyo (*Piper betle*), Puli (*Justinia gendarussa*), Sweldan (*Euphorbia tirucalli*), Kamantigue (*Impatiens balsamina*), Banaba (*Lagerstroemia speciosa* Linn), Alagaw (*Premna odorata* Blanco), Talanisog (*Tabernaemontana pandacaque*), Makahiya (*Mimosa pudica*), Yerba Buena (*Mentha arvensis* Linn), and Abaca (*Musa textilis*) are used for treatments of 14 minor ailments like "surep", pasma, bone fracture, gas pain insomnia, joint pain , inflammation , kulibra, stomachic, wounds and rheumatism. While Tanglad (*Cymbopogon citratus* (L) DC, Bayabas (*Psiduim guajava*), Banaba (*Lagerstroemia speciosa* Linn), and papaya (*Carica papaya*) were used for treatment of major ailments like tuberculosis, kidney, chest pain, High blood and urinary tract infection.

Herbolario's used 5 specific practices for the preparation and administration of medicinal plants. This were poultice, decoction, infusion, liniment and raw–eaten Plant part. Poultice ranks as the most commonly performed practiced by the herbolario ,using the leaves, stem bark, or roots, this kind of preparation are applied externally to the body with mild complications. The next commonly used preparation is through decoction (43%) a kind

of preparation on which plant parts are boiled in water for about 10-20 minutes, this kind of preparation is administered orally as tea, or used as water bath, the leaves, stem bark or the whole plant are the commonly used plant part for this preparation. Infusion (17%) is a preparation in which hot water is poured into plant material and allows to stand while tightly covered, stand for 10 min; strain; drink hot or iced and cold, this preparation is usually prepared fresh for the day's use. Liniment (4.16%) and Raw-Eaten Plant Part (4.16%) are the least preparation mentioned using medicinal plants. Liniment is a kind of preparation which plant parts are mixed in alcohol or fried in oil to be used as external application to the skin for treatment of ailments like eczema, jointpain, andstiffness. Raw eaten plant part is a preparation done by chewing plant part (leaves or roots), to be used as cataplasm for wounds or to obtain juice extract directly from the plant. (The leaves of Malunggay (*Moringa oleifera*) are chewed raw, juice coming from the leaves is believed to cured cough with phlegm.

The most commonly used plant parts, for the mentioned practiced and preparation were the leaves (88%),stem bark(21%), fruits (8.33%),seeds(4.16%),roots(4.16%) and whole plant (4.16%).The frequent used of leaves in almost all preparation was based on belief of the herbolario's that leaves contain the most medicinal constituent of a certain plant.

Sambong (*Blumea balsamifera*) 55%, Buyo (*Piper betle*) 50%, Abukado (*Persea Americana* Mill), 40%, Artamisa (*Artemisia vulgaris*) 35%, Tubang-Bakod (*Jatropha curcas*) 30% and Guava (*Psiduim guajava*) are the top 5 most commonly used medicinal plantsby the herbolarios in the province of Albay.

Most of the preparations done for herbal healing practice ,are preformed through poultice (63%), followed by decoction (43%), infusion (17%), liniment and raw eaten plant part with (4.16%). The practice that they employed on the use of medicinal plant are also performed worldwide.

The most commonly used plant part for herbal medication are the leaves (88%), followed by the stem bark (21%), the fruits (8.33%) while the least used part are the seeds, roots, whole plant, gum or sap with 4.16 %.

Herbolarios from Albay believed that most herbal components of a certain plant are found in the leaves, so they use this frequently for almost all preparations. Knowledge about the use of certain plant parts is also based on the knowledge from traditonal practices they inherited from old folks, while some testified that through dreams. God talk to them and give them instruction on how certain plants are used for treatment of diseases as accounted by Beata Gersalya, a herbolario / hilot for almost 16 years.

4. Handling Down Of Traditional Knowledge On The Use Of Medicinal Plants In Albay Province, Philippines

The transmission of traditional plant knowledge begins at an early age, as a family custom, in which women play a predominant role. Medicinal plant use and its application continue to be learned during adulthood. There are about 25 species, all of which were claimed to be found locally. This number of species is so small compared to those identified in the household survey. Most of the medicinal plant species known to the youth are those cultivated in the backyard, either as edible material or as ornamental plants.

Urban and rural youth respondents have the same perception about the importance of the medicinal plants. It was even observed during the interview that these youth are more concerned about the presence of these materials in the locality, and that they may have a hard time identifying them today. With their parents around, they may be able to know more about these medicinal plants.

The Albayano youth recognizes the source of information as avenue for their being dependent on the use of medicinal plants, most specially those from remote areas where health services is scarce. Parents are rich sources of information and that the transmission of these traditional knowledge is likewise a part of the culture of Albayanos. Basically, the family activities, exemplified by the traditional use of medicinal plants, is a family culture which preserves the traditional knowledge through generations.

There is not much difference in the responses of the Albayano youth from the three districts of the province. These top three (3) responses on how the knowledge could be retained in them are still associated with the strong family culture wherein, what the parents have taught their children, they become part of their way of life.

Knowledge on the use of medicinal plants includes identification of the plant material themselves. The voluminous plants occurring in the locality is a rich source of materials for Albayanos, however, what is crucial is knowing what these medicinal plants are and how can they be recognized. Figure 8 shows that Albayano youth have been taught on how to identify and use the medicinal plants by the following: parents and family members, neighbors and the herbolarios themselves. These are the significant people who may be considered adult transmitters to the youth members of the community. Members of the family are still indispensable persons who would strengthen traditional knowledge, most specially on the use of medicinal plants as an important family health care modalities.

Albayano youths also recognize some problems / concerns on the use of medicinal plants. They are insufficient knowledge on the proper use of the medicinal plants, with the idea that they are not so sure if they are effective and safe, and they are not confident on the correct method of preparation. While Albayano youth are familiar with some medicinal plant species, their confidence on the proper use is somewhat low and needs enhancements. The youth are indispensable members of the community that may be identified as transmitters of traditional knowledge on the use of medicinal plants. The mode of transmission may not have been documented, however, it is evident that youths themselves have considered the use of medicinal plants as component of their way of life. Young and adults are considered transmitters and that these practices have been learned since childhood. Parents and other family members were considered the major transmitters, the source of learning. There were likewise extra-family learning (neighbors and herbalists).

Conclusion

The diversity of medicinal flora. and ecological indices were calculated and compared with the different sampling sites. A total of two hundred twenty-four (224) species representing eighty three (83) families were identified. Among the three districts of Albay, first district was noted to be the most diverse community with a diversity value of 3.94, followed by third district and second district with 3.8 and 3.75, respectively. The three most important species include *Musa paradisiaca* (batag), *Colocasia esculenta* (natong/apay) and *Mangifera indica* (mangga). In terms of biodiversity, ANOVA showed highly significant difference among the three districts. Pairwise comparison revealed that the First District emerged as the most diverse having recorded a total of 190 species of medicinal flora. compared to the 170 and 119 species identified in the second and third districts, respectively.

A total of one hundred ninety (190) medicinal plant species belonging to sixty-nine (69) families were identified. The results of the household interviews showed that only a very small number of medicinal plants present in the area are being utilized by the people. On the other hand, diversity of these plants in both urban and rural barangays did not differ significantly. Residents of both urban and rural areas were noted to be dependent on using medicinal plants in treating common ailments

such as colds, body pain and rheumatism. The most commonly used medicinal plant was *Blumea balsamifera*, locally known as lakad-bulan. This was followed by *Coleus aromaticus* (oregano), *Artemisia vulgaris* (artamisa), *Vitex negundo* (lagundi), and *Psidium guajava* (bayawas) and *Moringa oleifera* (malunggay).

The health practitioners utilize medicinal plants and advocate its use in the management of common ailments in the community. The practices in the utilization of medicinal plants of health practitioners are majority based on folkloric. The health practitioners experienced problems and offered solutions relative to the use of medicinal plants in the management of common illnesses and are willing to enhance their knowledge and skill in the use of medicinal plants.

Thirty-four (34) medicinal plants identified were used by traditional healers to treat 20 ailments, 14 are consider minor ailment ("surep," pasma, bone fracture, loose bowel movement, fever, cough, gas pain, insomia, joint pain, inflammation, *kulibra*, stomachache, wounds and rheumatism, and (6) are major ailment like tuberculosis, urinary tract infection, chest pain, high blood, appendix, kidney disorders. The medicinal plants used by herbolarios belongs to 21 families, 19 orders and 24 genera. Identifying growth forms are 10 tress, 6 herbs, 4 shrub , 2 vines and 1grass. The most frequently utilized plant part was the leaves. Poultice is the most frequently use preparation. Most of the administration route are oral and external.

Traditional knowledge related to the use of medicinal plants in Albay Province is still transmitted over generations, most especially in rural populations. The medicinal plant species commonly known and used by Albayano Youths are about 25 species, all of which were claimed to be found locally. The transmission of traditional knowledge begins in the early stages of childhood. Utilization of medicinal plants among the youth implies personal connections with nature that might provide opportunities for learning, encouraging the development of attitudes which are associated with the protection of the environment.

Recommendations

It is recommended that traditional medicine campaign may be conducted to the local barangays to increase the awareness of the folks as to the proper uses and the dose of the plant being used as herbal medicine. Moreover, in- depths researches may also be conducted; especially to some commonly used medicinal plants which have very few scientific evidences of its medicinal value. Furthermore, active components of these medicinal plants may also be identified in order to establish its usefulness and validate the safety and efficacy of the herbal remedies.

The City Health Office should provide trainings to health practitioners particularly the barangay health workers and Barangay Nutrition Scholar regarding proper utilization of medicinal plants in the management of common illnesses. The Local Government Unit in partnership with the City Health Office under its Primary Health Care Approach must include among its priority programs the use of medicinal plants as an alternative medicine and treatment. The health practitioners to initiate own responsibility in strengthening awareness, knowledge and skills toward herbal medicine. The barangay unit must be empowered to establish herbal garden with medicinal plants commonly used which are proven scientifically effective for the management of common illnesses. The Philippine Council for Health and Research Development and DOST to continue to conduct researches to prove the effectiveness of the medicinal plants in the management of diseases.

There is one main concern as a challenge in preserving the traditional knowledge on the use of medicinal plants, that is, to find innovative ways on how to transmit the traditional knowledge to new generations, to guarantee that it will not be lost. Hand–in-hand or in partnership with the national education systems, revitalizing the traditional knowledge may be done to include the same into the school curriculum, most specially in the mother-tongue based bilingual education initiatives.

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Factors Predicting Active Aging of the Elderly in Nakhon Pathom Province

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Abstract

This research entitled "Predictive Factors of Active Aging of the Elderly in Nakhon Pathom"was a descriptive research aimed at studying the determinant factors of active aging and the active aging of the elderly in Nakhon Pathom, Thailand, as well as studying the predictive powers of the determining factors of active aging on the active aging of the elderly in Nakhon Pathom. The sample group consisted of 420 subjects aged 60 years and over living in Nakhon Pathom. This study determined the size of the sample group by using Taro Yamane's formula with the reliability set at.95. Purposive sampling was used for the selection of the sample group. The research instruments consisted of the Elderly Demographic Data Record Form developed by the researcher, including gender, marital status, family income and chronic illnesses; the Active Aging Determinant of the Elderly Measurement Form translated from the World Health Organization (2002:19) containing thirty questions on seven aspects, and the Active Aging of the Elderly Interview Form translated from the World Health Organization (2002:19) containing twenty-five questions in three aspects. Data analysis was performed by a computer program by using descriptive statistics (percentage, mean and standard deviation). Pearson's Correlation Coefficient was set with reliability at. 05, and the stepwise multiple regression analysis was used in order to obtain the predictive powers of active aging determinants on active aging in the Elderly in Nakhon Pathom.

The findings of research showed that the overall score for determinant factors of active aging of the elderly in Nakhon Pathom was at a high level with the highest mean score was environment influenced health aspect. The correlations between the determinant factors of active aging and the active aging of the elderly in Nakhon Pathom were high (r=0.794). Determinant factors could co-predict active aging of the elderly in Nakhon Pathom by 63 percent with statistical significance at. 01.

According to the findings of the study, it can be concluded that agencies involved in elderly healthcare such as sub-district health promotion hospitals, local administrative organizations, district public health offices, provincial public health offices and health promotion agencies in hospitals should provide effective health and social services for the elderly, promote appropriate behavioral determinants in the elderly and create a safe environment for the elderly in order to improve a good quality of life in the last stages of their lives.

Keywords: Aging, Active Aging, Elderly

Background and Significance of the Problem

Thailand is quickly transforming into an aging society where evidences revealed that elderly population currently stands at roughly six million people, and this number is expected to reach 10.8 million people by 2020 (Public Health Research Institute, 2007), a rapid change into an aging society. Consequently, Thai society does not have much time to prepare in terms of people and geriatric care systems. Therefore, effective planning and strategies are required to prepare the people who are becoming elderly in the future to age with quality.

With a large proportion of elderly in the population, elderly dependency naturally increases, which means people of the working age will have an increased burden from the care of elderly. In contrast, the rate of child dependency has decreased from the past, which means there are fewer children in the current population.

The changes in Thai population structure increase the number of elderly as the country rapidly transforms into an aging society. With that in mind, the National Plan for the Elderly No. 2 (2002-2021) Strategy 1, which is concerned with preparations for a quality elderly population, reported that few studies have been conducted on this issue. Importantly, Thai people do not perceive the significance of being prepared to handle the increasing number of the elderly population.

As people enter old age, drastic physical, social and environmental changes quickly take place and cause stress in life. In response, people need to adjust to a changing environment. With good life preparations such as maintaining the good mental health, no abnormal symptoms or behaviors will occur. On the contrary, without preparations or with poor mental health, adaptation will be difficult and cannot respond to causes; this leads to changed behaviors, and terminate in illness as a result. Accordingly, there are seven primary factors influencing to the adaptation of the elderly in living their lives in a manner that achieves active aging as follows: Culture and Gender, Health and Social Service, Behavioral Determinants, Personal Determinants, Physical Environment, Social Determinants and Economic Determinants (World Health Organization, 2002:19).

Thus, the researcher is interested in conducting a study of the seven predictive factors of active aging of the elderly in Nakhon Pathom in order to determine the extent to which social and environmental changes with physical, mental, emotional and spiritual changes in the elderly affect quality of life in the elderly. All of these factors influence the active aging processes of the elderly. The researcher and the research team created this research to study the predictive factors of active aging among the elderly in order to determine which factors are involved in the active aging process as well as promoting awareness in the personnel and agencies involved the preparation of increasing number of elderly and in order to provide a guideline for assistance and plans in handling the approaching situation of the elderly population.

Conceptual Framework

The present research used the active aging concept of the World Health Organization contains three main active aging themes as follows (World Health Organization, 2002):

1. Health of the elderly, which is the primary factor for independent living free from dependency.

2. Preservation of the capabilities of the elderly to keep participating in society.

3. Social stability or social security of the elderly.

In addition, there are seven key factors that influence the living adaptation of the elderly that achieves active aging as follows: 1) Culture and Gender, 2) Health and Social Service; 3) Behavioral Determinants; 4) Personal Determinants; 5) Physical Environment; 6) Social Determinants and 7) Economic Determinants. Concepts and theories

have been integrated into the conceptual framework shown in the diagram below (World Health Organization, 2002)

Research Objectives

1. To study the determinant factors of active aging and the active aging of the elderly in NakhonPathom.

2. To determine the correlations between personal determinants of the elderly, namely gender, marital status, income sufficiency, family characteristics, chronic illnesses and determinant factors of active aging and active aging of the elderly in Nakhon Pathom.

3. To study the predictive power of personal determinants of the elderly, namely,gender, marital status, income sufficiency, family characteristics, chronic illnesses and determinant factors of active aging on active aging of the elderly in Nakhon Pathom.

Research Hypothesis

1. Personal determinants of the elderly, namely, gender, marital status, income, sufficiency, family characteristics, chronic illnesses and determinant factors of active aging are correlated with the active aging of the elderly in Nakhon Pathom.

2. Personal determinants, namely gender, marital status, income sufficiency, family characteristics, chronic illnesses and determinant factors of active aging can co-predict the active aging of the elderly in Nakhon Pathom.

Expected Benefits

1. The research findings can be applied as a guideline for planning and organizing projects to improve the quality of life of the elderly in the community by promoting the elderly with appropriate adaptation to physical, emotional and social changes today in a manner that leads to quality of life improvement.

2. Provide a practice guideline for research and development of knowledge on active aging in Thai elderly and processes associated with active aging and elderly in other relevant topics.

Research Methodology

Descriptive research procedures were applied in the present study. The study was conducted on the determinant factors of active aging and active aging of the elderly, and correlations were sought between the determinant factors of active aging and active aging in order to determine the predictive power of the determinant factors of active aging on the active aging of the elderly in Nakhon Pathom. The research procedures are as follows:

Population and Sample Group

The population selected for the this research consisted of elderly, aging 60 years and above, residing in Nakhon Pathom whose names appear on the civil registration in which 83,891 elderly people were discovered. Taro Yamane's formula was used to determine the size of the sample group (Taro Yamane, 1973) with the reliability set at .95. According to the calculation of the formula, 420 subjects were obtained for the sample group and they were selected by simple random sampling.

Research Instrumentation

The instrumentation used in this research consisted of the following three record and measurement forms:

1. Elderly Demographic Data Record Form created by the researcher consisting of gender, marital status, family income and number of chronic illnesses.

2. Active Aging Determinant of the Elderly Measurement Form translated from the World Health Organization (2002: 19) containing thirty questions on seven aspects.

3. Active Aging of the Elderly Interview Form translated from the World Health Organization (2002: 19) containing twenty-five questions on three aspects.

Both interview forms translated from the World Health Organizations (2002:19) were examined for instrument validity and reliability by qualified experts using Pearson's Product Moment Correlation Coefficient to obtain Alpha = 0.87

Rights Protection of the Sample Group

The researcher requested a letter of certification from the Institutional Review Board on Research Involving Human Subjects of Christian University in order to protect the rights of the sample group. The researcher also explained the objectives of the present research to the sample group.

Data Analysis

The data obtained from the interviews were processed and analyzed using a computer program according to the following procedures:

1. The demographic data of the population were analyzed using frequency and percentage.

2.The data on the determinant factors of active aging and active aging of the elderly were analyzed in individual items, on individual aspects and from an overall perspective, using mean and standard deviation, along with mean value interpretation of determinant factors of active aging and active aging.

3. Correlation analysis was conducted on personal determinants, namely, gender, marital status, income sufficiency, family characteristics, chronic illnesses and the determinant factors of active aging and active aging of the elderly in NakhonPathom using Pearson's Product Moment Correlation Coefficient and correlations between quality variable and quantitative variables using Eta values, followed by correlation coefficient significance testing.

4. Multiple regression coefficient analysis was conducted using stepwise multiple regression in order to obtain predictive factors of active aging in the elderly in NakhonPathom with personal determinants, namely, gender, marital status, income sufficiency, family characteristics, chronic illnesses and determinant factors of active aging with statistical significance at p-value < 0.05.

Data Analysis

The findings of the research are divided into the following five parts: Part 1-Demographic Data of the Elderly; Part 2-Determinant Factors of Active Aging of the Elderly; Part 3-Active Aging of the Elderly; Part 4-Correlation between personal determinants, namely, gender, marital status, income sufficiency, family characteristics, chronic illnesses and determinant factors of active aging and Active aging of the elderly and Part 5-Predictive Power of active aging in the elderly.

Part 1 - Demographic Data of the Elderly

The majority of the sample group was composed of females (62.10%) aged from 60-65 years (49.28%) with ages ranging between 66-70 years (23.34%). Only 3.10 percent of the sample group was aged above 80 years. On marital status, the majority of the sample group was married and cohabited with a spouse (61.90%), followed by widowed (21.40%). Only 1.40 percent of the sample group was divorced. The majority of the sample group had completed primary education (74.71%), followed by no education (11.40%). The majority of them were Buddhist (99.50%) and unemployed (37.60%); 22.90 percent worked as general employees, and 5.20 percent were elderly civil servants on pension. The majority of the sample group earned between 1,000-3,000 Baht per month (26.00%), followed by no personal income (16.90%). Regarding income sufficiency, the majority of the sample group had sufficient earnings (71.90%). On family characteristics, the majority of the sample group were elderly and lived alone (66.40%), followed by those who lived with extended families (33.60%). For chronic illnesses, the majority of the sample group had chronic illnesses (51.20%), with the five most frequently encountered chronic illnesses in the sample group being hypertension (50.24%), diabetes mellitus (30.73%),

hyperlipidemia (10.73%), pulmonary illnesses (8.29%) and two illnesses that ranked fifth: peptic ulcers and heart disease (5.85%).

Part 2 - Determinant Factors of Active Aging of the Elderly

The elderly had a high overall mean score on the determinant factors of active aging in the elderly (=3.19, S.D.=0.38). Consideration of the individual aspects of determinant factors of active aging of the elderly, it revealed a high overall mean culture and gender (=3.15, S.D.=0.51), high overall and individual health service with overall mean score of = 3.21, S.D.=0.70, high overall behavioral determinants (=3.23, S.D.=0.48), moderate overall and individual determinants with an overall mean score of =2.65, S.D.=0.73, high overall and individual physical environment with mean score of =3.47, S.D.=0.51, and high overall and individual economic determinants with overall mean score of =3.42, S.D.=0.53.

Part 3 - Active Aging of the Elderly

The mean overall score of active aging of the elderly was high (=3.23, S.D.=0.49). Consideration of the individual aspects of active aging of the elderly, it revealed higher overall mean health (=3.17, S.D.=0.46), highest overall participation (=3.16, S.D.=0.53), and high overall and individual social stability with overall mean at =3.38, S.D.=0.50.

Part 4 – Correlations between Personal Determinants,Namely Gender, Marital Status, Income sufficiency, Family Characteristics, Chronic Illnesses and Determinant Factors of Active Aging in the Elderly

Table 1: Correlations between Personal Determinants, Namely, Income Sufficiency and Determinants of Active Aging and Active Aging of the Elderly

Variable Active Aging of the Elderly	Correlation Score (r)
Income Sufficiency	.187*
Determinant Factors of Active Aging	.794*

** Significant correlation at 0.01 (2 tailed)

* Significant correlation at 0.05 (2 tailed)

According to Table 1, income sufficiency was positively correlated with the active aging of the elderly to a small degree with statistical significance at .05 (r =.187) and the determinant factors of active aging positively were correlated with an active aging of the elderly to a high degree with statistical significance at.05 (r =.794).

Table 2: Correlations between gender, marital status, family characteristics and chronic illnesses and active aging of the elderly.

Variable	Active Aging of the Elderly Correlation Score (Eta)
Gender	.070
Marital Status	-.043
Family Characteristics	.070
Chronic Illnesses	.064

According to Table 2, gender and active aging of the elderly had no correlations with statistical significance at. 05, marital status and active aging of the elderly had no correlations with statistical significance at.05, family characteristics and active aging of the elderly had no correlations with statistical significance at.05 while chronic illnesses and active aging of the elderly had no correlations with statistical significance at .05.

Part 5 – Predictive Power of Personal Determinants of the Elderly, Namely, Gender, Marital Status, Income sufficiency, Family Characteristics, Chronic Illnesses and Determinant Factors of Active Aging of the Elderly in Nakhon Pathom

Table 3: Multiple Correlation Coefficient (R) between Selected Variables into the Multiple Regression Equation, Adjusted Predictive Coefficient Scores (R2) and Significance Testing of Adjusted Predictive Coefficients in Predicting Active Aging of the Elderly by Stepwise Multiple Regression

Step	Predictor	R	R^2	Adjusted R^2	b	t	Beta	Sig T
1	Determinant Factors of Active Aging	.794	.630	.629	.526	5.166	.794	.000
2	Determinant Factors of Active Aging Family Characteristics	.797	.635	.633	.446	4.177	.794	.000
	Constant (a) = .446			F = 361.301				

According to Table 3, the first predictor in step 1 of the stepwise multiple regression analysis was the determinant factors of Active Aging because it had the most correlations with an active aging of the elderly with a predictive sufficient score of .630, showing that determinant factors of active aging can predict the active aging of the elderly by 63.00 percent with statistical significance (p<.01). Furthermore, the selected predictor during step 2 of the analysis was family characteristics with adjusted predictive coefficient at 63.50 percent (p<.01). And once the remaining predictors, namely, gender, marital status, income sufficiency and chronic illness were added in subsequent steps of the analysis, the predictor coefficients changed without statistical significance. Therefore, the use of stepwise multiple regression analysis to obtain predictors of Active Aging of the Elderly concluded in Step 2.

Therefore, after stepwise multiple regression analysis, it became evident that the predictors capable of predicting the active aging of the elderly with statistical significance were determinant factors of active aging and family characteristics. And both factors can co-predict fluctuations in the active aging of the elderly by 63.50 percent with statistical significance (p<.01).

Recommendations

Based on the findings, the researcher recommends the following for public and private agencies in charge of elderly health and hygiene care in creating projects and activities to promote the health of the elderly:

1. Elderly persons residing in Nakhon-Pathom should be promoted to fully attain all of the determining factors of active aging.

2. Positive thinking on personal determinants should be promoted in the elderly. In other words, the elderly experience physical deterioration, and the personal determinants of each elderly are different.

3. Create a safe environment for the elderly.

Recommendations for Further Research

1. Studies should be conducted in other factors potentially influencing the active aging of the elderly, e.g., health promoting behaviors, participation in elderly associations, attitudes toward elderly, perceived health status and self-worth in the elderly.

2. Experimental studies should be conducted to promote health in a manner such that active aging is promoted in the elderly, e.g., elderly exercise, social participation model, etc.

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Health Care for Thai People Living with Cancer

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Abstract

Cancer is the leading cause of death in Thailand, and is increasingly affects both social and economic problems of the country. However, Thai people have learned from various experience of cancer that makes them not to ignore or surrender to this health problem. Under the universal health care coverage, Thai people have an access to care and gain better information regarding "cancer". Some knowledge about cancer are also provided by the media all over the country, especially through the internet networking where people can select some information and seek for some more reliable knowledge about cancer. Some alternative treatment can be an appropriate choice for people living with cancer to gain quality of life. In addition, the Thai healthcare system provides optimal services to care for cancer patients, especially the Thai nursing system where nursing administration and nursing education strengthen nursing practice and research in order to develop best practices for cancer patients. Therefore, this paper attempts to focus on some literature and evidences on cancer in Thai society to broaden more useful knowledge.

Keywords: Thai people, Cancer, Holistic Care

Introduction

Cancer in Thailand has become a serious health problem. It is the leading cause of death in Thailand, and increasingly affects both social and economic problems of the country. This paper is a literature review of holistic care for Thai people living with cancer'and is presented into three topics: 1) situation of cancer in Thailand, 2) Thai people and cancer, and 3) care for Thai people living with cancer.

Situation of Cancer in Thailand

There is an evident spread of cancer disease among Thai people. According to the update report of cancer statistics in Thailand from the three main hospitals in Bangkok including Siriraj Hospital, Ramathibodi Hospital and National Cancer Institute, it was found that the most leading cancer in male was liver and colon, while breast was the most leading cancer in female (Ramathibodi Cancer Center, 2013; Siriraj Cancer Registry, 2013; National Cancer Institute, 2011). Lately, however, the report from the Director of National cancer institute has shown that the most common cancer among Thai people in male is liver, lung, colon, prostrate and lymphoma, while in female is breast, cervix, liver, lung and colon, respectively (Thai Health Promotion Foundation, 2012). Although the cancer statistics of different institutions are different,but cancer has become a major cause of death among Thai people.

Geographically, Thailand is divided into four major regions; the North, Northeast, Central, and South. There is a representative hospital-based cancer registry in each region,

namely Chiang Mai in the North, Khon Kaen in the Northeast, Songkhlain the South, and Bangkok, the capital city of the central area. Data from each registry show different cancer sites as most prevalent. Liver cancer, especially cholangiocarcinoma, is the most prevalent cancer in Khon Kaen, (Cancer Unit, Khon kaen University, 2013); whereas, lung cancer predominates in the North (Chiangmai Cancer Registry, 2011), and, trachea, bronchus and lung cancer are significantly high in the South (Paradee Preechawittayakul, 2011).

In the past, treatment of cancer patients in Thailand was not modernized up to the level of that in the western countries. Also, advances in the basic and clinical research in cancer were hampered by the shortage of qualified medical and research personnel and inadequate funding. Effective managementof such problems depends on many significant factors, including a strong leadership with a clear vision and aspiration, as well as the ability to mobilize resources from the government and private sectors for the continuing success of the operations for the benefits of overall people in Thailand (Chulabhorn Hospital, 2012).

Nowadays, Thai people have learned from various experience of cancer that make them not to ignore or surrender to this health problem. For example, several cancers can be prevented by a nationwide campaign of health education to prevent raw fish intake, antidrinking alcohol and an antismoking campaign. An appropriate cervical cancer and breast cancer screening program can improve the recent prevalence of both and lead to better results of treatment. Research related to the carcinogenesis mechanism of certain cancers can lead to greater understanding and a better plan of control. In addition, the facilities for cancer treatment in Thailand are fairly good. Most of the provincial hospitals can handle primary treatment, especially surgical care, however the university hospital in each region remains to be the center of referral for cancer care. (Vatanasapt, Sriamporn, and Vatanasapt, 2002).

Thai People and Cancer

It is quite a common situation among Thai people that there is at least one person in the family that has cancer. Since cancer can be prevented, and the treatment facilities are not limited to only rich people.Under the universal health care coverage, Thai people have an access to care and gain better informationregarding “cancer”. Knowledge about cancer is also provided by the media all over the country, especially through the internet networking where people can select some information and seek for some more reliable knowledge about cancer.

Cancer is associated with lifestyle

Everyone knows that the people lifestyle is very important to their health. Inappropriate lifestyle can cause impact on health, and can bring “illness” to people. Thai people also have learned that having unhealthy food and stressful life events would lead them to risk of having cancer(Thai Society of Clinical Oncology, 2009). The toxic agent from food and the environment can also harm people health as well as cause cancer. Liver fluke [Opisthorchisviverrini (OV)], in raw fish related to cholangiocarcinoma accounts for about 89% of all liver cancers in KhonKaen (Vatanasapt, Sriamporn, and Vatanasapt, 2002). The habit of eating uncooked Cyprinoid fish which are infected with OV is the source of the high prevalence in northeastern Thailand. Cancer is such a common disease,given that many families have at least few members who

have had cancer. Sometimes, certain types of cancer seem to run in some families. Mostly, family members have certain risk factors in common, such as smoking and drinking alcohol, which can cause many types of cancer. However, in some cases the cancer is caused by an abnormal gene that is being passed along from generation to generation. Although this is often referred to as inherited cancer, what is inherited is the abnormal gene that can lead to cancer, not the cancer itself. When someone has inherited an abnormal copy of a gene, their cells already have started out with one mutation. This makes it easier and quicker for enough mutations to build up for a cell to become cancer. That is why cancers that are inherited tend to occur earlier in life than cancers of the same type that are not inherited (American Cancer Society, 2012).

Cancer no longer means "death"

In the past, when people were diagnosed as 'having cancer', it meant that they were dying. From Thai people's perspectives, cancer meant 'death', and that brought sadness and unhappiness in the family. They believed that nothing could help cure the disease, and that cancer patients should be prepared to take that 'death'.

Nowadays, Thai people know and learn more about cancer. They know that if it can be detected early, they can fight against it and more importantly, they can fight for their quality of lives. The advanced treatment of surgery, chemotherapy and radiation as well as alternative treatment plays a role of integrated therapeutics to overcome cancer. In addition, the health service accessibility in our health care system is not unreachable any more in terms of 'universal health coverage' for Thai people. Some chemotherapy can be used for Thai who have only a 'universal health coverage card'. However, there are some medications which patients need to pay by themselves (Fund for Outpatient Services Development, 2010).

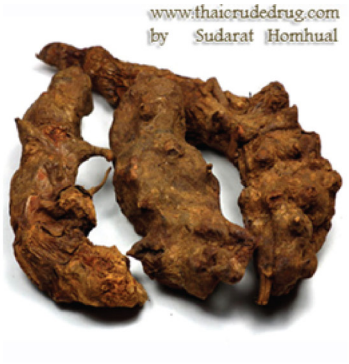
Alternative treatment

There was a research study of cytotoxic activity of Thai medicinal plants for cancer treatment. In the study, twelve Thai medicinal plants as the ingredients of a Southern Thai traditional formula for cancer treatment were selected to test cytotoxicity activity against two types of human cancer cell lines: large cell-lung carcinoma and prostate cancer cell lines, and one type of normal human cell line, fibroblast cells. The ethanolic extracts of six plants (Brideliaovata, Curcuma zedoaria, Derris scandens, Dioscoreamembranacea, Nardostachysjatamansi, and Rhinacanthusnasutus) showed cytotoxic activity against lung and prostate cancer cell lines. Dioscoreamembranacea roots showed the highest cytotoxic activity against lung cancer cell lines but it exhibited low cytotoxic activity against prostate cancer cell lines and less cytotoxic activity against normal cell lines. Curcuma zedoaria showed cytotoxic activity against lungcancer. These two ethanolic plant extracts (Dioscoreamembranacea and Curcuma zedoaria) which showed specific activity against lung cancer cell lines and less cytotoxic activity against normal cells should be further investigated for active compounds against lung cancer cell (Saetung, Itharat, Dechsuku, Keawpradub, Wattanapiromsakul, and Ratanasuwan, 2005).

The Palliative care in Thai health care services has been provided for cancer patients in their terminal illness. As mentioned above, cancer is one of the leading causes of death, and hospital admission rates for cancer patients are approximately 78 people per 100,000, suggesting that almost 90% of diagnosed cancer patients die from the disease (Kelly, Mutetwa, and Novoson, 2006). For many patients and their loved ones, hospice and home care offer an alternative approach to facing a terminal illness. Palliative care is used when patients decide to discontinue curative care. Palliative care programs are geared towards ensuring that the final days of the patient are peaceful and dignified. It is an approach that improves the quality of life

Curcuma zedoaria

Curcuma zedoaria



Dioscoreamembranacea

of patients and their families facing the problems associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual. Through palliative care programs, patients are treated not only for the physical ailments, but also for their psychological and spiritual needs.

Many hospitals across the country have employed the palliative care for cancer patients at the end of life both in the hospital and patients'home. (Chalermchart, 2012). The Thai Palliative Care Society is also a resource for cancer patients and their families in order to cope with the terminal illness (Thai Palliative Care Society, 2012).

Table 1: Palliative Care Provision in Thailand

	Consultancy	Spiritual support	Inpatient Unit/ beds	Inpatient beds	Home Care Service/ patients	Out-patient Clinic (inc. pain)
Tertiary hospitals						
King Chulalongkorn Memorial Hospital (Division of Radiation), Bangkok	√	√	√ 3 beds			√
Maharaj Nakhon Hospital (Division of Therapeutic Radiation and Oncology), Chiang Mai	√			√ 2 beds		
Ramathibodi Hospital (Department of Nursing), Bangkok	√	√		√ 2 beds	√ 2 patients per week	
Siriraj Hospital (Department of Paediatrics), Bangkok	√			√ 5 beds		√
Songklanagarind Hospital, Hat Yai	√	√				√
Srinagarind Hospital (Department of Paediatrics), Khon Kaen	√					√ 1 clinic per month
Private hospitals						
Wattanosoth Hospital, Bangkok Hospital Medical Centre	√	√		√ 37 beds		√

	Consultancy	Spiritual support	Inpatient Unit/ beds	Inpatient beds	Home Care Service/ patients	Out-patient Clinic (inc. pain)
National and regional cancer centres						
National Cancer Institute, Bangkok	√				√	√
Mahavajiralongkorn Cancer Centre, Thanyaburi, Phatum Thani	√	√	√ 8 beds		√ 5 patients per day	√ 3 hours per week
Faith-based community facilities						
Camillian Social Centre, Huay Pong, Sarong		√	√ 50 beds			
Mercy Centre, Bangkok		√	√ 40 beds			
St Clare's Hospice, Lumlakka, Phatum Thani		√	√ 16 beds			
Wat Phrabat Nampu Aids Hospice, Lop Buri	√	√		√ 400 beds		

From : www.eolc-observatory.net/global_analysis/pdf/thailand_country_report_pdf

Currently, at least 13 organizations provide 40 hospice-palliative care services, mostly to inpatients. Eight of these organizations are government facilities (tertiary hospitals and cancer centers), one of them being a private hospital and two faith-based institutions (Table 1). Alongside these providers a wide range of groups give compassionate care to the dying cancer patients in Thailand.

Care for Thai People Living with Cancer

Not only the Thai people who have cancer live with it, but also their families and friends. Therefore, the care, focuses on patients'physical, psychological and spiritual health as well as the prevention of disease among family members, and optimal health promotion in patients. In what follows, the National Cancer Control Programmes, health care services and nursing system will be reviewed to portray the care for Thai people and family living with cancer.

I. NCCP Thailand

The National Cancer Control Programmes (NCCP) in Thailand has been developed in 1998 to fight with four common cancers in Thailand: liver, lung, cervix and breast cancer. The aim of cancer control is to reduce both incidence and mortality rates of the disease. Objectives of NCCP Thailand include: to make optimal use of limited resources for the benefit of the whole population; to achieve high coverage with early detection and screening measures; to ensure equality of access to cancer care; and to improve control of symptoms. Priority actions for NCCP according to medium level of resources are as follows: (Khuhaprema, 2009; National Cancer Institute, 2013).

1. Cancer informatics: The cancer registry is an essential part of anynational programme for cancer control. In Thailand, a population-based nationwide cancer registry was established in 1988. Currently, nine population-based cancer registries have participated in the programme. An international network of cancer registry is also important since National Cancer Institute (NCI) is a member of Asian cooperation for cancer prevention. Working together in the region brings effective cancer management.

2. Primary prevention : Prevention means minimizing or eliminatingexposure to carcinogenic agents, as well as reducing individual susceptibility to the effect of such agents. Preventive-Activities include tobacco control, reducing alcohol consumption, physical activity and avoidance of obesity, healthy dietary practices, reducing occupational and environmental exposure, immunization against hepatitis B virus, prevention and control of Opisthorchisviverrini infection, and public education related to cancer.

3. Early detection : The NCCP of Thailand has included programmes for screening and early detection of cervical, breast, oral and colorectal cancer. At present, the national policy to perform Pap smear test in the women, aged 35, 40, 45, 50, 55 and 60 years in all of the primary health care centers and hospitals in Thailand has been employed. Department of Medical Services (National Cancer Institute) is responsible for screening by Pap smear.

4. Treatment : The establishment of a National Working Group for all common cancers including cervical, breast, lung, liver and colorectal cancers has improved cancer care by using clinical practice guidelines and appropriate referring system.

5. Palliative care: Most of cancer cases in Thailand are incurable when diagnosed. Palliative care therefore deserves high priority in cancer therapy. The development of cancer pain control guidelines for health care providers and patients help reduce patients' suffering. The home visit and home care services to give palliative care for low income patient are also provided to improve quality of life.

6. Cancer research: Basic, clinical and epidemiological research are being conducted to gain more complete understanding of the genetic, environmental, behavioral and sociocultural factors in the development of common cancers. The collaborative research projects between Thai scientists and experts from different countries in the region were also conducted.

II. Health care services

Health care services are as important as self-care since patients need proper care from health care providers in order that they can care for themselves. In Thailand, the health care services from government sector are the main services to care for cancer patients. However, the private sector also plays an important role to help cancer patients to fight with their illnesses. Seven regional cancer centers across the country work cooperativelywith the NCI. Under the government sector, the university hospitals also do the job of caring people living with cancer. In addition, Chulabhorn Hospital and Chulabhorn Cancer Research Centre are government organizations where cancer patients can access health services. Chulabhorn Hospital has been established under the strong aspirations of Prof. Dr. Her Royal Highness Princess Chulabhorn to relieve the suffering of cancer patients through comprehensive patient-centered services, starting from cancer screening at early stage, cancer prevention and treatment by up to date, and modernized technology along with cancer research for better quality of life and improved survival. As a result, many cases of cancer have been transferred from other hospitals in both Bangkok and provincial areas to receive therapy by the most up to date and modernized "True Beam" accelerator machine at Chulabhorn Hospital (Chulabhorn Hospital, 2012).

III. Nursing system

Nursing in Thailand has an advanced system and nursing profession is an honored career which involves experiences of working with people. The world of the nurse as mentioned by Orem, Taylor, and Renpenning (2001) is manifested to each nurse as a system. It is the world of experiences

with people, of information seeking, of making judgments and decisions, and of acting to achieve foreseen results that fulfill existent or projected requirements of people for nursing.

Caring for cancer patient needs high intention since advances in cancer treatment and changing health care systems have led to shorter hospital stays and sicker people being cared for at home. If the care is appropriate and adequate, cancer patients should be recovered, and they should return back to their usual life as soon as possible. Therefore, the nursing practice, nursing administration, nursing education and nursing research in Thailand will be reviewed and included in this last session as "nursing system" to care for cancer patient.

Nursing practice

Advanced Practice Nurse (APN)is a key health care provider who is responsible for caring of cancer patients. Advanced Practice Nursing represents the future frontierfor nursing practice and professional development. It is a wayof viewing the world that enables questioning of currentpractices, creation of new nursing knowledge, and improveddelivery of nursing and health care services. The APN is a mainspring, to set up a system of care for cancer patients such as: 1) care management program for patients receiving a "one-day chemotherapy", 2) complementary care to relief pain and suffering by using aromatherapy and music therapy, 3) development of nursing innovation, 4) development of referral and continuing care system, and 5) creation of data base of cancer patients.

Not only the APNs who set up a system of care for cancer patients, the clinical nursing practice guideline is also an instrument for the APNs to provide appropriate care based on the evidences such as CNPG to manage mucositis, fatigue, and to prevent phlebitis while receiving chemotherapy. However, the nursing practices will not be absolutely arranged and provided to the patients if there is no adequate facility of nursing administration.

Nursing administration

Nursing administration is one of the key factors contributing to nursing delivery care system. Using appropriate information technology assists time consumption while working in cancer care. Information technology is essential to help create database of cancer patients. In addition, some existing program and resources can be implemented to manage nursing care plans. International Classification for Nursing Practice (ICNP) has been used in the NCI and some university hospitals in order that the nurse can understand nursing phenomena and provide nursing care by unified language. The ICNP is a unified nursing language system. It is a compositional terminology for nursing practice that facilitates the development of and the cross-mapping among local terms and existing terminologies. The three elements of ICNP are nursing phenomena (Nursing diagnosis), nursing actions, and nursing outcomes. Therefore, nurses who work with cancer patients at the NCI can understand patients' problems (or) situations and provide proper care under the ICNP framework.

Having case manager in cancer care also promoteseffective management in cancer nursing with the goal of satisfaction, cost and complication reduction, shorten length of stay (LOS), and lower readmission rate within 28 days. The nurse case manager function includes seeking appropriate solutions for patient's problems, taking an assessment of risk and benefits of each alternative solution, maintaining a balance between budget and goals in the health care system, and collaborating and cooperating with other health care providers. The case example in Bangkok Medical Center (BMC) reveals how case manager acts as a coordinator to strengthen the quality care as well as patients'satisfaction. In addition, the study of outcomes of having case manager to care for breast cancer patients showed reduction of complications, LOS, and readmission (Jansukree, Peungbanharn, and Jiranantipat, 2010).

Nursing education

Thailand's progression in Nursing education is one of indicators in professional development. Caring for cancer patients requiresprofessional care from nurses who earn post-graduate level degree and Master's degree. In Thailand, ashort-course program of training in cancer care is available at NCI, Mahidol University, Chiangmai University, and SrinagarindvirojUniversity. The Master's degree program in Adult Nursing also enables the students to advance their knowledge and base their practice on evidences and appropriate theories to achieve optimal care for cancer patients.

Nursing research

Currently, the number of nursing research studies focusing on cancer nursing has been increasing. Some concepts and theories have been used to explain nursing phenomena in cancer patients such as uncertainty, quality of life, discomfort, symptom experience and symptom management, fatigue and self-care ability. Knowledge about cancer nursing care has been confirmed and employed in the nursing practice. Interestingly, there are a few studies in breast cancer patients which direct appropriate nursing care. Suwisith and Hanucharurnkul (2006) had done an integrative review of breast cancer nursing studies in Thailand. They found that knowledge derived from 31qualitative andquantitative descriptive studies reflected some phenomena ofinterest. Women with breast cancer were reported asdelaying seeking health services. The median timebefore seeking health services was five months andtheir stages of illness were mostly stage II and overwhen diagnosed with breast cancer.Reasons fornot accessing the service for breast cancer detectionwere reported as a lack of knowledge, embarrassment,inconvenience of accessing the service, cost of healthservices and a lack of information about where toreceive the service. The common needs of women diagnosed with breast cancer were information in relation to their stage of illness, prognosis and treatment effects. A woman with breast cancer was normally spiritually supported by her husband. Together they were involved in the process of decision making to the treatment plan.

Among the 24 intervention studies, they were theory-based interventions. Five were guided by two grand nursing theories including Roy's adaptation model and Orem's self care theory. The majority of the studies conducted more than one session of instruction (95.8%). There were fourteen types of intervention program tested in the 24 studies. The interventions could be categorized into four major groups; namely, complementary therapy (37.5%), psycho-support (20.8%), health education (16.6%), and combined strategies (25.0%). The category of complementary therapy consists of muscle relaxation, imagery, reflexology, music therapy and massage. They were utilized tomanage both physical and psychological symptomssuch as pain, anxiety and symptom distress, nausea, retching, and vomiting. Results showed that the effects of complementary therapy for symptom management were inconsistent.

The psycho-support category consists of counseling, promoting perception without awareness (subliminal perception), and metaphors. Counseling was utilized in promoting coping with body image changes in patients receiving mastectomies, reducing anxiety in patients receiving chemotherapy, and promoting self-care in both groups receiving chemotherapy. Counseling was reported as having statistically and significantly affected the outcome measured in all three studies.

The health education category includes activities in relation to patient teaching and skill training. These interventions were utilized to promote adaptation, prevent and reduce physical and psychological problems, and enhance patients' self-care. Teaching was

commonly provided both individually with the use of media and group processes. Results revealed the inconsistent effects of health education on various individual problems.

The category of combined strategies consists of the intervention that uses more than one strategies or the combinations between complementary therapy, psycho-support or health education. They are strategies such as psycho-educative strategies, educative-supportive strategy or education plus nursing care.

In addition, there were two studies using PAR (Participatory Action Research) methodology. In one study, when considering the breast cancer patient receiving chemotherapy, there was a need for information related to their illness, side effects of treatment and costs of treatment. In cases of the women receiving mastectomies, there was a predominant need for psycho-support, preparation for self-care and counseling in relation to their sexualities. Models of care derived from the two studieswere actions taken to promote self-care of the women with breast cancer. The actions consisted of patient participation, counseling, health education, reflections on the problems, reflection on the contribution, psychological support, self-help, facilitation, and caregiver support.

From 2006 up to present, there have been more studies on breast cancer patients. The study of factors predicting fatigue among Thai women with breast cancer was conducted by nursing instructors in Chiangmai University (Hanprasitkam, Wonghongkul, Sucamvang, and Panya, 2007). Results revealed that Thai women with breast cancer experienced a low level of fatigue. Eighty-one percent of the variance in fatigue was predicted by anxiety, depression, Buddhist practice, sleep disturbance, and chemotherapy protocol with doxorubicin. Anxiety was the most important predictor, followed by depression, Buddhist practices, and sleep disturbance, while chemotherapy protocol with doxorubicin was the least significant predictor.

The study of symptom clusters and functional status of women with breast cancer was reported in 2008 (Suwisith, Hanucharurnkul, Dodd, Vorapongsathorn, Pongthavorakamol, and Asavametha, 2008). The study revealed that among 320 Thai women diagnosed with breast cancer undergoing chemotherapy experienced clusters of symptom which included emotional related symptoms, GI and fatigue related symptoms, image related cutaneous symptoms, and pain related discomfort symptoms. GI and fatigue related symptom cluster was the strongest predictor symptom affecting the functional status.Later there was a report of a study of factors predicting quality of life for breast cancer survivors at one year post-treatment, and thereafter (Sivarux, Pongthavornkamol, Wattanakitkrileart, and Tanticharoensin, 2012). This study showed that symptom distress, social support, and uncertainty put together may cause 46.7% of the variance in QOL among breast cancer survivors. Suggestions from researcher team focused on awareness of nurse on residual symptom distress, symptom management, reducing uncertainty, and promoting social support, in order to improve QOL of breast-cancer survivors.

The above review of nursing research on cancer reveals that cancer nursing research in Thailand is still ongoing and expanding to the other group of cancer such as, the study of factors influencing role adaptation of patients with cervical cancer receiving radiation therapy (Sirapo-ngam, Putwatana, Kitrungroj, andPiratchavet, 2002), the testing of uncertainty in illness theory to predict quality of life among Thais with head and neck cancer (Detprapon, Sirapo-ngam, Mishel, Sitthimongkol, Vorapongsathorn, 2009), the study of nursing intervention to reduce anxiety and improve the adaptive capabilities among caregivers of terminal liver-cancer patients (Sararat, Popoing, Sangraogek, and Sukonthawat, 2011), and the study of effect of a planned teaching program on knowledge and self-care behaviors among

lung-cancer patients undergoing chemotherapy at Songklanagarind Hospital (Weerakul and Hubjaroen, 2011). All these studies confirm how nurses are concernedabout caring for cancer patients.

Summary

The care for Thai people living with cancer is reviewed with the introduction of the situation of cancer in Thailand and the Thai people perspectives toward cancer. It is important for nursing profession that nurses learn how cancer care in the country has become advanced and modernized in order that they can set up the optimal nursing care paralleled to those cares. This paper simply illustrates a little part of the big picture of cancer nursing in Thailand. There is still a strong demand of nursing care to help improve the quality of life of patients affected by cancer. In this regard, further study should be focused on how family as a whole, lives and handles with every stage of the illness of their loved ones who have cancer in qualitative research design. Expected knowledge gain from the further study will lead to quality improvement of nursing care for people living with cancer.

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Translation of Research into Practice Focusing on Health Promotion for Children and Adolescents

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Abstract

Everyone wants to be healthy. As the primary public health authority in Thailand, the Thai Ministry of Public Health (MOPH) is responsible for the health of the Thai population. Such as, the MOPH has exerted great effort in trying to come up with a variety of strategies-for the good health of everyone. Research on promoting good health is considered one of those strategies the state sector has supported through research funding. As a result, new pools of knowledge have been discovered in management facilitating public health promotion at of everyparticipation, i.e. the state, private and public sectors. These new pools of knowledge revealed by researchrequire systematic processes for management, dissemination and transfer to the public through the work of health care personnels, including community nurses, in various models.

The creative of health promotion in children and adolescents need to begin with parents, caregivers and preschool teachers who work together in promoting health for young children by fostering health behavior through setting good examples. When children grow up, the creation of good health behavior becomes the responsibility of the children themselves, parents in the house, teachers at school, community leaders in the community and professors in vocational and higher educational institutions by coordinating with community nurses who play a key role in working together to build good health for children and adolescents.

Keywords: Translation of Research into Practice, Health Promotion, Children and Adolescents, Community Nurses, Role

Research is the core of the state sector's drive for health promotion

Health promotion trends are challenging for every region of the world and play a key role in building a healthy global community. Consequently, every country in the world joined together in setting health promotion strategies under the concept of building healthy public policyby drafting the Ottawa Charter (Ottawa Charter, 1985) based on the principles of creating public policies supporting health and creating environments supporting health promotion, generating good community health, developing personal skills necessary for good health and modifying health service systems where communities think and work together. Later on in 2005, a global health promotion conference was held in Thailand and the Bangkok Charter was drafted with the proposal of guidelines leading to good health. One of the strategies is created an ongoing and sustainable social trend through research aimed at health promotion.

Thailand has participated in performing in line with the aforementioned strategy. Further more, the MOPH has come up with

strategy for allocating budgets to support research aimed at finding new knowledge for the good health of the general public by establishing the Thai Health Promotion Foundation in 2001 with a firm commitment to seeking the good health of Thai people, good health behavior and environments conducive to good quality of life. Most of these funds come from taxes collected by the state from manufacturers and importers of liquor and tobacco at a rate of two percent of the taxes paid. Some people call this tax the "sin tax" collected from "demerit goods" such as liquor and tobacco. This huge fund amounts to several many Million baht per year.

The money from this fund enables research for health promotion in every region of the country in state, private and public sectors. The research findings supported by this funding are disseminated at the National Health Expo every year. As a result, the research findings on health promotion are presented and announced for society. Furthermore, every region recognizes the effectiveness of various types of health promotion work. Every year, the National Health Expo is attended by a hundred thousand people and up, which allows the knowledge appearing at the National Health Expo to be applied in practice on a greater scale. Apart from the presentations at the National Health Expo, cooperation is also received from a variety of public relations media such as radio, television, printed matter and electronic communications, etc. As a result, the public has widespread access to information on research findings at events like "Thailand Health and Wellness 2009: New Dimensions in Thai Health" which was held at the Bangkok's major exhibition center at Impact Arena in Muang Thong Thani in June 2009 over a three-day period. This event enjoyed the cooperation of large public relations companies at the time with more than two hundred thousand people attending the event.

Although health promotion expos have only been organized domestically, such events have been held at the MOPH health service regional and district levels within a network of 6-8 provinces per district. The events have also been held at the provincial, district, sub-district, university and hospital levels, including tertiary, secondary and primary hospitals at the community, sub-district and village levels. Health promotion expos always involve the dissemination of research findings. Even when research is conducted independently, the findings are presented collectively in order to find guidelines for application that is compatible with the context of each region. These activities are widely organized to campaign for health promotion because the activities meet the criteria for mandatory government policy. As a result, every region produces research findings with dissemination of new body of knowledge for communities in line with the indicators set forth by the state sector.

Roles of Professional Nurses in Using Research to Push for Health Promotion Strategies

Thailand currently has over 170,000 professional nurses performing the duty of providing health services to the public nationwide at public and private agencies. There are also approximately 80 organizations offering professional nursing associations and clubs with 82 educational institutions producing professional nurses. Education is arranged from the bachelor's degree level to the doctoral level. Moreover, Thailand is able to produce approximately 8,000 nurses with bachelor's degrees, 600 nurses with master's degrees and approximately 30 nurses with doctoral degrees. In addition, approximately forty 4-month training courses are offered in fields of specialty for approximately 36,000. Evidently, therefore, Thailand has a large amount of health and social capital for health promotion. The using of professional nursing resources for maximum benefit with participation

and health promotion policy support generally sets the path to tangibly successful achievement of health promotion goals.

Health promotion is a professional nursing role. Pursuant to Article 4 of the Nursingand Midwifery Act of 1985, the greater part of the professional nursing obligation emphasizes care and treatment for patients and is deficient in the area of integrating health promotion at each level of service provision. Therefore, the Thai Nursing Council has joined forces with professional nursing networks nationwide such as nursing education networks, nursing departments, provincial nursing council representatives, the Nurses Association of Thailand under the Royal Patronage and five regional networks with societies of specialized nursing in the northern, northeastern, central, eastern and southern regions of Thailand. Therefore, programs have been organized to push for professional nursing aimed at health promotion with the following objectives: 1) to develop professional nursing competence in health promotion; and 2) to develop nursing students and professional nurses into professional health promoters; and 3) to push for professional nursing organizations networks to play a prominent role in health promotion, working to meet these stated objectives by using the process of conducting research funded by the Thai Health Promotion Foundation which has resulted innumerous good examples that can be used or developed into best practice guidelines at eachlevel with implementation for maximum benefit in learning and development of professional nursing capacity for health promotion competence in each group and each level of health care as stipulated.

Research Findings on Health Promotion Lead to Social Behavior Changes

Research findings yielding numerous new body of knowledge include descriptive research where understanding of the issue is gained, explanatory research where related Factors are described, predictive research where influential factors are studied, experimentalresearch where tests are conducted good models or products are discovered and prescriptive research where situations or conditions are controlled. In the early stages of research funded by the Thai Health Promotion Foundation, most studies involve Routine to Research (R2R) development boosting the efficiency and effectiveness of routine tasks. Recently, more health promotion studies have been conducted covering every aspect of the research findings and every part of health promotion at the state, private and public sectors.At this stage, the studies conducted have focused on solutions for public health issues with research findings that can be used as guideline for considering the decisions of public health administrators. Furthermore, some of these findings have been included in the setting of public health policy for thecountry in order to push for health promotion work at the national level. This stage marks a turnabout in the application of research findings into research to practice guidelines.

The research findings occurring every year represent work resulting in social changes in various models such as various community health promotion models with innovative health promotion products, the development of equipment to encourage exercise, food and beverage products, health promoting herbs, health products for people of all ages and the establishment of cosmetic institutions based on Thai wisdom, etc. As a result of these findings, health promotion guidelines have been discovered in various forms such as the need for everyone to participate in pushing for good health among Thai people of all ages from young children to school-aged children, adolescents, people of working age and the elderly. Furthermore, practice guidelines have been discovered for the Thai population to engage in behavior modification for good health with changes in lifestyle aimed at health promotion. Therefore, because health is personal, everyone has new ideas for promoting health

under the healthy family concept. Moreover, concepts have been created in public health care at the community level with models for creating networks where people can chat, consult one another or join together as communities to schedule health markets in order to disseminate knowledge about health promotion by using the knowledge management process.

Some samples of research findings that help raise social awareness of the importanceof health promotion at the personal, social and environmental levelsare as follows : joining together to establish a road safety center, wearing motorcycle helmets when traveling by motorcycle, campaigns for children to wear motorcycle helmets, drives for the prohibition of alcoholic beverage commercials after 10:00 pm on both radio and television, prohibitions regarding the posting of advertisements for alcoholic beverages near schools, notifications prohibiting the addition of sugar to milk for infants and young children, prohibition of the distribution of infant formula samples for newborns at hospitals nationwide, declarations of carbonated beverage-free schools and many other programs.

Research on Health Promotion for Children and Adolescents

Today's presentation is focusing on health promotion for children and adolescents. By emphasizing health promotion for children and adolescents, the global community can enjoy a healthy future. In order to show you a tangible example, I would like to present the following research findings in the aforementioned area.

According to a systemic review of documented studies on 23 topics, which is a socio-ecological approach to physical activity intervention in childcare of children aged 2-6 years,children were found to have less than 180 minutes of daily physical activity, which is a low level that fails to meet the recommended criteria. This finding indicates a necessity to find strategies for use in increasing the physical activity of children with better effectiveness than in the past. Furthermore, according to this systematic review, no conclusions can be drawn for best practice. However, the review has yielded some recommendations for the next step in research with training to enable teachers to organize more physical activity for children with a variety of fun activities and motivate children to practice the activities until physical activity becomes a habit for the children in the future (Mehtala, 2014).

Health promotion for children and adolescents with sports play and exercise has been found to be scarce in Thailand. There are problems and barriers whereby adolescent leaders in communities remain disinterested in this aspect of activity. Furthermore, sports fields and exercise facilities are sub-standard, while sports equipment is broken down and scarce. Moreover, the attitudes of children and adolescents toward playing sports and exercising remain negative. For example, children and adolescents are afraid of getting hurt from playing sports or exercising, are disinterred and have no time. Promoting sports and exercise continues to rely on awards as the motivator rather than occurring as a result of inner conscience (Attipong Naklang, 2010).

Health promotion for school-aged children or children aged from 0-6 years is largely under the care of the children's care givers and nannies in nurseries. Preschools, on the other hand, are under the care of teachers. Issues where activities have to be organized for these preschool children are growth and development monitoring by age, health examinations performed by professional doctors or nurses every three months, dental exams for the children every six months and vaccinations to prevent age-related diseases. Furthermore, children need activities that promote development with play activities, stories, rhythmic activities using children songs, exercise, sufficient rest, healthy and hygienic foods that

complete the five food groups. Preschool environments should be made safe because this mischievous age group is highly susceptible to accidents. There should also be activities neat habits (Umaporn Chatwirot, 2008). Health promoting food consumption behaviors should be instilled with cooperation from both preschools and homes as good models. Healthy diets have less salt, less sugar, less fat and more dietary fiber. This should be the model that stays with the children as they grow into adults (Pacharachit Sukanapan, Patreeya Malathong, Kulada Premchit and Somsiri Rodpipat, 2006).

Health promotion research is most frequently conducted in preschool children with studies related to content for health promotion in preschool children and studies on the health promotion capacity of caregivers of children in nurseries. According to research findings, child caregivers have very good childcare knowledge (Churairat Wacharaat, Pacharapa Kanchanaudom and Suppakorn Wankrathok, 2009). However, recommendations have been made for training child caregivers aimed at constant review of their knowledge. Research has also been conducted on finding guidelines for managing nurseries for small children in line with strategic plans to standardize the work of nurseries for small children (Ratree Thanoosilpa, 2006) with focus on participation from the parents, guardians and communities in health promotion for children (Sansanee Niyomtham, 2011).

State public health agencies are handed down policies to produce health promotion and disease prevention strategic plans. Plans/projects/activities and support for resources and development plans for school children and adolescents have been qualitatively created. Databases have been created to link public health service agencies from the lower level up to the national and international levels. New indicators were made such as those for children with good height and well-proportioned figures. Health promotion strategies are used in school-aged children through the "health promotion school" strategy. Over 90 percent of schools in different provinces have joined the health promotion school process. Results are constantly evaluated into the diamond, gold, silver and bronze levels (Executive Summary, Examination Results and Ministry Level Work Supervision, Ministry of Public Health, for Fiscal Year 2013, Second Cycle). The following five health promotion services in are offered for school-aged children: development evaluation, dental health, development and learning readiness, vaccination and eye/hearing exams and emphasis on managing child obesity in students.

Plans to qualitatively improve adolescent health have been linked with provincial strategic, operational, developmental plans such as the plan to prevent and resolve drug addition "To Be Number One" AIDS sexually transmitted diseases and reproductive health/unintended pregnancies in adolescents, etc. These plans, projects and activities are integrated and implemented in cooperation with educational facilities with health promoting universities working together to establish community networks, local administrative organizations and civil social networks with prepared sex education for schools at the secondary education level. The potential of human resources on the public, private and community levels has also been improved by bringing the aforementioned together to campaign for good adolescent health (Executive Summary, examination results and ministry level work supervision, Ministry of Public Health, for Fiscal Year 2013, Second Cycle). Health promoting services in adolescents will reach adolescents with risk behaviors and improve their life skills on sex, narcotics, smoking, alcohol, game addiction, gambling addiction and violence.

Indicative Research on the Health Policies of the Country's Public Health

According to budgetary allocations promoting research on health promotion, numerous

research findings are available as empirical evidence for the development of health promotion guidelines for people at every operational level from personal, community, community organizations, provincial organizations and up to the national level. The national level is composed of research capable of providing data to accompany decisions and set MOPH public health policies. Examples of research playing roles in policy making include the Health Status and Health Risk Assessment of School-Age Children for Public Health Policy by Community Institutes and Stakeholders Participation, Eastern Region of Suwanna Chanprasert, Nisakorn Krungkraipetch, Pacharin Poolathawee and Wandee Thoraksa (2008). The findings of the aforementioned research provide accurate information on the health status of school-aged children in terms of the following: 1) physical aspects, e.g., very severe diseases such as dengue fever, and diseases frequently encountered in school-aged children such as nutritional disorders, dental caries and flu; 2) behavioral aspects such as unwanted pregnancies, narcotic use and violence; 3) emotional and mental aspects such as aggression, isolation, poor diet, premature sexual debut and depression; 4) environmental aspects, such as air pollution, and 5) social aspects such as being part of an urban community and labor migrations. Since this research was qualitative, accompanying data are available to show the causal issues of the problem and give policy makers the opportunities to direct policies.

According to previous health promotion research in 2014, the Ministry of Public Health set health promotion and disease prevention strategic plans as five flagship projects based on the following age group: women and infants, children, youths and adolescents, worker-age group and elderly/disabled. The projects split integration strategies into three levels: regional (12 regions), provincial (77 provinces) and district (878 districts), with the strategic plans driven by five program managers at every level. The aforementioned coordinate work, offer support, monitor and direct the implementation of the health promotion and disease prevention plans based on age group. They also explain and disseminate knowledge, experience and supervision as a center for data collection, analysis, examination and plan progress reports, performance monitoring and recommendations as guidelines for overcoming obstacles (Ministry of Public Health, 2014).

Nurses' role to translation of research into practice focusing on health promotion for children and adolescents

Nurses act as data managers. The majority of research conducted is composed of surveys and compilation of important databases for use in improving health services in order to promote health such as data on the target population group, which is children and adolescents, data on health problems and care needs for each age group, environmental data, and data on community strength and potential. The aforementioned are aimed at providing databases for improving health promotion services (Kanitta Nanthabut et al., 2014).

Professional nurses are the leaders or program managers of health promotion teams. This line of work requires work leaders with research used as empirical evidence in the searchfor best practice guidelines and the formation of rules, regulations and agreements resulting from the cooperation of every sector, whether state, private or public, in order to generate acceptance, dissemination and application of the findings of the aforementioned research in extensive health promotion nationwide.

Professional nurses are coordinators because health promotion requires the cooperation of every sector in multidisciplinary teams, coordination with people at the community, media and public relations levels. Research conducted by multidisciplinary teams responds to working together, and work is, therefore, made successful according to objectives

and indicators under the health strategic plans of the Ministry of Public Health.

Professional nurses are key members on health service teams because they are the most available human resource of health service teams in the country. Studies focused on knowledge used in the work of children and adolescents apply research as the driving force to achieve effective and efficient work. Research is also used in solving problems and overcoming barriers that occur, while knowledge obtained through research is used in operations and environmental management facilitating health promotion and health servicesfor children.

Professional nurses produce health promoting personnel with the ability to form public health promotion policies and health-friendly environments as well as being able to strengthen communities. Professional nurses are charged with the task of preparing lessons/courses or establishing centers/agencies for personal skill development to facilitate systematic and continuous work as well as work with people from every sector equipped with the primary work knowledge and ability to reach the people and proactively promote health. Such training courses require research involvement in order to develop effective and efficient courses.

Conclusion and Recommendation

Community hospitals play an essential role in the participation for successfully promoting health in children and adolescents, while studies provide empirical data used to accompany practice for children and adolescents with health problems and high-risk behaviors for health conditions.Providingchildren and youths good health will certainly lead to a healthy future society. Campaigns for health promotion behaviors continue to require the cooperation of every sector, whether state, private or public. This cooperation on health promotion goals originating from the smallest part,such as individuals,and leads upward to the national and international levels will make a “healthy world” accessible.

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Authors Submission Guideline
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Example of Research Article

Roles of Travel Incentives on Employee Motivation and Performance

Dr. Nucharee Supatn[1]

[1] Assistant Professor of Department of Management, Martin de Tours School of Management and Economics, Assumption University

Abstract

Travel incentive is a type of the organizational reward that includes individual business meeting, group travel to offsite business meetings, as well as the travel and tours to any places outside the office. The influences of three factors related to travel incentives i.e. destination image, need for travel, and self-congruity on employees' perceived value on the travel incentives, their work motivation, as well as their job performance were tested in this research. Questionnaire survey was conducted. The 418 sets of data were collected from the employees of the firms located in central business districts. The structural equation modeling was performed to determine the relationships among major constructs. The results indicated that destination image influenced perceived value and job performance. Need for travel influenced both work motivation and performance of the employees. Self-congruity influenced perceived value and work motivation. Perceived value could influence work motivation. Finally, work motivation was found to influence job performance of the employees.

Keyword: Perceived Value, Destination Image, Need for Travel, Work Motivation, Job Performance

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Example of Academic Article

An Integrative Literature Review of Global Nursing Ethics

Yoshimi Suzuki[1], Rie Sayama[1]

[1] Faculty of Nursing, Toho University

Abstract

Objectives : The purpose of the integrative literature review is to investigate the literature concerning GNE from the viewpoint of the kind of literature, the countries where the primary authors live, and the major topics related to ethics. We then will generalize on the present condition of GNE. **Method :** Our review was based on the methodology of Cooper's integrative review. We searched the literature of the last ten years using the Pubmed database, CHINAL, and Japana Centra Revuo Medicina. 86 literatures that met our criteria were analyzed. **Findings :** (1) 53 out of the 86 literatures contained "Information". (2) Regarding where the primary authors live, 42 live in the United States, 11 in the United Kingdom, and seven in Canada. (3) The numbers of major topics reviewed were : 1) Nursing ethics between each country, (a) 21 ethical issues related to immigration of nurses, (b) ten related to global nursing cooperation, (c) seven regarding comparison of nursing ethics between countries; 2) nursing ethics on a global scale, (a) 12 related to interpretation and use of global code of ethics for nurses, (b) 11 related to ethical consideration in global nursing research. **Implication :** (1) This research indicates that the knowledge of GNE has been spreading. Although the importance of GNE has been recognized, future research may be required. (2) The top three authors are from English speaking countries indicating that geographical bias exists in the countries that deal with GNE. (3) GNE depends on the context, so, it is necessary to pay attention to where and how they are used.

Keywords : Global, International, Nursing, Ethics, Literature Review

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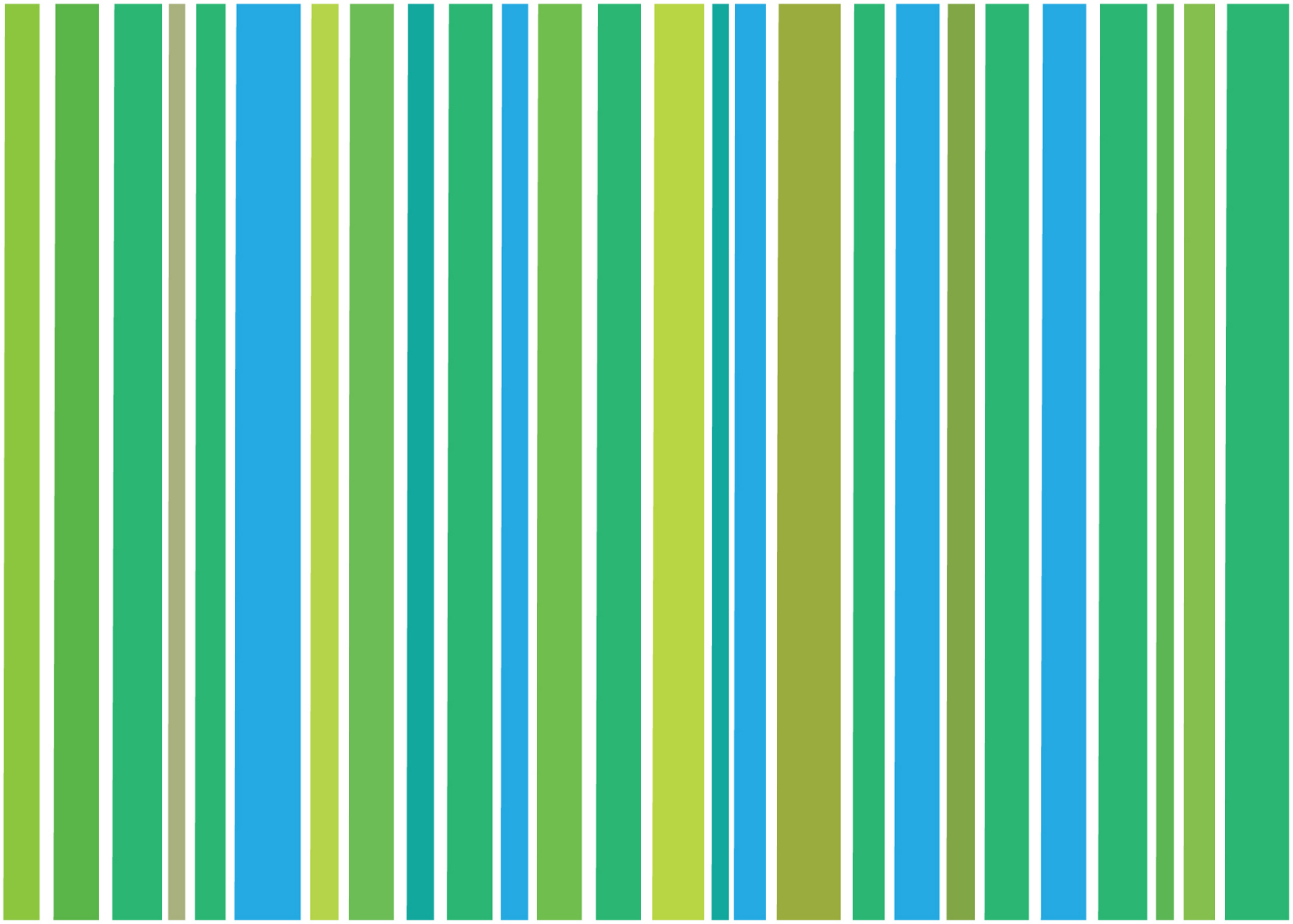

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