

# MODEL-BASED SYSTEMS ENGINEERING OF PHOSPHATE BENEFICIATION PROCESSES

## Mariem Ait Bakader

Applied Organic Chemistry Laboratory, Faculty of Sciences and Technics,  
Sidi Mohamed Ben Abdellah University, FES  
FES, MOROCCO

Complex Systems Engineering Laboratory  
Mohammed VI Polytechnic University, BENGUERIR  
BENGUERIR, MOROCCO  
[mariem.aitbakader@um6p.ma](mailto:mariem.aitbakader@um6p.ma)

## Laurent Deshayes

Complex Systems Engineering, Mohammed VI Polytechnic University, BENGUERIR  
BENGUERIR, MOROCCO Email: [Laurent.DESHAYES@um6p.ma](mailto:Laurent.DESHAYES@um6p.ma)

## Mohammed El Asri

Applied Organic Chemistry Laboratory, Faculty of Sciences and Technics,  
Sidi Mohamed Ben Abdellah University, FES, MOROCCO  
FES, MOROCCO Email : [mohammedelasri@yahoo.fr](mailto:mohammedelasri@yahoo.fr)

### ABSTRACT

The fourth industrial revolution is being fostered in many countries to make more efficient and flexible plants. Industry 4.0 target is to get a more competitive industry. Under this framework, improvement of mineral processing requires knowledge of previous methods and current technology in order to develop new techniques and approaches. As phosphate deposition decreases, the need for new recovery methods keeps growing. From this perspective, the need for control and optimization of existing processes becomes a necessity. It also includes the development of equipment with more advanced digitized components. In this paper, we adopted a system engineering-based approach, which consists on modeling and formalizing knowledge collected in the field. A well understanding of phosphate value chain allows both driving and optimizing current processes. In addition, we used this approach to model information flows in which we integrated a specific equipment in the overall process. A specific type of mining processes were studied with aim of giving feedback on the implementation of system modeling for mineral processing.

**Keywords:** Phosphate Beneficiation, Mineral Processing, Complex System Engineering, Control, Optimization.

### INTRODUCTION

Why focusing on Phosphate ore Beneficiation?

Phosphate ore is a nonrenewable resource but it is essential for agriculture, as a raw material for fertilizers. Phosphates cannot be really substituted and recycled. Feeding the ever-growing world's population is becoming a challenge and phosphate needs are always bigger (Sis and Chander, 2003).

According to United Nations Food and Agriculture Organization (FAO), the mineral composition of Phosphate ore is depending mainly on its origin. Here are the four main classes of Phosphates:

Fluoroapatite:	$\text{Ca}_{10}(\text{PO}_4)_6\text{F}_2$	Igneous or metamorphic origin
Hydroxyapatite:	$\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2$	Igneous, metamorphic or biogenic origin
Carbonated hydroxyapatite:	$\text{Ca}_{10}(\text{PO}_4, \text{CO}_3)_6(\text{OH})_2$	Biogenic origin
Francolite:	$\text{Ca}_{10-x-y}\text{N}_x\text{M}_y\text{g}_y(\text{PO}_4)_6-z(\text{CO}_3)_z\text{F}_{2+z}$	Marine or erosion origin

Depending on several geological and physical conditions, properties of apatites found in different deposits may be different. As Francolite is metastable, it can be affected by leaching, metamorphism or with time. It has indeed been found that the carbonation rate of francolite decreases with time. (Birken et al. 2016)

Phosphate rock is an important mineral commodity used in the production of phosphoric acid. The majority of phosphoric acid is produced by the “wet process,” in which phosphate rock is reacted with sulfuric acid to produce phosphoric acid and gypsum (calcium sulfate dihydrate). The wet process demands a phosphate rock feed that meets certain specifications in order to produce phosphoric acid efficiently and economically (Kawatra and Carlson, 2014).

As in any mining industry, the easiest phosphate deposits to extract and purify have been exploited first. Estimated phosphate resources are directly dependent on the ability to take advantage of less pure geological veins, so there is a continuing interest in improving the enrichment of phosphate ores. This optimization of such processes requires mastering existing processes and control through the integration of intelligent sensors.

The remainder of this paper is organized as follows: Section 2 highlights phosphate beneficiation activity. Section 3 presents system engineering approach and SysML language. Throughout the paper, the example diagrams will be based on the Systems Engineering of a mineral activity production line introduced in Section 4. The conclusion and ideas for future work are presented in Section 5.

## PHOSPHATE BENEFICIATION ACTIVITY

Phosphate rock is the primary source of phosphorus. The phosphate ores are extensively used in the fertilizer industry. The grade of rock phosphate consumed varies from 27 to 35% in fertilizer industry and from 30 to 35% in the chemical industry. (Sis and Chander, 2003).

Siliceous phosphate ores are generally beneficiated by a two-stage flotation technique using amine and fatty acids for silica based gangue and phosphates respectively. The beneficiation of phosphate ores containing carbonaceous gangue is complicated because of the similarities in the chemical behavior of the minerals present (Somasundaran 1975)

### Flotation feed preparation—washing, sizing, and desliming

Preparation of phosphate starts with the activity of mining, usually by using draglines, the ore is then made into a slurry, and transported to wash plant by pipelines. There are different equipment for washing; trommels, log washers, and sandwich screens (Lawver et al. 1978)

After mining, screens are used to separate the +16-mesh pebble fraction, which has traditionally been high enough quality to be considered phosphate concentrate. Log washers use a countercurrent wash-water flow to remove clay slimes from ores. (Kawatra and Carlson, 2014).

In phosphate processing, hydrocyclones used are operating at high capacities and they give a specified cut size. The basic diagram of a hydrocyclone is shown in Figure.1.

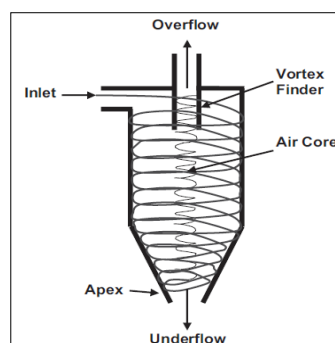


Figure 1. Hydrocyclone

According to (Lawver et al.1978), the hydrocyclone consists mainly of a cylindrical section and a conical one. The feed slurry enters tangentially through the inlet, generating a swirling “cyclone” action. This flow imparts centrifugal forces on the slurry, which moves coarser, denser particles to the outside wall of the cyclone and eventually out the underflow. The finer particles stay in the liquid and are carried away with a large portion of the fluid through the vortex finder into the overflow. Hydrocyclone efficiency for a specific application depends largely on the design parameters of the cyclone itself (cyclone diameter, angle of conical section, diameter of the inlet etc.), operating parameters (feed flow rate, % solids in slurry, etc.), and feed ore characteristics (particle size distribution, particle density, particle shape, etc.). Hydrocyclones used for phosphate ore desliming are typically 24–30 inches (61–76.2 cm) in size.

## COMPLEX SYSTEMS ENGINEERING

### 3.1. System Engineering (SE) & Model-Based Systems Engineering (MBSE)

(Roques, 2013) presented the System engineering (SE) as a general methodological approach that encompasses all the appropriate activities to design, develop and verify a system that provides a cost-effective and efficient solution to a customer's needs, while satisfying all stakeholders.

The transformation of an emerging need into the definition of a solution-based system implements multiple intellectual activities gradually moving from abstract concepts to the rigorous definition of products. It is necessary to rely on representations of both the problem and possible solutions at different levels of abstraction, to apprehend, conceptualize, design, estimate, simulate, validate, justify choices, and communicate. This is the role of modeling.

Works implemented in SE have always used models from representations more concrete such as reduced plans or models, to more abstract, such as systems of equations. Graphics tools are the most used by engineers because they can easily represent complex systems. Here are some of these tools presented below.

According to the International Council on System Engineering (INCOSE), “Systems Engineering is an interdisciplinary approach and means to enable the realization of successful systems. It focuses on defining customer needs and required functionality early in the development cycle, documenting requirements, then proceeding with design synthesis and system validation while considering the complete problem”. MBSE is an extension of the systems engineering approach that focusses on capturing product properties and engineering information consequently within models instead of predominantly using documents. The various representations from the MBSE are Requirements, Function, Logic, Behavior, and Structure. The resulting analysis provides traceability from requirement to component and vice versa.

For MBSE the most common model language to use is SysML. While SysML is a highly capable language, it is also fairly complex. SysML is derived from the UML language and most of its features are directly reused from the UML.

The section below provides an overview of the core parts of SysML that highlights most of its benefits for systems engineers. It presents the basic SysML diagrams—Package, Requirements, Block Definition, Internal Block, Activity, State, Sequence, Use Case and Parametric.

### 3.2. SysML Overview

According to (Friedenthal et al.2009) a clear definition of SysML is provided, stating, “SysML is a general-purpose graphical modeling language that supports the analysis, specification, design, verification, and validation for complex systems. SysML attempts to satisfy each of these stated goals through a formal definition of various diagrams, specifically a requirement diagram, an activity diagram, a sequence diagram, a state machine diagram, a use case diagram, a block definition diagram, an internal block diagram, a parametric diagram, and a package diagram. Figure.2 is a taxonomy diagram that more clearly establishes the intended linkage between these diagrams.

SysML is organized around nine types of diagrams, which the Object Management Group (OMG) has divided into three main groups (a case study showing the use of some of these diagrams is carried out in the following section):

- The first group includes four behavioral diagrams:
  1. Activity diagram (is used to model behavior in terms of the flow of inputs, outputs, and control) (Friedenthal et al.2009);
  2. State diagram (shows the different states and possible transitions of the dynamic blocks);

3. Use Case diagram (describes the behavior of a system, specifically the relationship between a system and actors that impact the operation of that system);
  4. Sequence diagram (is particularly useful for defining sequences of message exchanges or trigger actions between blocks).
- The second group contains a single cross-sectional diagram: the requirements diagram (shows the external requirements of the system and their relationships).
  - The third group includes four structural diagrams:
    1. Block definition diagram (shows the basic static building blocks: blocks, compositions, associations, values, operations, generalizations ...);
    2. Internal block diagram (defines the internal structure of a block, typically a physical element with a focus on the connections between parts of a block);
    3. Parametric diagram (represents the constraints of the system, the governing equations);
    4. Package diagram (shows the logical organization of the model and the relationships between packages).

### CONTRIBUTIONS

For a long time, system engineers have been using modeling techniques. Among the best known are Structured Analysis and Design Technique (SADT) and SA / RT, dating from the 1980s, as well as many approaches based on Petri nets or state machines. (Roques, 2018)

SADT uses a graphical sequence of elementary boxes refined downwardly in other SADT models (boxes + streams). The models used can be actigrams (the boxes are the functions and the flows are the data) or datagrams (the boxes are the data and the flows are the transformations).

An example of SADT adapted to Hydrocyclone is presented in Figure.3; non-classified phosphate particles enter the hydrocyclone, parameter required are Energy, Specified number of cyclone, physical parameters such as flow control and pression , and we obtain classified particles of phosphate (Overflow and Underflow). This presentation with SADT, allows a well understanding of the equipment, in our case Hydrocyclone, we can adapt the same modeling for all equipment of mineral processing.

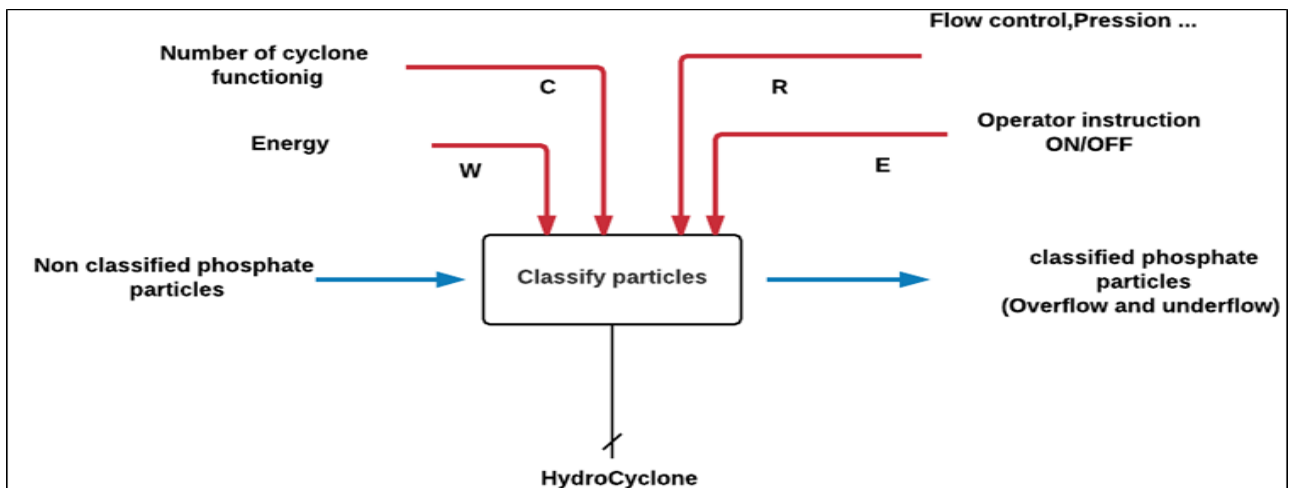


Figure 2. Actigram SADT example of the hydrocyclone

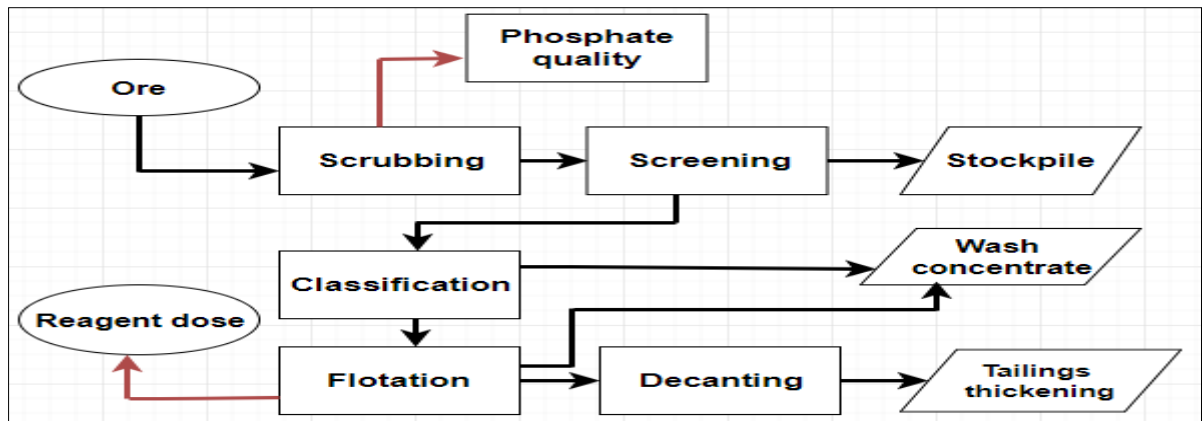


Figure 3. Data Flow Diagram, example of Phosphate washing

To manage data, the data flow diagram shown in Figure.4 for beneficiation activity, we choose the example of phosphate washing. The process consists on five processes: scrubbing, screening, classification, flotation and decanting. Data required depends on quality of phosphate that enter the scrubbing operation. For flotation, reagent dosing represent a critical parameter for good mastering of flotation. The source of phosphate is mine exploration (ore), and after several processes, we have three different destinations: stockpile, wash concentrate and tailings thickening.

In this section, we discuss the system implementation. We adopt a decomposition approach of the system into subsystems to model its configuration. In this decomposition, we must begin by defining the system on which we will work; in our case, it is mineral activity. Then we have to go into the granularity of the process.

To develop the static model, we can identify different classes and objects, allowing to describe the system. Those classes are the physical and conceptual entities of the system. In our case, the block definition diagram of Mineral activity consists of three main blocks: Mine, Beneficiation and Chemical treatment. (Figure.5)

In this work, we focus on Beneficiation activity, for which its block diagram contains the following blocks: Wash plant, Stockpile and flotation.

The wash plant itself, consists of several processes using different equipment: Scrubber-Screen-Hydrocyclone-Hydrosizer-Decanter and Crusher.

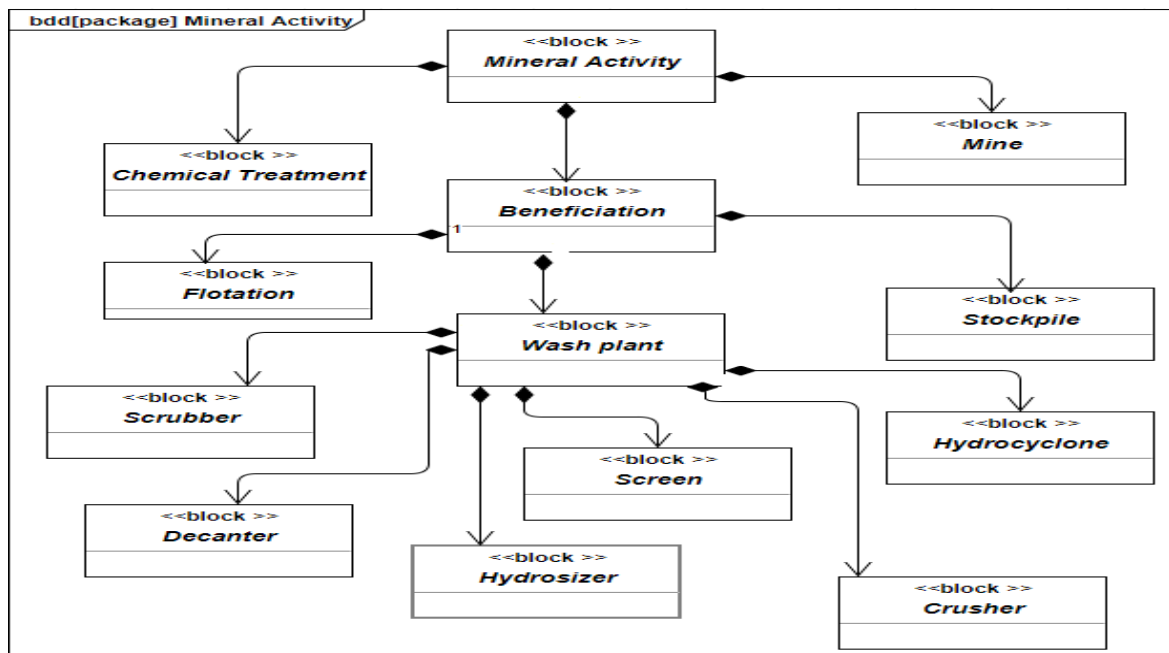


Figure 4. Mineral Activity block definition diagram (bdd)

This approach establishes a linkage between the system architecture and system analysis domains, based on SysML architecture. This first physical architecture allows developing more complete system requirements.

After having identified all the blocks to represent the system, the next step is to define the requirements of the equipment seemed critical in the beneficiation activity. Since physical classification operation is a critical one in Beneficiation, we propose a requirement definition diagram for the hydrocyclone in (Figure.6)

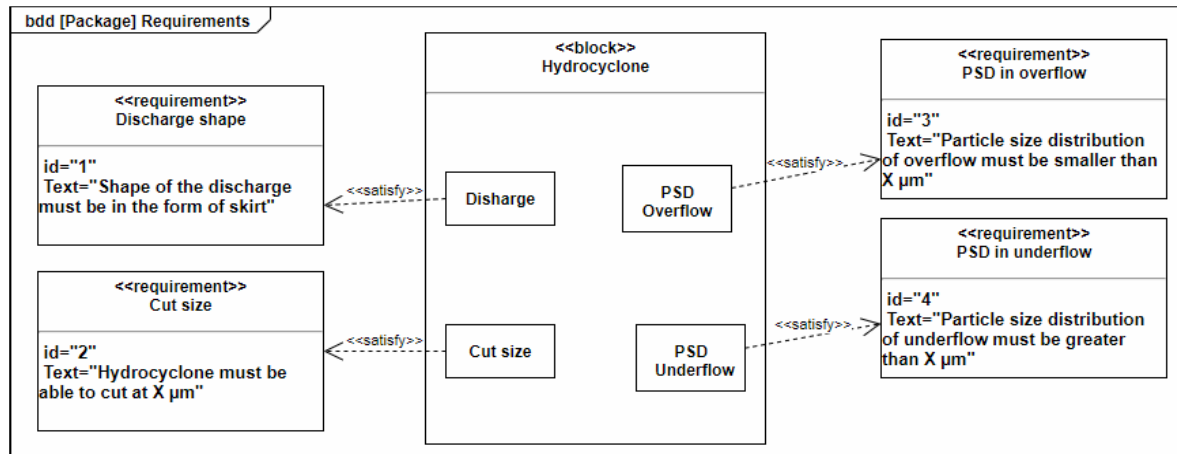


Figure 5. Example of requirement diagram: hydrocyclone requirement

As a critical equipment in mineral processing, hydrocyclone must be performant, in order to master well what comes after classification. The shape of discharge must be in form of skirt to prevent the problem of roping, size of particles in the underflow must be greater than the cut size, as well as the size of overflow, which must be smaller than the cut size. Other requirement is to ensure an accurate cut size. In mineral activity, in most cases, a cluster of hydrocyclone is installed in parallel; for each cyclone requirements are the same, just for the cluster of cyclones, we specified number of cyclone in work and in standby.

The definition of requirements is a main phase to master well the design of new equipment adding the digitized components, which increases the system complexity. In other words, requirements will be used to define sensors to implement, operating parameters to respect, and design parameters to use for a well control of the process during its life cycle.

## CONCLUSION AND PERSPECTIVES

In this work, we studied the phosphate beneficiation activity from a complex systems engineering approach perspective. First, we presented a conceptual model for Phosphate recovery process for one critical equipment, which is Hydrocyclone. Our adopted approach summarizes various modeling tools working with a well-known industrial partner in Phosphate valorization. Using these approaches, we will guarantee efficient beneficiation processes by optimizing their operating parameters. In future works, we will investigate the possibility to apply complex engineering systems approaches for different parts of global Phosphate processes.

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**Mariem Ait Bakader** Ph.D. student in Applied Chemistry laboratory at the Faculty of Science and Technology of FES in the University Sidi Mohammed ben abdellah, and Process Engineer graduated from National School of Applied Sciences KHOURIBGA. She is also a member of the laboratory research team: Complex Systems Engineering at Mohammed VI Polytechnic University. Her research fields are Process Optimization, Phosphate beneficiation, Complex System Engineering.

**Laurent Deshayes** is currently deputy director of the complex system engineering laboratory at the Mohammed VI Polytechnic University in Morocco. Mr. Deshayes holds an Engineering Degree in Industrial Systems from the National Engineering School of Tarbes, France and a PhD Degree in Mechanical Science from the National Institute of Applied Sciences in Lyon, France. He taught courses in industrial management, advanced automation, manufacturing execution systems. He is currently developing living labs and research platforms for mining and chemical processes in order to build strong Moroccan and African competencies in advanced engineering areas such as System Engineering, Advanced process control, real time scheduling, industrial digitization and Beneficiation processes.

**Mohammed El Asri** is currently a fulltime lecturer in Faculty of Sciences and Technology, Sidi Mohamed Ben Abdellah University. Also is head of Research Team: Macromolecular and Applied Chemistry. Mr. EL ASRI PhD in Materials Chemistry at Montpellier II University. He supervised several research projects and PhDs. He has taught courses in polymer and organic chemistry and Thermochemistry and kinetics. He has also taught optimization and control of industrial process by design of experiment. He coached several companies on control and optimization from projects by DOE. He is also an expert and trainer with a Saiss Opex consulting firm.

# THE CAUSAL MODEL OF WORKFORCE'S SKILL DEVELOPMENT IN THE 21ST CENTURY: NUMERACY

**Sunisa Juimongsri**

*Sukhothai Thammathirat Open University, Thailand, E-mail: sunisa.jum@stou.ac.th*

**Sajee Jiraro**

*Sukhothai Thammathirat Open University, Thailand, E-mail: sajee.jir@stou.ac.th*

## ABSTRACT

Numeracy is a basic skill that will lead to developments in the 21<sup>st</sup> century. The purpose of this study was to analyze the causal factors of numeracy development. Data were collected from 2,000 Thai samples aging 15 - 65 years and analyzed using structural equation modeling. It was found that the factor that had the most significant and positive effect on the numeracy was achievement motivation to numeracy. The uses of information technology for communications and learning numeracy were indirectly affected by the achievement motivation.

**Keywords:** Numeracy, Numeracy Development

## INTRODUCTION

Changes, evolutions and advancements in all aspects in the 21<sup>st</sup> century (i.e. the age of globalization) are rapid and drastic. Thus, each country has to set strategies and be prepared for the changes in order to appropriately improve the skills of their workforces in this century. Since Thailand has variety of people's characteristics such as nationality, religion and living; they have different needs for self-developments. Especially for people aged 15 – 65 years (i.e. working age), these people are the important workforces whose skills must be improved according to the changes. According to Thailand's adult skill assessment report in 2014 (Office of the Education Council, 2015), it was found that Thailand needed to quickly develop foundations for the changes in three aspects including literacy and reading component, numeracy, and problem solving in technology-rich environment. The developments of the mentioned skills require to understand the factors leading to the developments in order to gain information for setting strategic plans and policies for the developments of human capacity for the 21<sup>st</sup> century, both in terms of human capacity development and the youth development with formal and informal education. Therefore, this study was conducted in order to analyze the casual factors of developing the numeracy that is a basic skill for living and developing concepts and innovations leading to advancements in this century.

### **Numeracy**

The Program for the International Assessment of Adult Competencies (PIAAC) (Office of the Education Council, 2015) defined numeracy as an ability to access, use, interpret, and communicate mathematical data and concepts in order to access and handle mathematical needs in situations in adulthood. Numeracy is an essential skill for adults and societies.

### **Acheivement Motivations to Numeracy**

An achievement motivation is a desire for significant accomplishment. The individual with achievement motivation will be enduring and consistent concern with setting and meeting high standards of achievement. The success make them happy, in other words, the failure make them worry (McClelland, 1961 cited in Kotsri, 2004). The achievement motivation is a factor affecting an ability to solve mathematical problems (Samransuk, 2009; Wangprasert, 2012), mathematical achievement (Jamroenpat, 2009; Jai-Uea, 2012), and mathematical reasoning ability (Udompornmontri, 2012).

### **Attitudes towards Numeracy**

An attitude towards mathematics is an individual's feeling to respond to mathematics subject regarding its benefits, importance of contents, and classroom management after experiencing a mathematics classroom management. The attitude may be positive, neutral or negative. The attitude is a factor affecting an ability to solve mathematical problems (Wangprasert, 2012), mathematical achievement (Bas and Kuiper, 1999; Schreiber, 2002), mathematical reasoning ability (Udompornmontri, 2012), and numeracy (Member of the All Numeracy Team, 2002).



## The Uses of Information Technologies for Communicating and Learning Numeracy

The uses of the information technologies significantly develop achievement motivations to numeracy by delightful learning environment which promote the students' interest and understanding (Hudson et al., 2006). The information technologies are similar to vehicles for learning numeracy. Children can apply mathematical concepts to conduct calculation related activities (Kilderry and et al., 2003). The development of learning numeracy through ICT efficiently promotes interactions between learners and lessons since the learners are motivated to learn and be parts of the lessons (Coben et al., 2007).

### Supporting Factors

Straesser (2015) mentioned that the numeracy development of working-aged people should be relevant, appropriate, and integrated to their duties. Parents who have paid their attentions to their children's numeracy since the children were young could improve the children's numeracy (Schreiber, 2002). Family background (Bas and others, 1900; Kiamanesh, 2002), communications with parents (Bicer and others, 2000), family supports (e.g. family expectation) (Bicer and others, 2000), and parents' education (Schreiber, 2002) are supporting factors of different numeracy levels.

### Numeracy Engagements

An engagement in numeracy is a positive feeling to do a task and be a part of it. A longitudinal study of Warren, Young, and deVries (2008) in young Australian indigenous students' literacy and numeracy (YAILN)--collecting learning data and teaching activities that support the students' learning in Queensland--found that learning by playing is very important for learning the mathematical basics. Playing with mathematics develop the students' engagements in studying the subject, and then led to their learning developments.

## DATA

In this study, the quantitative data were collected from Thai people aged 15 – 65 years working in agriculture, industry, and service sector across 5 regions of Thailand including the northern part, northeast part, southern part, Bangkok and vicinity. (400 samples for each region and 2,000 samples in total) using questionnaires. The qualitative data were also collected using interviews (10-15 samples for each region and 181 samples in total).

## METHODS

The review literature were conducted for drafting the hypothetical causal models of the numeracy development. Then, eighteen Thai education experts were evaluated the draft of hypothetical model. After the revision of model using the experts' recommendation was conducted, the research instruments were developed. Data were quantitatively collected using numeracy test and questionnaires. In-depth interview was performed to collect the qualitative data.

The consistencies of the developed models and empirical data were analyzed using Structural Equation Modeling (SEM) via LISREL program. The contents from interview were analyzed using MAXQDA program. Afterwards, the model was reviewed by 13 education experts. Consequently, conclusions regarding policies for Thai population's numeracy development were made.

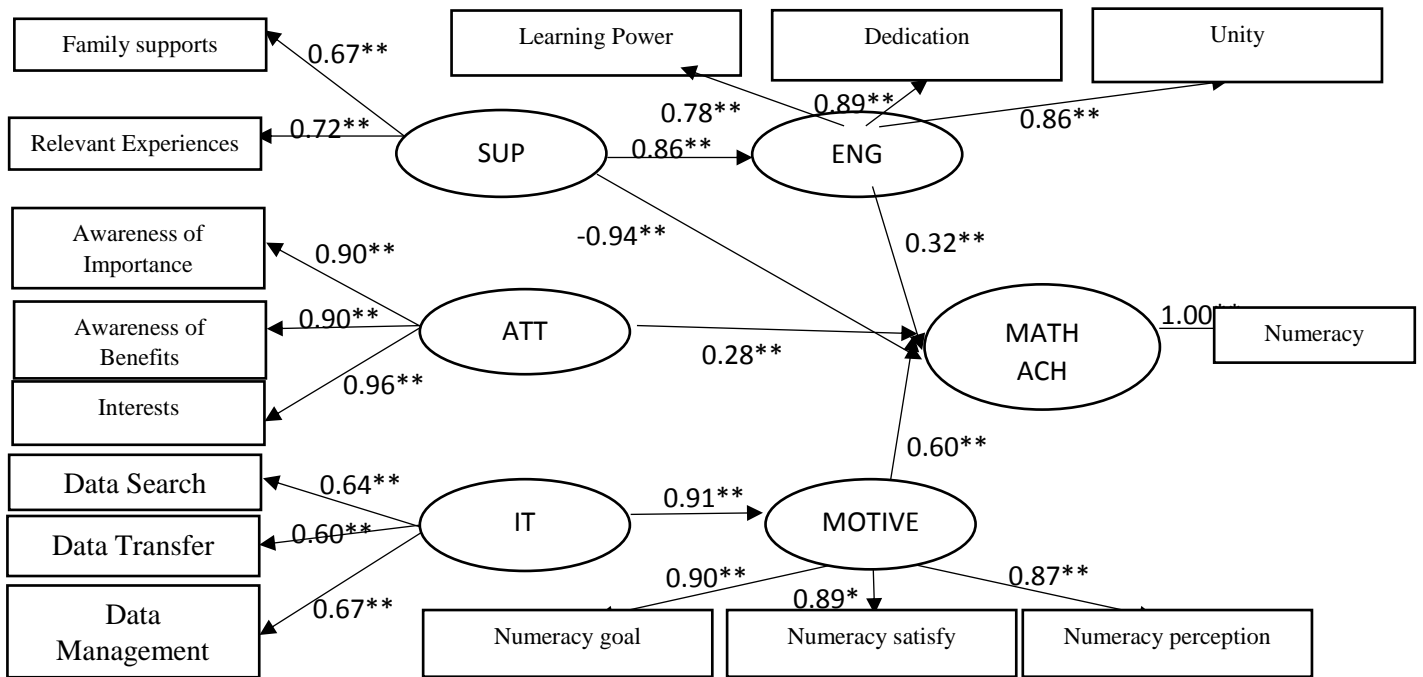
## RESULTS

The result revealed that the hypothetical model of workforce's skill development in the 21<sup>st</sup> century model (numeracy) was consistent with the empirical data after constrained the relationships of observed measurement errors. The model fit indices was shown in Table 1

**Table 1: The model fit indices of workforce's skill development in the 21<sup>st</sup> century model (numeracy)**

Model fit indices	Criteria	Value	Conclusion
Chi-square( $\chi^2$ ) without any difference	$p > 0.01$	0.10	Accepted
$\chi^2/df$	$< 2.00$	1.46	Accepted
GFI	$> 0.95$	1.00	Accepted
AGFI	$> 0.95$	0.99	Accepted
CFI	$> 0.95$	1.00	Accepted
RMSEA	$< 0.05$	0.015	Accepted
SRMR	$< 0.05$	0.006	Accepted

By considering the standardized form of direct, indirect, and total effect of the numeracy models as shown in Figure 2, it was found that the factors that had the greatest positive direct effect on numeracy was the supporting factors to numeracy (SUP; standardized coefficients equal to 0.86) followed by the attitude towards numeracy (ATT; standardized coefficients equal to 0.28) which mean that the individuals with supporting factors to numeracy and attitudes towards numeracy will have high numeracy. Regarding the indirect effects, it was found that the uses of the information technologies (IT) for communicating and learning numeracy had indirect effect on MOTIVE (standardized coefficients equal to 0.54). The supporting factors (SUP) had indirect effect mediated by the numeracy engagement (ENG; standardized coefficients equal to 0.28). The total effect is -.066.



**Figure 2:** The Causal Relationship Models of Numeracy

By considering the total effect which combined the direct and indirect effects, it was found that the factors that had the greatest positive effect on numeracy was MOTIVE (0.60) followed by IT (0.54), ATT (0.28), and ENG (0.32). SUP has the total effect value of -0.66. That is negative effect on numeracy. The direct, indirect, and total effects of workforce's skill development in the 21<sup>st</sup> century model (numeracy) was shown in Table 2

**Table 2:** Direct, indirect, and total effects of the numeracy skill development (n = 2,000)

Causal variable	Numeracy Engagement (ENG)			Numeracy Motivation (MOTIVE)			Numeracy Skill (MATHACH)		
	DE	IE	TE	DE	IE	TE	DE	IE	TE
<b>IT for numeracy development (IT)</b>	-	-	-	<b>0.91**</b> (0.03)	-	<b>0.91**</b> (0.03)	-	<b>0.54**</b> (0.13)	<b>0.54**</b> (0.13)
<b>Support (SUP)</b>	<b>0.86**</b> (0.03)	-	<b>0.86**</b> (0.03)	-	-	-	<b>-0.94**</b> (0.07)	<b>0.28**</b> (0.08)	<b>-0.66**</b> (0.13)
<b>Numeracy attitude (ATT)</b>	-	-	-	-	-	-	<b>0.28**</b> (0.03)	-	<b>0.28**</b> (0.03)
<b>Numeracy Engagement (ENG)</b>	-	-	-	-	-	-	<b>0.32**</b> (0.10)	-	<b>0.32**</b> (0.10)
<b>Numeracy Motivation (MOTIVE)</b>	-	-	-	-	-	-	<b>0.60**</b> (0.14)	-	<b>0.60**</b> (0.14)
<b>R<sup>2</sup></b>	0.74			0.84			0.21		

**\*\* p < .01**

**Note:** DE = Direct effect, IE = Indirect effect, TE = Total effect

### CONCLUSION

It could be concluded that the supporting factors to numeracy was a factor that had the greatest positive effect on numeracy. The uses of information technologies (IT) for communicating and learning numeracy had indirect effects from the numeracy engagement. On the other hands, the individuals with quite high numeracy ability as self-report mostly had calculation-related occupations requiring complex, fast and accurate numeracy as well as computer programs. Some of those evaluated themselves as ones with low numeracy ability had fair numeracy or no numeracy with frequent calculation errors and without complex calculation skills.

### DISCUSSION

The research found that supporting factors negative direct effect on numeracy. On the other hands, it has positive indirect effect on numeracy through numeracy engagement. That is, if the numeracy skill is supported by supporting factors in a sense of numeracy engagement, it will be positive. On the other hands, if the numeracy skill is supported by direct supporting factors, it will be negative. In line with Straesser (2015), who commented that the development of numeracy skill should suitable and relevance for work. This will success to develop the skill. In addition, Bas and Kuiper (1999) argue that family support has resulted in children numeracy engagement. This leads to higher levels of numeracy skill. If it is direct support, but no sense of engagement. This will make the person have less ability to numeracy.

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# THE ETHNOGRAPHY STUDY OF THE URBAN POOR LIVES IN THE PUBLIC SPACE

**Kumpetch, Jaruwan (Assoc.Prof)**

Srinakharinwirot University  
Faculty of Social Sciences, Department of Sociology  
113 Sukhumvit Road, Bangkok, Thailand  
(+66)89-897-1451 Email: [kjaruwan@yahoo.com](mailto:kjaruwan@yahoo.com)

## ABSTRACT

The study of urban poor lives and the use of public space in this city is aiming to present empirical information about poor lives who have been using public space as their part of living. The study method is the participatory observation with some urban poor lives. The interviews are deeply focused on their daily routines and backgrounds. The area of study is in the center of Bangkok, at Sukhumvit Road between Asok-Sukhumvit and area around it, where embassy, commercial business company, expensive housing, and department stores are located. This area can also be referred to the major business area in Bangkok. The study has shown that world's population now rather lives in an urban area than a rural area. People who came to Bangkok are seeking a better life and they have worked here for over 20 years. They either work as an employee, go around collecting old stuff for resale, sell food on street, or work as general service staffs. The immigrants see Bangkok as an area of opportunity. It has been designed for convenient and faster lifestyles. However, there is another side of the town where people are struggling in the midst of the city because Bangkok is not yet to be a place for everyone who is different in classes. Despite the differences in status, conditions, and occupation, urban poor lives are trying to survive and have honor humanity.

**Keyword** Bangkok, urban poor lives, Sukhumvit Road

## INTRODUCTION

The study of society and people in the world was originally described as people are identified to live in rural area and urban area. Until 1996, the percentage of people who live in an urban area has risen up to over 50 (Clark,1:1995) By the turn of the millennium, it has been found that world's population has become more of urban lives than rural lives. With the condition that urban cities have more civilization and grow along with the modernism, has given the positive thought to people. However, the more growth of the city, the higher number of urban poor lives. Thai society is one of many countries that are trying to develop itself to an urbanization. Nonetheless, the city has influenced many aspects of poor urban lives, such as living, traveling, working, and leisure. The main characteristics of the city are location, economy, and level of development. Whereas, the lives of poor urban people are limited because of pollution, risks, and environment that interfere the relationship between lives and city (Jan Gehl,15:2010) Furthermore, Jane Jacobs (1960) published one of the most important books "The Death and Life of Great American Cities". He specified that if the city is mainly focused on traffic transportation, independent building construction, there will be no more public space and urban lives. Consequently, the city might turn to a lifeless town.

The study of urban poor lives and the use of public space is aiming to present ethical characteristics of urban poor lives. In Bangkok, one of the most powerful economic area is at Asok-Sukhumvit. With the facts that Asok-Sukhumvit area is surrounded by commercial companies, that run business activities, expensive residential buildings, relaxing space at the Asian's largest shopping mall despite urban poor lives. This is known as the overlap of utilization in spaces.

Bangkok is first established in the year 1782 with only 4 square kilometers, but right now, there are increased to 1,568 square kilometers. The continually expanding of the city is going along with the expansion of new roads that were built to replace the water transportation. The population are original people and Chinese. Because of the city growth, Sam-peng, the commercial area with Chinese people, has changed to

make a contract with Western people. Consequently, western people deal more business activities and establish their own embassy and consulate. Western trade routes along the Chao Phraya River include the Silom and Ratchawong. The city has expanded to the southeast northeast areas because there are more spaces left than the others. The southern part of Bangkok is an industrial area because it is closer to a pier and it caught rural lives to move and work in the area. In the year 1960, Bangkok has grown into an industrial investment. The area around Yannawa, Thonburi, Prakanong, and Samutprakarn, are used for small industries. In 1970, the number of lands used for industrial investment has risen. The car industry was invested and the encourage in travelling that has led some area to become a nightlife area. With the Vietnam War period, many soldiers traveled to Bangkok and there was an emerge of the area called “Redlight District” at Silom road which is worldwide known as “Patpong”. This kind of area has continually expanded to the north of Sukhumvit and soon connected Petchaburi Road where hotels and bars are located along the way. The expansion of Bangkok area has shown the interaction that “City build people and people build a city”. The ethical urban poor lives study as Walter Benjamin (1927: 1940) wrote the article “Arcade Project” which he located city as “text” that is readable and people in the area all have experiences with the city. In another word, the way people are in the city is changing accordingly with how the city is created by the reading of people in the city. The development of the city from traveling by water to road traffic and now is using the railroad traffic. With the changes, the way of lives and uses of spaces has been affected.

### LITERATURE & THEORY

Ethnic description of urban poor lives in the city does not only define as people who have a low-income, but it also covers people who lack opportunity, honor, and humanity. The poor and immigrants are a shadow of the urban city. They are gathering together in different areas where the house rental is not expensive or use the public space and soon form a slum in the city. The urban poor life once said that “The city will not grow without poor lives” because they are a part who build the city and create the identity of urban poor lives.

The growth of Bangkok is classified as “world cities”. Even though Bangkok has not ranked as core country, but it is ranked in secondary semi-periphery countries (Clark, 140)

URBAN WORLD / GLOBAL CITY			
TABLE 1 Hierarchies of world cities			
Core countries		Semi – periphery countries	
Primary	Secondary	Primary	Secondary
<b>Europe :</b>			
London	Brussels		
Paris	Milan		
Rotterdam	Vienna		
Frankfurt	Madrid		
Zurich			
<b>America :</b>			
New York	Toronto	São Paulo	Buenos Aires
Chicago	Miami		Rio de Janero
Los Angeles	Houston		Caracas
	San Francisco		Mexico City
<b>Asia :</b>			
Tokyo	Sydney	Singapore	Hong Kong
			Taipei
			Manila
			<b>Bangkok</b>
			Seoul

Source: Friedmann (1986) in David Clark (1996:140)

The city construction of Paris was planned by Haussmann, who developed Paris after the year 1852. He has planned to build a big road with the very broad range to facilitate civic control by the military and facilitates the culture of the people who come out to relax and there are coffee shops along 2 sides of the street. Jan Gehl has mentioned that the building needs to have space between each other so people can interact with one another. In another word, life between buildings is to do activity together as a part of city's area. Walking is the beginning of that. Therefore, the city has to create a good opportunity for walking and also encourage urban lives. The characteristic of urban lives is diversity and complexity.

Another way to explain relationship between people and area is from Lefbvre (1991:33) He used idea of Space to explain people's characteristics from the work called "The production of Space-POS) He classified areas into firstly, Spatial practices, which describes the area of production, repetition, and set of characteristics in each form of creation. This will hold people within the area together. Secondly, Representation of space which associate production relationship with other things. Thirdly, Representational space that is created from complexity in symbols, time codes, that in some cases are linked to some concealment of social life and art. The study by using the concept of Space will build a better understanding of representation in the area that is created from physic, mental, and social (Jaruwan Kumpetch, 2012: 13)

## DISCUSSION

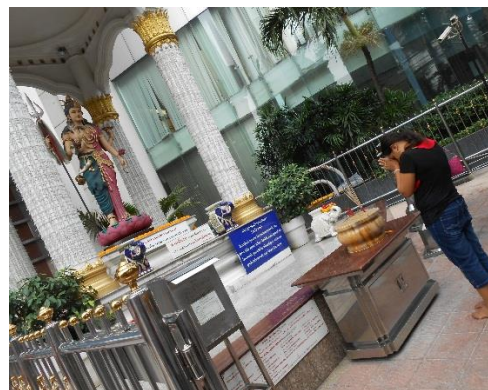
The study to describe a characteristic of people living in the different area comes from a classic study of sociologists that have differentiated areas into rural and urban areas and further to differentiate the characteristics of people. Ferdinand Tönnie (1887) has described the social structures into *Gemeinschaft* and *Gesellschaft*. Whereas Talcott Parsons (1967) has described social structures into Modern society and Traditional society. Nonetheless, Max Weber (1958) has described it as the Capitalist society and traditional agrarian society. Another sociologist, Emile Durkheim (1893) has described social structures as Mechanic solidarity and Organic Solidarity. By describing the social structures, rural society's description is usually about simplicity and dependent on each other. Whereas the description of urban society is an independent living, not familiar and disinterested with each other, and trust problems. Those are common characteristics of urban lives that lie on an individual. The classic work, which is related to study of Bangkok, is written by Akin Rapeepat (1994) *The anthropology of the city*. The slum in Bangkok that Akin has significantly and differently described lives in urban areas from the previous concept that usually concerns city's problems. Foucault is another person who used areas to explain the characters of people who are created from the environment they are living in. He defined that as "Fundamental areas". In *Human Integrity* (1984), Foucault's study has presented characteristic of people who live in different areas, such as prison, military hospital, and the madhouse. He concluded that areas create person's characters.

The study of urban poor lives in public space. People are using space on the road for commercial purpose, living, mental happiness, and workplaces. There are several cases we have experienced. First, the case of Jasmine. Jasmine is working at one of the nightclubs on Sukhumvit road. Jasmine is transgender who moved to Bangkok in 1986. Her hometown is in the northeastern part of Thailand. She finished high school and has been working since then. She has been working for over 30 years in different bars. The positions she has taken before are receptionist and cashier. Currently, Jasmine is working as a manager. She starts working in the afternoon, walking from her rented room. Then she will open the place and work as one of the employees during night time. Jasmine works as a translator since most of the customers are foreigners. Due to her workplace and position, she has learned many languages to understand and attract customers. The interaction between Jasmine and her co-workers is going smoothly because they are the same which is defined that they are under the same conditions of culture and economy. For instance, divorce with husband or wife, taking care of children or parents alone. This will guarantee the survival in the city.



The atmosphere and people at night in soi cowboyo.

The second case is the girl named Kate. Kate is like a bloomed flower in the area for over 20 years. However, she married a foreigner, whom she met at the bar. Kate came from the northern part of Thailand. She has a beautiful face. She finished high school, got married, and had children later on. The Sukhumvit area has changed her life. She got accepted from people in the area despite the divorce. She donated her money for building a temple. However, at one stage, Kate has to get medical care from madhouse because she has a nerve problem. Kate works as hostess with no monthly salary. Due to that, she has to promote herself to a customer by massaging. She expected the customers to buy her a drink. Kate lived in her workplace for over 20 years. She has been under stress because of the responsibilities she has to handle. Her health get worse because she has to drink with customers every night, as well as her mental health. Kate once wore white clothes, like Buddhist nun, to work. Later on, she was sent to the hospital to get health care. Within the area where bars are located, it is where competition to gain advantages starts. Kate didn't go back to work because of her sickness. According to Mary L. Grow, he studied about a group of people who work as a joker. He found that this group of people had to perform ceremony based on their belief. This is similar to Kate's case. Kate turned her head to meditation ritual as one of the recoveries. This action has shown the confliction in urban lifestyle. At Asoke road, the most important commercial area, is a location of Ardhamariswara, according to Hindu belief. Workers in the area come to this place to pray for what they want or ask for help. Kate is one of many people who go to pray Ardhamariswara.



The blessing in the urban area at Sukumvit Rd.

The third case is about a hawker named Chai. Chai sells one of Thai food at Ratchadapisek Road since he was young. Now, he is 90 years old but still sells Thai food. Chai said that he was from the middle part of Thailand but moved in to Bangkok to work at the port when high number of people were needed. He rented a house near Khongtoei Pier and have lived there since then. Chai said that "When I first came here, Rama 4 Road has not been built. There were no cars and no Ratchadapisek Road. Even though there is road, it is not as board as it is now. Khongtoey market is not as big as it is nowadays. Money left from selling is not much. After I moved to Bangkok for over 60 years, I have seen so many changes"





Street vendor at Khlong Toei market

The fourth case, Paul is a homeless guy. He used space in front of 7&11 convenience store as a home for over 10 years. In the afternoon, Paul stays at the park closed to an area. In the night, Paul comes back to sleep at 7&11. Since Paul has left hometown for over 40 years and he has not planned to go back because there is no one left. He said that he lived a freedom of life as a homeless. The place in front of a convenience store is safe because the light is turned on the whole time. He doesn't see any problems with living on the street because he doesn't have enough money to pay the rental fee. Using public space is suitable for city life.



Homeless people in Bangkok

To study about this, the qualitative method is used. The participatory observation with the area around Asoke and Sukhumvit road of over 2 kilometers. Moreover, the small street between Sukhumvit 21 and Sukhumvit 23, which is called Soi Prasanmit, is where Soi Cowboy located. Nonetheless, a place in front of Emporium The EmDistrict was also observed. We have worked 24 hours for a month to collect the useful and accurate information. We also did an in-depth interview with urban poor lives who use public space for living, working, and leisure. To analyze the concept of space and urbanization

## RESULTS

The study found that urban poor lives have a different form of living according to their economic conditions and individual's society. Everyone has moved to Bangkok for over 20 years. Some of them has changed job to a higher salary rate. Some decided to live a free life of hawker. Some used public space as a home. All the public space created the interaction within society. In an urban area, there are several types of people. Those people provide what white-collar workers, who work in a high-rise office building, need such as food or stuff.



The street food for office worker.



Motorbike hire in the rush hour of the city.

## CONCLUSION

The development of the city, immigrants moved into the urban areas because they were looking for a better life quality. People adapted themselves to a change of the city from 150 years ago. Many high-rise buildings, that have taken space around the world, have changed the landscape of the city. This has influenced urban poor lives just like what Jasmine, Kate, Chai, and Paul have faced. The study of the city from George Simmel (1858-1918), he wrote a story of “The Metropolis and Mental Life (1930:103) explained about the relationship between mental and psychic life. He stated that the city has an influence on lives in the city. Even though Kate was sick, people didn’t contact her that much because they believe it’s not related to them. Urban lives believe in “Freedom to be different is possible”. George explained about individual lives in the city and the status of the modern city as a currency has more impacts. Moreover, the freedom of the individual in the city has changed from the past. Chai might get to talk with the customer but it is only for a short period of time. Paul might also get to talk with another homeless but no one will go deeply in details about another’s life. This is because there are differences in urban lives, including culture, social structure, gender, and education. We can also refer this as a subculture of an individual (Monti and all, 2015:86).

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# EFFECTIVENESS OF SELF-HELP GROUP PROGRAM FOR IMPROVING SELF-CARE BEHAVIOR AMONG TYPE 2 DIABETIC PATIENTS RECEIVING SERVICES AT SUB-DISTRICT HEALTH PROMOTION HOSPITALS IN BANGKONTHEE DISTRICT, SAMUT SONGKRAM PROVINCE, THAILAND

Wanich Suksathan<sup>1</sup>, Boonsri Kittichottipanich<sup>2</sup>, Thipapan Sungkha<sup>3</sup>  
& Kantapong Prabsangob<sup>4</sup>

<sup>1,2,3,4</sup>College of Nursing and Health, Suan Sunandha Rajabhat University, Thailand

<sup>4</sup>College of Allied Health Science, Suan Sunandha Rajabhat University, Thailand

E-mail: <sup>1</sup>wanich.su@ssru.ac.th, <sup>2</sup>boonsri.ki@ssru.ac.th, <sup>3</sup>thipapan.su@ssru.ac.th, <sup>4</sup>kantapong.pr@ssru.ac.th

## ABSTRACT

Based on the concept of social cognitive theory, a Self-Help Group program was designed for type 2 diabetic patients in community based-care.

This quasi-experimental research was to evaluate the effectiveness of the Self-Help Group program for improving self-care behavior among Type 2 diabetic patients receiving services at sub-district health promotion hospitals in Bangkonthee district, Samut Songkram province, Thailand.

The sample of this study was 70 participants, aged 50 – 80 years, were purposively assigned to the intervention groups (n = 35 patients receiving services from Jomploung sub-district health promotion hospital) and the control group (n = 35 patients receiving services from Bang Prom and Bang Yeerong sub-district health promotion hospitals). A questionnaire for socio-demographic characteristics and self-care behaviors was used for data collecting. Descriptive statistic, Independent and Paired t-test: Baseline and 3 months were used for data analysis.

The results of the study revealed that the intervention group showed higher self-care behavior than before the intervention and higher than comparison group ( $p < 0.05$ ). The finding showed the significant improvement in self-care behavior. It was concluded that the self-help group program could enable diabetic patients to enhance their self-care behavior to control their blood sugar.

**Keywords:** Diabetes, Self-care behavior, Self-help group.

## INTRODUCTION

Diabetes mellitus or diabetes is one of chronic diseases and causes death to numbers of patients around the world. In 2013, an approximately 382 million people are estimated to have diabetes and 316 million people are living with impaired glucose tolerance [1]. The number of people with diabetes is increasing in every country. For Thailand, according to Ministry of Public Health (Thailand), Chronic Disease Surveillance Report of 2010, there were 888,580 diabetic patients in Thailand. The ratio of diabetic illness from the report was 1,395 patients per 100,000 populations. This made it ranked as the second top of non-communicable diseases, of which the first top belonged to high blood pressure. Diabetes is due to abnormal insulin production or the effect of insulin that has an impact on high blood sugar or glucose level. According to pathology, diabetes can be classified into four types; type I, type II, gestational diabetes (found during pregnancy), and other types [2]. Type II diabetes mellitus is caused by the combination of abnormal insulin secretion of beta cells and the effect of insulin resistance. A person with diabetes may have either result from those mentioned causes greater than one another. Despite diabetes is a chronic disease, it is treatable through dietary control, physical exercises,

and oral medicine. The patients who have long term diabetes, their beta cells may gradually be destructed and fail to control the blood sugar or glucose level. Insulin medication, such as insulin injection, is needed to help control the glucose level instead of the cells' production itself. Type II diabetes is mostly found in people aged over 40 years. Risk factors of this type are older age, overweight, lack of physical exercises, and genetics. The patients with long term diabetes and poor blood sugar control will easily develop complications that cause illness and death. Complications in diabetic patients may be found when the persons are first diagnosed of diabetes. Those people may have diabetes without any symptoms. The goal of treatment in diabetes is to control blood sugar to normal or close to normal level as much as possible. So fasting blood glucose level after 8-12 hours must be 90-130 mg/dl, or the level of hemoglobin A1c (HbA1c) is less than 7% [2].

Diabetes is a chronic disease. The patients must see their doctors regularly for health check up, picking up some medicine, and taking doctors' advice. While examining, the patients must inform symptoms and health problems related to their diabetic illness. The doctor will provide recommendation of how to take better care of themselves, and how to control blood sugar to normal level; prescribe medicine; and explain how to take medicine correctly. In order to make patients understand and follow doctors' advice correctly, communication between patients and doctors must be effective. The important components to improve mutual and better understanding are language usage in communication and point of views on the topic discussing. Both patients and doctors must understand what the other try to communicate and what the other perceive on the subject they are discussing. When the patients do not understand health information or have low health literacy, they will not follow doctors' direction. Low health literacy and abandoning doctors' advice or direction are obstacles prevent them from good health. In addition, prior study found that health literacy had association with self-care behavior among Type 2 diabetic patient [3].

A major aim in the management of diabetes is to decrease the risk of long term complications such as circulatory problems, renal failure, blindness, and peripheral neuropathy [4]. Stabilizing and reducing high blood glucose levels can reduce the occurrence of such complications. To maintain blood glucose levels in a normal range, individuals with diabetes are advised to follow a complex management regimen typically consisting of: blood glucose testing several times daily, daily administration of insulin or medication, careful regulation of the timing and content of diet, and regular exercise.

Self-care behavior, a key concept in health promotion, refers to decisions and actions that an individual can take to cope with a health problem or to improve his or her health [5]. There are four dimensions of self-care including physical dimension, prevented complication dimension, treatment dimension, and psychosocial dimension [6]. Self-care behavior requires motivational and self-regulatory skills. Self-care management operates through a set of psychological sub-functions. People have to learn to monitor their health behavior and the circumstances under which it occurs, and how to use proximal goals to motivate themselves and guide their behavior. They also need to learn how to create incentives for themselves and to enlist social support to sustain their efforts. Lack of social support, particularly from friends and family, is also considered a barrier to treatment adherence and self-care, while high levels of support are related to better long-term self-care management, health outcomes, and glucose control [7] [8]. In traditional society, family and friends provided social support. In modern industrial society, however, family and community ties are often disrupted due to mobility and other social changes. Thus, people often choose to join with others who share mutual interests and concerns.

Self-help groups, also known as mutual help, mutual aid, or support groups, are groups of people who provide mutual support for each other [9]. In a self-help group, the members share a common problem, often a common disease or addiction. Their mutual goal is to help each other to deal with, if possible to heal or to recover from, this problem. In self-help groups, specific modes of social support emerge. Through self-

disclosure, members share their stories, stresses, feelings, issues, and recoveries. They learn that they are not alone; they are not the only ones facing the problem.

Participatory action research (PAR), a research method wherein the investigator and participants collaborate, espouses the value of emancipation and empowerment to help identify and explore constraints affecting participants' lives, as well as to brainstorm about ways to overcome such barriers.[10] The key features of PAR are to: plan for change; initiate action for change; observe processes and consequences of change; reflect on the processes and consequences; revise the plan; and, continue in the cycle.[10]

Since the overall purpose of self-help groups is to afford mutual assistance in accomplishing set goals,[11] such groups have been considered forms of PAR that can help disadvantaged individuals learn ways to overcome their circumstances and improve their lives.[5] Evidence suggests self-help groups empower older people with diabetes to better manage their disease through mutual sharing of illness-related information and experiences.[12] Similarly, the emotional support generated, within self-help groups, has been found to reduce stress, anxiety, depression and feelings of isolation,[13] as well as increase one's perceived confidence or efficacy related to undertaking self-care activities.[14]

Therefore, the overall aim of this study was to gain a better understanding of the process and perceived benefits for Type 2 diabetic patients receiving services at sub-district health promotion hospitals, participating in a self-help group program. The objective of this quasi-experimental research was to evaluate the effectiveness of the Self-Help Group program for improving self-care behavior among Type 2 diabetic patients receiving services at sub-district health promotion hospitals in Bangkonthee district, Samut Songkram province, Thailand.

## METHODOLOGY

A Self-Help Group program was developed by using participatory action research. This method involved the use of both qualitative and quantitative methods. Qualitative data were collected through self-help group discussions and observations, while quantitative data were obtained, at before and after intervention, via questionnaires regarding socio-demographic characteristics and self-care behavior. The PAR process, in this study, involved 5-interactive stages: a) planning; b) action; c) observation; d) reflection; and, e) revising the plan.[14] The researcher and participants worked collaboratively, throughout each of these stages.

The sample of this study was 70 participants, aged 50 – 80 years, were purposively assigned to the intervention groups (n = 35 patients receiving services from Jormplog sub-district health promotion hospital) and the control group (n = 35 patients receiving services from Bang Prom and Bang Yeeerong sub-district health promotion hospitals). The Self-Help Group program was applied to the intervention groups for three months, while a regular health promotion program was applied to the control group. A questionnaire for socio-demographic characteristics and self-care behaviors was used for data collecting at baseline and 3 months. Self-care behaviors were assessed using four point likert scale questions adapted from a self-care management questionnaire. Descriptive statistic, Independent and Paired t-test: Baseline and 3 months were used for data analysis.

Ethical approval was attained from the Suan Sunandha Rajabhat University Institutional Review Board on human rights, prior to commencing the study.

## RESULT

**Qualitative findings.** All participants expressed satisfaction with participating in the Self-Help Group program. During the group's activities, feelings, experiences and recommendations, related to managing diabetes were noted. The social support received from the group appeared to enhance acceptance of diabetes

and understanding the need for self-care diabetes management. Joining the program appeared to enhance the participants' confidence in control their diabetes.

**Quantitative findings:** The majority of the participants were female, aged 50-76 years old. Most participants were diagnosed with DM more than one year (ranged 1- 20 years) prior to interviewing. Most of them were not able to control their blood sugar (HbA1c > 7.0). There was no significant difference between the socio-demographic characteristics regarding gender, age, duration of DM, and blood sugar of intervention and control groups. Also, as noted in Table 1, before applying the Self-Help Group program, self-care behavior of intervention and control groups was not significantly different. After 3 months of applying the program, self-care behavior of intervention group was significantly increased, compared to their self-care behavior score prior to participating in the program, as noted in Table 2. On the other hand, self-care behavior of control group was not significantly increased, as noted in Table 3. In addition, after 3 month participation in the Self-Help Group program, self-care behavior of intervention group was significantly higher than the control group, as note in Table 4.

**Table 1**

Self-care behavior mean score of intervention and control groups at baseline

Group	N	Mean	S.D.	Sig.
Intervention group	35	3.43	0.369	0.256
Control group	35	3.33	0.339	

**Table 2**

Self-care behavior mean score of intervention group before and after 3 month participation in the Self-Help Group program

Time	N	Mean	S.D.	Sig.
Baseline	35	3.43	0.369	0.00**
After 3 months	35	3.64	0.320	

\*\*Difference is significant at the 0.01 level ( $p < 0.01$ )

**Table 3**

Self-care behavior mean score of control group before and after 3 month participation in the regular health promotion program

Time	N	Mean	S.D.	Sig.
Baseline	35	3.33	0.339	0.904
After 3 months	35	3.34	0.338	

**Table 4**

Self-care behavior mean score of intervention and control groups after 3 month participation in the programs

Group	N	Mean	S.D.	Sig.
Intervention group	35	3.64	0.320	0.00**
Control group	35	3.34	0.338	

\*\*Difference is significant at the 0.01 level ( $p < 0.01$ )

## DISCUSSION AND CONCLUSION

Using the Self-Help Group program, as a form of mutual aid, aligned well with Participatory action research in that participants worked together to share information and experiences to overcome their self-care

barriers. The program help enhance participants' self-care capacity as the finding showed the significant improvement in self-care behavior. This finding is consistent with prior studies wherein self-help groups have been found to enhance self-care behaviors. [6],[13],[15],[16] [17] It was concluded that the self-help group program could enable diabetic patients receiving services at sub-district health promotion hospitals in Bangkonthee district, Samut Songkram province, Thailand to enhance their self-care behavior to control their blood sugar.

Limitation of this study was that the majority of participants were females, thus, perceptions about positive changes in self-care behavior were likely to be derived, primarily, from a female viewpoint. Future studies need to consider developing and assessing the effectiveness of self-help group programs that include more male participants and also implement the program in other areas of Thailand.

### ACKNOWLEDGEMENTS

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# FIRE CONFINEMENT, POSTPARTUM CARE IN THAI TRADITIONAL MEDICINE

**Pongsak Jaroengarmsamer\*, Pradapet Krutchangthong\*\* & Wannee Promdao\*\*\***

*\*Pongsak Jaroengarmsamer, M.D.(Ob-Gyn), M.B.A., College of Allied Health Sciences, Suan Sunandha Rajabhat University, Thailand, E-mail: [pongsak.ja@ssru.ac.th](mailto:pongsak.ja@ssru.ac.th)*

*\*\*Pradapet Krutchangthong, M.Sc., College of Allied Health Sciences, Suan Sunandha Rajabhat University, Thailand, E-mail: [pradapet.kr@ssru.ac.th](mailto:pradapet.kr@ssru.ac.th)*

*\*\*\* Wannee Promdao, B.ATM, M.Sc., College of Allied Health Sciences, Suan Sunandha Rajabhat University, Thailand, E-mail: [wannee.pr@ssru.ac.th](mailto:wannee.pr@ssru.ac.th)*

## ABSTRACT

Postpartum care is the period of recovery from childbirth. Psychological and physiological change need to be supported. The uterine involution and lochia need time to change. The pregnant can return her physiologic change to normal as before pregnant within 6 weeks. Thai traditional medicine has a procedure called fire confinement or “YU FAI”. This procedure has its principle of high temperature and herbal effect. It can be explain many benefits to the postpartum mother in SPRIK such as quick recovery, promote wound healing and uterine involution, prevent uterine infection, shortening of lochia period, increase breast milk production, burning fat, muscle relaxation and reduce muscle ache, increase circulation and body wind flow, maintain body balance and keep the body warm. However, the procedure is complicated and difficult to be arranged in modern life. Many modifications are introduced with difference effect. Tent is the most appropriate modification that remains the major efficiency of the conventional one. This procedure can be easily performed in modern city life. This Thai traditional procedure can be supported its efficacy by scientific explanation.

**Keywords:** fire confinement, postpartum care, Thai traditional medicine

## INTRODUCTION

Postpartum is defined as the period after childbirth. It is the tired period of mother for breast feeding and the recovery time after a long period of pregnancy and delivery. Emotional and psychological affect is starting as postpartum depression, anxiety about her child, her family and herself. Physiological change during pregnancy is finished and starting to recover. In recent medical practice, medical personal may have major roles in the phase of immediate postpartum or during admission. However, after the mother being discharged, the family will take this position. Postpartum mother should have psychological support from her family, especially her husband. Physiological change will be depend on natural way only.

In Thai traditional medicine, both psychological and physiological change are important. It was practiced for long time as in the record of the history that postpartum mother should have one procedure to assist this recovery period. We call YU-FAI as fire confinement procedure.

## POSTPARTUM

As mentioned above, the psychological change needs to be supported by the family members. After tired time, the mother may have many concerns about her baby, how to feed, how he or her grow up, what will be going on in the future, etc. The worry about family may be the cost of living and job. The nearest concerning is herself, how she looked like, the possibility to return normal in function and body image, etc.

The physiologic change during pregnancy are the main concern. Weight gain during normal pregnancy should be 12-15 kgs. Some mother has more but only few mother has less gain. Immediate after delivery, the baby’s weight, placenta and amniotic fluid should be around 5 kgs. The remaining should be in

concern to get them out. Most of the mother plan to do exercise after 3 months postpartum. However, should they wait?

Uterine enlargement during immediate postpartum will become gradually involution. Lochia in the first 3 days is red, called lochia rubra. Then it turn pink or paler as lochia serosa for next 1-2 weeks. Finally the color become clear as serum without blood, called lochia alba. The whole process of normal physiologic return to normal as before pregnant may take 6 weeks.

### **POSTPARTUM CARE IN THAI TRADITIONAL MEDICINE**

The concept of Thai traditional medicine in postpartum period is to support the mother in both psychological and physiological aspect. The postpartum mother should not be neglected. The family member or the therapist should have their role in the period. Fire confinement or “YU FAI” is one of the procedure promoting the healing process. It can be started within a week of postpartum in normal vaginal delivery or natural childbirth. But it should be delayed to over a month in Caesarean delivery, waiting for the healing of the operative wound and preventing wound infection. Duration to continue the procedure may be short as only 7 days or up to 3 months depends on the therapist and the mother. However, the daily procedure cannot be done over 30 days consecutively.

It is classified in Thai traditional medicine that the fire confinement is one of the therapy in postpartum period. The benefit of the procedure are as 5PRIK.

1. Promote mother to have quick recovery from childbirth to her normal physiology before pregnant.
2. Promote healing process of the episiotomy wound, involution of the uterus and closing of cervix that prevent ascending uterine infection and vaginal discharge.
3. Promote flow of lochia in early phase and shortening the whole lochia period.
4. Promote burning of fat accumulated during pregnancy and clear skin.
5. Promote breast milk production.
6. Relax muscle and tendon being pressed by the uterus during pregnancy to reduce muscle ache and back pain. This is not only in postpartum period but aimed for the future pain in elder, too.
7. Increase circulation and wind flow of the body to maintain the body's elements balance.
8. Keep body warm, prevent chill from anemia after blood lost during childbirth.

### **FIRE CONFINEMENT**

The postpartum mother is not allow shampooing or showering since it is too cold and in the opposite way of fire. She needs to clear her skin with warm water prior to the procedure. She will stay on the large wooden board, like a bed, over the beneath 3 stoves. The stoves are lying in the line beneath her shoulder, abdomen and legs. The big sink plate is lying as the buffer of fire flame over the stove, not to burn the wooden board and functioned as the hot plate to distribute the temperature. It looks like to grill the mother. The charcoal in the stove is made of tamarind wood since it has fewer blisters broken out with constant flame. The mother on the wood board needs to turn her body side by side. This is the delicate procedure to prevent burning on her skin. She needs to drink enough warm herbal water during the procedure to prevent dehydration from heat. In some part of Thailand, the method had been modified by putting fire around the mother, not directly beneath. It has less temperature and less suffer to the mother. This is more popular than the grill type as above.

The postpartum mothers who lives in modern city may have difficulty to fine the place for fire confinement. They applied the traditional fire confinement into shortcut. Many modifications are introduced as follow.

Hot water bag, putting boiled water in the temperature durable container. The container is putting on the uterine area of lower abdomen. It is convenience and suitable for the local effect of warm compression. The higher temperature increase blood circulation of the uterus, promote healing and involution. It is believed that the temperature making the lochia dry. However, it is only the local effect and cannot replace the whole process of conventional fire confinement.



Aluminum box, the commercial fire confinement belts in the market. The box is made of aluminum, filled and refillable with herbal charcoals. The charcoal needs to be lit but without flame. The box then covered with the thick cloth belt. The belt is putting around the waist with the aluminum box at the front on the position of the uterus. The effect of warm compression is similar to the hot water bag. However, the burning herbs provide additional aromatic effect to the mother for relaxing and sleeping. This box is also effect on local area and cannot replace the conventional fire confinement.

The herbal ball compression is another modification of conventional fire confinement. The ball is composed of many fresh or dried herbs. It needs to make the ball warm prior to compress on the specific area by the therapist. The mother feels relax as the pressure on the muscle may feel like Thai traditional massage. The temperature of the ball increases local circulation and relax the muscles. The symptoms of superficial muscle ache are relieved but the depth of the temperature by this method may not enough to reach the uterus, so the effect on the uterus may less. The total efficacy of this herbal ball is depend on many factors as type of the herbs, temperature and the most important is the therapist. The wrong pressing position may cause no relaxing effect.

Salt pot compression is the old style one. It remains using in the rural area of Thailand. The big granule of salt (not salt powder) is put in the clay pot. The pot is heated then put on the mother's lower abdomen. The leaf of lucid is placed between the pot and the skin. The effect of the salt is unclear except temperature keeping. The main effect should be the leaf of lucid that reduces pain. There are some modification of salt pot. The using the hot brick is an example. However, this method is not recommended because of burning area on the skin and the therapeutic result is unclear.

Tent is the most popular modification of fire confinement in the city. It is classified as a main replacement of the conventional one. The mother is sitting in the tent, covered the whole body below the neck. Her face is not exposed in the high temperature. The source of heat is the electrical cooking pot, filled with boiling herbs. It is putting in the tent. Most of the herbs are vaped such as bergamot, lemon grass, camphor, Borneo camper, shallot, turmeric, citrus leaf, etc. The high temperature inside the tent will open the sweat glands, like sauna. The vapor of boiling herbs will have their effect to clean the waste from the skin and replace with freshness. The mother can have the whole body treatment without suffer from too high temperature of fire and more effective effect of herbs in limited space. The recommendation to stay in the herbal tent is only 15 min.

The possible benefit of fire confinement can be explained scientifically as follow;

1. The high temperature causes sweating. It opens the sweat gland and push the debris out. Obstruction of the gland and the debris can be cleared by sweating, too.
2. The high temperature causes vasodilatation and increases circulation. Good blood flow can promote wound healing and prevent infection.
3. The high temperature relaxes the muscle and reduce muscle ache.



### **PRECAUTION**

Since the procedure is dealing with heat and high temperature on tired postpartum mother. The possible of dehydration and burning injury should be aware. There are many believed contraindications such as toxic food related, cold water contamination and many restriction. However, scientific prove will be needed.

### **CONCLUSION**

Postpartum period needs specific maternal care. Both psychological and physiological support are important. Fire confinement in Thai traditional medicine is one of the procedure with scientific explanation. It is less harm to the mother but assisting physiologic change in postpartum. The modifications of the procedure can be applied in modern life. However, it needs further study for the direct effect and more efficiency outcome.

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# STRESS COPING OF ELDERLY IN COMMUNITY

**Nitaya Sichamnong**

*College of Nursing and Health, Suan Sunandha Rajabhat University, Thailand*

*E-mail: nitaya.si@ssru.ac.th*

## INTRODUCTION

Stress is what happens to everyone. Especially in the fast changing circumstances. This affect the mental health of a person. The elderly are easily exposed to stress. They are considered being a vulnerable group. Their bodies gradually deteriorate and have both physical and mental changes such as having dry skin, slower response to stimulus, degenerative eyesight, poor nervous system, fragile bones, poor muscle strength, and having degenerating organs. (1) Elderly people are at high risk of stress, which may cause physical and mental illness. When stress occurs, people will face stress or face problems in various waysthrough thinking or behavior to maintain balance in the body. (Lazarus &Folkman,1984 said that when persons have stress, they will adjust to face with stress in 2 styles; Problem-focused copingand Emotion-focused coping. Each person uses both coping styles. Whichever style is used depends on the situation of stress. The research of Nittaya SriChamnong. (2556) found The elderly are exposed to stress that may cause health problems the coping behavior of the elderly. Understanding coping in elderlyis interesting to study. Researcher has been interested in studying the coping behavior of the elderly to get information for promote the elderly to have proper coping for better quality of life.

## OBJECTIVES

To study stress coping of elderly people in community.

## LITERATURE & THEORY

This research has reviewed the concept that relates to stress coping and will concisely present as follows;

### 1. Situation of the elderly in Thailand

Nowadays, Thailand is an ageing society which its population has increased rapidly since 2000 when the proportion of the elderly (60 years or older) reaches 10 percent of country population and the country will become “completed ageing society” when percentage of the elderly population reaches 20 in 2021. Moreover, the country is expected to be a super ageing society in less than 20 years when percentage of the elderly population is 28 percent of all country population. (2) Now that the elderly have some changes in both physiological and mental health resulting from degenerating systems in their bodies.

### 2. Stress Coping

Stress means the pressure of a person when something is threatening. It causes an imbalance in the body, mind and emotions. Stress coping refers to the response used by individuals to reduce or cure stress through thoughts or behaviors that people use. Lazarus &Folkman (3) said that when persons have stress, they will adjust to face with stress in 2 styles; Problem-focused coping and emotion-focused coping. Each person uses both coping styles. Whichever style is used depends on the situation of stress.

Jalowiec (4) developed the tools for measurement stress coping under the concept of Lazarus &Folkman(3). There are three types of coping styles; confrontive coping , emotive coping and Palliative coping. People who have proper stress coping can successfully manage the cause of stress. People with

ineffective stress coping, the stress was reduced temporarily. (5) Person who use of coping styles in a manner that is not suitable for a long time. The body can not adapt, it may be harmful to health. the measurement of coping that was developed by Jalowiec composed of 3 styles. The first one was confrontive coping, it is a way to control the problem in a better way. The second one was emotive coping, it is a way of venturing emotions where the problem persists. The last one was palliative coping, it is the method used to solve the problem indirectly, which The problem does not change.

## METHODOLOGY

### 1. Research Method

This research is quantitative research. Sample was 148 elderly people of one community in Bangkok.

### 2. Research Instrument

Instrument used in this research is a questionnaire about stress coping styles which was adapted from Jalowiec (1993). The research instruments composed of 3 parts. Part 1: Confrontive coping, There are 10 items were 1) Try to find information to understand the problem, 2) Control the situation or the cause of the problem, 3) Try to identify problems and solve them, 4) Understand the problem clearly in all aspect, 5) Solve the cause problems to better handle problems, 6) Find out how to solve problems and choose the best one, 7) Try to calm, and find a better way to face problems, 8) Do activities or exercises to reduce stress, 9) Consult with a trusted or experienced person, 10) Ask for help from family or friends. Part 2: Emotive coping, There are 10 items; 1) Anxious expression, 2) Angry expression 3) Prepare yourself for the worst situation that you think will happen, 4) drink, eat, smoke more, 5) Dream up, 6) Throwing things, 7) Violent behavior with another person, 8) give reason that your thinking are correct, 9) Think that another person caused the problems and 10) Isolate alone. Part 3: Palliative coping, There are 10 items; 1. Accept the situation of problems. 2. Look for something better to compensate. 3. stay still and think that the problem is solved by itself. 4 smile with the problem 5. Do not do anything because it is a matter of fate. 6. Let the problems go on, it can not be changed. 7. Comfort yourself not to worry. 8. Sleep by thinking that problems will improve in the morning. 9. Try to forget the problem and 10) depend on the sacred. It is rating scale questionnaire in 3 level; often practice, practice in sometimes and not often practice.

### 3. Data collection

The data was collected in June, 1960.

### 4. Sample Protocols

The researchers take into account the rights of the sample by explanation the purpose of the research, research process, the duration of the research and clarify the right to accept or decline participation in this research. The presentation of the information will be presented as a whole, no name and surname of sample present in the research paper.

### 5. Data analysis

Data were analyzed using computerized data analysis program. Statistics used in data analysis consisted of frequency, percentage, mean and standard deviation.

## RESULTS

### 1. General data of the respondents

The data shows that 61.49% of the elderly are female. 57.42 % aged between 60-70 years. 47.97% have a marital status, 24.32% are single and .47.97% had secondary education, 26.35% had primary education, 41.89% are employee. 38.51% have monthly income from 10,000 to 15,000 baht. 35.81% have son or daughter as caregivers and supporters.

### 2. Stress Coping

#### 2.1 Confrontive coping

The result shows that the elderly used the most 3 types of confrontive coping as follow; item 1. Try to find information to understand the problem ( $\bar{x} = 2.63$  SD = 0.48), item 4. Understand the problem clearly in all aspect ( $\bar{x} = 2.62$  SD = 0.51) and item 2. Control the situation or the cause of the problem. ( $\bar{x} = 2.60$  SD = 0.49). While the 3 least expressions confrontive coping were: item 8. Do activities or exercises to reduce stress. ( $\bar{x} = 2.25$  SD = 0.71), item 10. Ask for help from family or friends. ( $\bar{x} = 2.30$  SD = 0.66) and item 9. Consult with a trusted or experienced person. ( $\bar{x} = 2.32$  SD = 0.64)

#### 2.2 Emotive coping

The result shows that the elderly used the following top 3 of emotive coping were : item 10. Isolate alone ( $\bar{x} = 2.12$  SD = 0.86), item 8. give reason that your thinking are correct ( $\bar{x} = 2.11$  SD = 0.69) , item 1. Anxious expression ( $\bar{x} = 1.89$  SD = 0.62). While the 3 least expressions of emotive coping were item 6 Throwing things ( $\bar{x} = 1.38$  SD = 0.57), item 2 Angry expression ( $\bar{x} = 1.47$  SD = 0.58) item 7. Violent behavior with another person ( $\bar{x} = 1.48$  SD = 0.65)

#### 2.3 Palliative coping

The results shows that the elderly used the following top 3 of Palliative coping were item 1 Accept the situation of problems item ( $\bar{x} = 2.74$  SD = 0.44), item 10. chanting and depend on the sacred ( $\bar{x} = 2.63$  SD = 0.62), item 2 Look for something better to compensate ( $\bar{x} = 2.61$  SD = 0.55) While the 3 least expressions of Palliative coping were item 5 Do not do anything because it is a matter of fate. ( $\bar{x} = 2.01$  SD = 0.63) item 8. go to Sleep by thinking that problems will improve in the morning. ( $\bar{x} = 2.21$  SD = 0.65) item 6. Let the problems go on, it can not be changed. ( $\bar{x} = 2.22$  SD = 0.68)

## DISCUSSION AND FUTURE WORK

The result of this research found that the elderly used the 3 styles of coping together and used confrontive coping more than emotion coping and palliative coping. effective adaptation requires proper three styles of stress. People who adapt well will need to know the situation which consistence between demand and resources. They know how to choose the right way to deal with stress and use proper coping styles to confront problems. Person who manage stress with feelings, it is not good for themselves. (Lazarus & Folkman, 1983). People who use palliative coping, it does not solve the causes of problem. People who use confrontive coping, the problem will be solved appropriately.

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# PERCEPTION OF SELF EFFICACY AND DELIVERY SKILLS OF NURSING STUDENTS

**Assist. Prof. Oranuch Chaopreecha**

*Faculty of Nursing and Health, SuanSunandhaRajabhat University, Bangkok, Thailand,  
E-mail: oranuch.ch@ssru.ac.th*

## ABSTRACT

The purpose of this study is to study the self-efficacy and delivery skills of nursing students after delivery practice in Maternal and Newborn Nursing & Midwifery Practicum 1. The population and sample are 60 nursing students in year 3. The research Instruments are the questionnaires of self-competence in the practice of the delivery and the questionnaires of opinions about the capability of the delivery skills. Data was collected from nursing students who had practiced delivery procedures at hospitals and had truthfully answered the questions in the questionnaire; the investigation shows that.

1. the highest mean score of self-efficacy in the practice of the delivery competence the score of nursing students is the confidence of improving the delivery knowledge and skills increasing ( $\bar{X} = 3.68$  SD = .69) on the other hand the lowest mean score of self-efficacy in the practice of the delivery is the confidence of being able to solve any problems during the delivery process ( $\bar{X} = 2.75$  SD = .70)
2. the highest mean score of opinions about the capability of the delivery skills questionnaires is getting ready for delivery procedure of nursing student ( $\bar{X} = 3.89$  SD = .38) on the other hand the lowest mean score is the delivery for the new born baby's head ( $\bar{X} = 2.69$  SD = .41) however the part of cutting and stitching the perineum wound has no score.

**Keywords:** Self-efficacy, Delivery, skills

## INTRODUCTION

Suan Sunandha Rajabhat University has provided a Bachelor of Nursing Science Program which teaches both Theory and practice in order to produce nurses who understand the theory and have the necessary practical skills and confidence required to successfully undertake the maternity delivery procedure. The practice that has been provided is very important for the nursing profession because the nursing students need the theory and the skills for the reasonable use of the nursing practicum in the simulated situations, that means that the practice in a simulated situation is crucial for a nursing science program.

According to the nursing students' they found that practicing situations in the clinical practice laboratory, led to the nursing students having more pressure and stress on practicing than on the theory. A study by, Becker & Neuwirth,(2002); Shipton,(2002) said that when having to undertake practice sessions, especially where someone has never had experience in such a session before it will cause more pressure and stress, so in our practical nursing courses we train the students to be ready for real situations by providing the practice before going to the clinical practicing laboratory.

the labour and delivery unit is one of the Bachelor of Nursing Science Programs which is planning on giving the nursing students practical experience in the labour and delivery unit. The students have to practice on taking care of pregnant women and the new born babies. The delivery is an especially high skill for nursing students to master so training in that area is essential as it needs competence in nursing skills that are way above basic nursing skills; the skills needed are the ability of analyse , the ability to make decisions on methods needed to solve sudden problems that may occur during the labour process.

The Faculty of Nursing and Health, SuanSunandhaRajabhat University has provided a specific delivery practice unit in the labour and delivery unit for Maternal and Newborn Nursing & Midwifery

Practicum 1. The Faculty of Nursing and Health has prepared the nursing students to be ready before delivery practice and also to manage the practice timetable for 7-8 days continuously in order to giving the nursing students experiences of taking care of mothers and new born babies. Continual practice will give the nursing students more confidence on taking care of mothers and new born babies. It was this reason of increasing the confidence and the efficacy in skills needed which inspired the researcher to investigate on self-efficacy in the practice of the delivery of nursing students' skills who have experiences of delivery skills in Maternal and Newborn Nursing & Midwifery Practicum 1.

The purposes of the study

1. To investigate the self-efficacy and delivery skills of nursing students.
2. To investigate the opinions about the capability of the delivery skills

## METHODOLOGY

This is survey research to study the knowledge and abilities of deliveries undertaken by the nursing students themselves and the opinion of the nursing students regarding the practical delivery ability of nursing students.

Population and sample: 60 students in the Bachelor of Nursing Science Program year 3 of students who have been practicing in the labour and delivery unit in the 2<sup>nd</sup> semester of the academic year 2017. The sample was chosen by Purposive sampling. The students who have enrolled in Maternal and Newborn Nursing & Midwifery Practicum 1 and have been practicing in the labour and delivery unit for 7-8 days.

Research Instrument

1. The first unit is a questionnaires of comprising 10 questions relating to self-efficacy in the practice of the delivery of nursing students. I, the researcher have created the questionnaires myself by studying books and literature that relates to this study. These questionnaires are designed to use the Likert scale for the measurement and Evaluation of the answers which is graded into a 5 numerical rating scale.
2. The second unit of questionnaires are used for asking for opinions about the capability of the delivery skills of nursing students. I, the researcher have created the questionnaires myself by studying from books and literature that relates to the delivery procedure. The questionnaires are concerned with 10 aspects and each aspect consists of 5 questionnaires. These questionnaires use the Likert scale for the measurement and Evaluation which is graded in to a 5 numerical rating scale.

Quality check on research data collecting tools

1. Both units of the questionnaires have been checked for the content validity by 2 professionals who have been teaching the Nursing Science Program and these questionnaires have been corrected following the advice of the professionals.
2. The researcher has piloted these questionnaires with 30 year 4 nursing students in order to check reliability, by using Cronbach's alpha coefficient and has found that the reliability of self-competence in the practice of the delivery questionnaires of nursing students is 0.74 and the reliability of opinions about the capability of the delivery skills questionnaires of nursing students is 0.82

Data collection

Collecting the data by informing the students of the purpose of the study on the date that introduced the course, also by asking for volunteers to give their opinions of self-competence in the practice of the delivery and opinions about the capability of the delivery skills, also asking the students to sign an agreement form giving their consent of joining in this research after the students have had experience of delivery practice from where they will be trained, the students will answer the questionnaires honestly.

## RESULTS

Section 1 General Information 60 nursing students: divided into females 86.9 % and males 13.1%, Number of students and the place of delivery practice: 30 students at Queen Savang Vadhana Memorial Hospital, 12 students at Rajavithi Hospital, 18 students at Kratum Baen Hospital. 45% of students had had 1 experience of practice in the labour and delivery unit, 55% of students had had 2 experiences of practicing in the labour and delivery unit.

Section 2 the self-competence in the practice of the delivery score of nursing students. According to the data analysis of self-competence in the practice of the delivery score of nursing students after the experience of delivery practice as shown in Table 1.

**Table 1**

The mean and the standard deviation of self-competence in the practice of the delivery score of nursing students after their experience of delivery practice

NUMBER	DETAIL	SCORE	
		$\bar{X}$	SD
1	I am confident to say that I have the knowledge and understanding in both the theory and the practice of delivery.	3.12	.72
2	I am confident to say that I have the ability to use the knowledge of delivery correctly.	3.25	.67
3	I am confident to say that If I operate in delivery next time, I will have better control of my excitement.	3.25	.73
4	I am confident to say that If I operate in delivery next time, I will be able to follow every order of the delivery process step by step.	3.05	.83
5	I am confident to say that in future operation of delivery I will be able to make decisions on the delivery procedure myself.	2.80	.84
6	I am confident to say that I will be able to evaluate and analyze the mothers' problems for future procedures regarding delivery.	2.83	.77
7	I am confident to say that if there are any problems that happen during the delivery, I will be able to solve them.	2.75	.70
8	I am confident to say that I have improved my delivery knowledge and skills.	3.68	.69
9	I am confident to say that I can manage to complete the delivery process even if I don't like it.	3.25	.70
10	I am confident to say that I am able to summarize and present a case study of the delivery to classmates and lecturers	2.97	.78

Table 1 shows that the highest mean score of self-competence in the practice of the delivery score of nursing students is the confidence of improving the delivery knowledge and skills increasing ( $x = 3.68$   $SD = .69$ ) on the other hand the lowest mean score of self-competence in the practice of the delivery is the confidence of being able to solve any problems during the delivery process ( $x = 2.75$   $SD = .70$ )

Section 3 the opinion on the nursing students' ability of delivery practicing  
After analyzing the collected data of the opinion of delivery practicing ability of nursing students after gaining delivery experience as shown in table 2.

**Table 2**

The highest mean score of opinions about the capability of the delivery skills

NUMBER	DETAIL	score	
		$\bar{X}$	SD
1	Getting the pregnant mother ready for the delivery procedure	3.73	.40
2	Getting nursing student ready for the delivery procedure	3.89	.38
3	Preparing the mother's birth area ready for the delivery procedure	3.73	.35
4	Preparing the maternity cover and maternity wear for the mother	3.80	.29
5	Cutting and stitching the perineum wound	0	0
6	Safe perineum	2.69	.41
7	Post-delivery assistance for the new born baby's head	3.28	.41
8	Assistance with the new born shoulder and body delivery	3.22	.60
9	Care needed for cord cutting	3.70	.39
10	Instruction regarding placenta delivery	3.51	.38

Table 2 shows that the highest mean score of opinions about the capability of the delivery skills questionnaires is getting ready for delivery procedure of nursing student ( $x = 3.89$   $SD = .38$ ) on the other hand the lowest mean score is the delivery for the new born baby's head ( $x = 2.69$   $SD = .41$ ) however the part of cutting and stitching the perineum wound has no score.

### CONCLUSION AND FUTURE WORK

According to the study of self-competence in the practice of the delivery after delivery practicing found that the nursing students are quite confident on the knowledge and the ability of deliveries because most of the students have been trained to be ready before practicing and trained at the nursing internship for 7-8 days. 45% of the nursing students have 1 delivery case experience and 55% have 2 delivery case experiences which conforms to Bandura(1977) idea about perceived self - efficacy, which said that anyone who has performed anything that relates to their knowledge and ability. The knowledge and ability become part of the thinking process which gives people self-confidence of doing things and they will perform and behave in order to manage to reach their target. So knowledge and ability have an impact on performing. This study focuses on studying self-knowledge and ability on delivery which shows the understanding of nursing students' abilities or self-confidence on delivery performance as expected and intention of being able to finish the delivery. Our department has provided a practical section. This section trains the nursing students to be ready for delivery by demonstrating the delivery process to them also it has been providing the delivery practice at hospitals which gives the nursing students self- confidence to perform in the delivery procedure. The ability of solving problems during the delivery procedure score is quite low but the nursing students have only had 1 or 2 experiences of delivery practice.

Moreover the study of the opinion about the ability on delivery practice of the nursing students after having had delivery experiences, found that the score of getting the pregnant mother ready for the delivery procedure has the highest mean score that means every student prepares and gets ready before performing in delivery procedure. Most of students have been trained to be ready for dressing up, putting on gloves, cleaning the pregnant mother and preparing the maternity cover and maternity wear by the instructor in the labour and delivery unit, 56.40 percentage have practiced with friends, 13.34 percentage self- practicing, 32.45 have practiced at the labour and delivery unit where they have been trained, which makes the opinion of getting the pregnant mother ready for the delivery procedure to have the highest mean score by providing the simulated situation of labour and delivery unit. This allows the nursing students to be able to practice as the study of Supparat Jamjanget, which found that the preparation of getting ready for nursing performance in the simulated situation helps students have a better understanding and have the ability for nursing performance. On the

contrary the delivery assistance for the new born baby's head has the lowest mean score because few simulated situations were provided and also because of the different conditions of pregnant mothers.

### **SUGGESTIONS**

1. A study needs to be made of the comparison between self-competence in the practice of delivery and the opinions about the capability of the delivery skills of nursing students that have different delivery experiences.
2. A study is needed to provide the simulated situation of labour and delivery unit for nursing students' delivery practice.
3. A study is needed to gain the opinion of delivery skills from the aspect of the instructors and the advisors

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# THE RESULTS OF USING MIXED LESSONS OF FOLK SONGS FOR NURSE STUDENTS IN NURSING CARE OF WOMEN DURING CHILDBIRTH

**Boonsri Kittichottipanich\* & Sumitta Swangtook\*\***

\* *Instructor of Nursing and Health College, Suan Sunandha Rajabhat University, Thailand*

\*\* *Instructor of Kuakaroon Nursing Faculty, Nawamintrathiraj University, Thailand*

*E-mail: \*boonsri.ki@ssru.ac.th, \*\*sawangtook@gmail.com*

## ABSTRACT

This research is a quasi-experimental research to study the results of knowledge enhancement and understanding of nurse students for women during labor and childbirth nursing by using traditional music lessons. The knowledge and emotions and feelings of students after listening to the lessons of folk songs were measured. The sample consisted of the third year of nursing students, academic year 2560, Nursing and Health college, Suan Sunandha Rajabhat University. A total of 49 purposive sampling from volunteer nurse students. Data collected from 1 February 2016 to 31 March 2560 for two months. The instruments used in this research were 1) mixed lessons with folk songs. 2) Knowledge of pre-listening and post-listening test. 3) Emotional and feeling recording after listening to the lesson. There are two parts to analyzing the data: Part 1: comparing knowledge before and after listening by using pair t-test as statistical tests. Part 2 for qualitative data analysis by using content analysis, which focuses on interpretation, generates conclusions from the record, reflecting the emotions of students after listening to folk song lessons. The results of the study revealed that the knowledge after listening to the folk songs was significantly higher than the pre-listening level at  $P < 0.01$ . By qualitative data analysis from the student's emotional and feeling notes, after listening to the folk song lessons showed that students' knowledge gained of the content of delivery nursing in each stage of labor: stage 1, stage 2, stage 3 and stage 4 of childbirth. Consideration the ordering of priority by the benefits and content of the student that gained up, the first step was to gain knowledge and understanding of the content and the melody of the song and followed by number 2. Have fun in learning and relax. 3. Know that the folk music is melodious. 4. The introduction to the lesson is interesting in the first song, starting with the basic knowledge in the delivery. 5. Lessons are sorted, sorted, easy to understand. 6. Lessons for music it is easy to listen, easy to carry, easy to listen to. 7. Lessons are summarized in each section appropriately. 8. The use of language can be meaningful.

The results of this study, in addition to showed according to the objectives of this study. It was important that the student was impressed with the poem in lesson. It is suitable for education in the era of Thailand 4.0 and Z generation because it is ready to use media. In addition to academic knowledge, it has instilled students into the people who love to learn virtue and love values in Thai culture along together. The advantage of this study is that the folk music lessons are academic and entertaining and cultural, can be used as a guide to the application of multimedia to use in teaching other topics suitable for the next generation Z.

**Keywords:** childbirth nursing care, Nursing during Delivery, Nursing lessons with Folk music, Nursing students

## INTRODUCTION

Learning and teaching problems in obstetrics nursing revealed that teaching methods are very important to design teaching to suit students. Although teachers have a good knowledge of the content and try to choose the teaching method in accordance with the content and ability of students. Teacher try to choose the easy way to get the students to the idea quickly and remember to use.

At present, obstetrics is one of the problems with teaching. Students have difficulty understanding due to the nature of obstetric nursing, especially in labor, the content is rather difficult and abstract, so that student must be creating an imaginary. The ordinary Obstetrics consisted of the vocabulary that students were

not familiar before. The students will have stress from being misunderstood there for the teaching of obstetrics must change from abstract to tangible and seeking the method that increase understanding and must be tailored for generation Z nursing students. The unique perspectives of generation Z student which based on life experiences that influence career decision making. (Smith-Trudeau P., 2016) [1] Generation Z characterized by loyalty, want to find a solution, and know what goals to look for, have a short attention, be impatient, learn with a mobile phone or other tablet device that provides connectivity to the Internet and information for accessing online content. They need to learn independently, initiative and in accordance with their own pace, do not like teaching as a lecture. (Hampton, D, and Keys, Y., 2017)[2].

Barley S. (2016) [3 suggests that hybrid models are associated with the integration of classroom learning experiences across the Internet and the traditional mix to enhance the benefits of technology and the Internet to generation Z students. They learned by using concrete which can be seen and seen with the eyes and then leads to the conclusion. Teaching methods should be based on new ideas. (Barley S., 2016) [3].

In 21<sup>st</sup> Century, Thai students must maintain a good culture of Thailand with the skill by focusing on critical thinking skills so that teaching needs to be substantial in many ways. It is also equipped with modern learning tools and the course contents will change according to the knowledge in the modern world with the important learning and deep learning that will lead to innovation in the end. [4] (Chandra Thepcharoen, 2560)

This research aims to use the lessons mixed of Thai folk song with content of delivery nursing composition of the subject for reviewing nursing knowledge in childbirth and reduce stress with music. In order to improve the learning by listening lesson with music, promoting good mood, happiness with the subject to meet the university goal of well-being increase of using computer technology promoting learning which support to achieve learning objectives. That is the main of goal that learn happily and maintain Thai culture.

## **OBJECTIVES**

1. To study nursing knowledge in childbirth after listening to traditional music lessons.
2. To study the emotions of students after listening to traditional music lessons.

## **METHODOLOGY**

This research was Quasi-Experimental Research

Population consisted of 119 students in the third year of nursing student. Of 49 volunteers of the third years nursing students were the sample in this study. They enrolled in this study during 1 February, 2016 to 31 March, 2016 for 2 months to study the lessons with a mix of folk music.

Research instruments

The instruments used in this study were:

1. Lessons with a mix of folk music nursing care consisted of 5 folk song lessons.
2. Reflection recorded the feeling of the students before and after listening to the folk song lesson.

The researcher collected data in two parts.

Part 1: Childbirth nursing knowing before and after listening to the folk song lesson.

Part 2: Study of emotion and feeling of students before and after listening to the folk song lesson.

Data Analysis

Data analysis had the following steps.

1. Comparative knowledge score before and after listening to folk song lessons by using Pair t-test.



2. Qualitative data from the students' emotion and feeling recording before and after listening to folk song lessons by using content analysis.

## RESULTS

This research Quasi- Experimental Research " Knowledge enhancement. Understanding the nursing process in nursing students using the folk music lesson in teaching nursing students " in data analysis. Researchers have the following steps.

Part 1: Comparative knowledge score before and after listening to folk song lessons. Of 49 nursing students as a sample. The results showed that the mean knowledge scores of posttest evaluation were significantly higher than pretest and it was significantly different at  $P < 0.01$  as shown in Table 1.

**Table 1**  
Shows the results of the pre-test and post-listening test

Test	N	mean	SD	t	df	Sig(2-tailed)
<b>pre-listening test</b>	49	38.1	14.7	-5.22	48	.0001*
<b>post-listening test</b>	49	45.1	16.6			

\*\* Difference is significant at the 0.01 level ( $p < 0.01$ )

Part 2. Analysis of emotional and feeling reflection of students after listening to folk music lessons using qualitative data from the reflection recording before and after listening the 5 songs of the lesson.

### Reflection of feeling before listening

Nursing students reflect on their feelings. "Will I listen? I'm excited that the basic knowledge of maternity music will be released in the form. Feel that listening to music just a few minutes, then do the knowledge increase or real. It will attract us as well. The content may be difficulty understanding and content may be inconsistent, intend to listen to music. The original knowledge is confused because of the strict memorization, unlikely to understand the content but music listening, may be help me to remember the steps better. I wonder what the content will be, feel like listening that I have not heard the excitement to hear it. I want to learn more, make it easier to remember. There is something to be heard. Interested in the novelty of being a music composer. Expect to listen to music. Feel that I understand the song or think of the song. And what is the birth of the baby?"

### Reflection of feeling after listening

Nursing students reflect on the following feelings: "Easy to understand, although did not read the textbook before. The article on Normal Labor and the mechanism of childbirth in 8 steps to make it easier to remember. Get knowledge along with enjoyment, I have to listen to every day. Lyrics are more fun than reading only, arrange the correct mechanism that the mechanism before or after, can get the basic knowledge. Comprehensive review of the impressive mechanism of content compaction, listen and feel that it helps to remember easily, feeling interested in listening. I understand more and more comfortable listening. Listen and understand the memory of the textbook, if you listen more often, it will make more sense. If I listen often, it may help me to have a good exam. More knowledge with fun with interesting music, use it to memorize, can be stimulated to remember and can be used to sort the process well, birth of a baby from a baby's head, give birth to the baby. The music is interesting to think of, the mechanism of the birth of the child in order to hear more, get knowledge from listening without memorizing. The lyrics are after the listener, while thinking of the lyrics feel free to indulge in music and feel relaxed over reading. I feel easy to think according to the content each mechanism is described clearly concise content listen to easy to understand each word and get complete knowledge of the steps."

By ranking numbers of impression toward the folk song lesson of reflection, shown in Table 2: The first numbers of impression are benefit from lesson. The over all of reflection from record by nurse students. The results show that nurse students had gain knowledge and understanding of the academic content and the

melody of the song. The lessons are sorted, sorted, easy to understand, lessons are appropriate content in each episode and meaningful of language.

**Table 2**

The view of overall by ranking numbers of impression toward the folk song lessons of nursing students

<b>The View of Overall</b>	<b>Ordinal Numbers</b>
- Benefits from lesson that to get more knowledge and understanding of the academic content and the melody along together	1
-Have fun in learning and relax	2
- When listening, let's know that this folk lesson is melodious, not boring, easy to remember Have known that the folk lesson is melodious and, the academic content as a poem that is rhyming, not boring to use and easy to remember	3
- The introduction to the lesson is interesting in the first song, starting with the basic knowledge in the childbirth	4
- Contents were sorted, easy to difficult, easy to understood	5
- Content is consistent with learning goals	6
-Easy to listen, can be recorded in the mobile phone is ready to listen easily	7
- Lessons are finalized in each episode	8
-The use of language can be meaningful.	9

The results of the reflection on the music lessons in the delivery. Satisfied feel free to self-learning and joy of learning with in tone of music.

### **Suggestion from Nurse Students Reflection**

Nursing students reflect the following suggestions. "The English pronunciation is clear, should have a picture and video with accompanying text. It should be easy to understand and easy to use modern music, changing to the current genre, easy to sing and easy to remember, want to have more songs, it should be a simple listening song or a poem, let us sing every day, and ought to make more tone of sound. "

### **DISCUSSION AND CONCLUSION**

The results of the two main issues discussed in the discussion were as follows.

The first was that nursing students had more knowledge about nursing in the postpartum period after listening to the folk songs. The score from the test was higher than the pre-listening score, the composite lesson, the folk song and the difference at the significant level ( $P < 0.01$ ). Music and music are useful for promoting learning. Helps make difficult lessons easier. Memorize the content easily. [5],[6] (Siripat Jetsada Viroj 2007, Narong Kanjana 2009).

"I like the song, and the chorus is easy. It makes the content that is difficult to find it easy to learn. "

"It's a good lesson with folk music."

"Before I thought that would be possible. The difficult lessons become to be a soft song and described of women during child birth."

"When I remember the lyrics that will increase understanding."

From Adolphs and Schmitt (2003) [7] found that the use of rhyming words helped to improve memory. It concludes that the teaching of mixed music, low frequency increased recognition and understanding of academic vocabulary. As the results of the study of Arleo (2000) [8] and Kao & Oxford (2014) [9] shown that songs and poems are useful for verbal learning and summarize the relevant patterns of

human memory associated with thinking, music and poetry related to the memory and conclude as a musical memory.

From the results of students have increased knowledge after listening to music lessons ended, and feel comfortable to music lessons, relaxing and knowledge gaining when repeated listening, resulting in learning together with the good mood because the rhythm of the music is slow tempo. The emphasizing the words in the song will help students to be able to remember the song and poetry has increased, according to Purnell-Webb and Speelman (2008) [10] and the study of Baddeley (2000) [11] described the processing of sentences that occur when more information about the structure. Ludke (2010) [12] conducted a quasi-experimental study with two classrooms. The learners started learning French in early Scottish, over four weeks each class receives sixty-five lessons from the lessons that are inserted into music related to the song. Music lessons that results in recognition and understanding with "learning to listen and repeat". (Anton, 1990) [13]. The feeling was repeated by the songs which combined in this lesson that will result in enthusiastic learners. The study of Arleo (2000) [8] and Kao & Oxford (2014) [9] found that the pop music can promoted language learning and vocabulary were better after using music in the classroom. From the result of this study found that what actually happened to the students were "Repeat the request. I like the song better and better. Make sure to remember the content that is difficult to feel that easy to learn. There are lessons that are different from other songs. It is a song that should be preserved and valued. A lesson in music to encourage more learning. " " Get knowledge along with enjoyment " represents the song helps to remember the key words in the lesson. The results of this study are in line with the study of Aquil, 2012[14]; Kerekes, 2015[15] Abbott, 2002[16] by learning vocabulary refers to acquiring, combining and enhancing vocabulary, including the knowledge of multiple word units. While teachers use music for a variety of teaching purposes, repeated requests are useful for teaching and learning vocabulary, include phrases and expressions that are longer so that the song is a memorable resulted. It is well understood that it is useful for memorizing words, due to conclude. Pronunciation song high and low frequency vocabulary in the song and by the frequency of this word makes a memory. According to a study by Adolphs and Schmitt (2003) [7] and Baddeley's study, Alan D. (2000) [11] emphasized that typing and word processing can be linked and help in remembering well from the rhythm and also the rate of speech. Kilgour, Jakobson and Cuddy (2000) [17] found that this was an important variable, resulting in easier vocabulary recognition. In addition, Kilgour and colleagues [17] the memory effect was higher, especially only when the lyrics are presented at a slower pace than speech and the participants in the singing also get higher results. Rhythm of music affects memory, easy to remember. The results of this study suggest that the perception of the students' feeling towards the music of this song is significant. The first benefit is to gain knowledge and understanding of the content and the melody of the song. According to what the students reflect on the content and the benefits, relax from music lessons.

## CONCLUSION

The study reflected the importance of this folk song lesson makes it easy for students to learn the difficulty content that exceeds expectations. Students get impressed with poetry. It is suitable for promoting education in Thailand that emphasizes on providing academic knowledge together to create students who love learning, morality and love in Thai culture, coupled with getting knowledge.

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# THE DEVELOPMENT OF DELIVERY PRACTICE INSTRUMENT AND ACTUALLY DELIVERY LEARNING OUTCOMES IN THE NURSING STUDENTS

**Asst. Prof. Dr. Sudpranorm Smuntavekin**

*Faculty of Nursing and Health, Suan Sunandha Rajabhat University, Bangkok, Thailand,  
E-Mail: sudpranorm.sm@ssru.ac.th*

## ABSTRACT

This research aimed to develop the delivery practice instrument and actually delivery practice learning outcomes in the nursing students. A mixed methods design was employed and divided into 2 phases. In phase 1: To develop delivery practice instrument by using both literature reviews and expert observed. Then the delivery practice instrument was developed to questionnaire and investigated by the content validity with IOC .840, internal consistency reliability coefficients .849. For phase II: Using the questionnaire to survey the actually delivery practice learning outcomes of 120 nursing students from public university and college of Thai nursing institutes. The major findings could be concluded as follows: 1) The delivery practice instrument consisted of 10 factors 50 items that guide the nursing students to practice step by step. 2) The actually nursing students' delivery practice learning outcomes had only 8 factors with high score and 2 factors with low score. Suggestion that the delivery practicum training should provide available times to more practice and determine more experience.

**Keywords:** delivery practice instrument, student nurses

## INTRODUCTION

In nursing and midwifery education, the nursing student perceived that the delivery practice has become challenged to learn. (Burn & Peterson, 2005). But they had to be stressful, scary and exiting with the urgent situations and complex skills that risk to pregnant mother health and child' life. They might forgot the delivery skills and couldn't perform correctly steps (Suwannobol & Suwachan, 2012). that affected their learning ability. Although literature found that students who take part in a clinical simulation developing their self-efficacy (Jeffries & Rizzolo, 2006), Suggestion that the good performance testing should be demonstrate the student' skill or psychomotor learning behavior (Wongvanich 2007). But the evaluation instrument for delivery practice effective delivery tool has still not enough. Researcher believed that the delivery psychomotor testing possibility to improve the nursing student delivery practice skills. But limited of studied showed how the student' nurse improving their learning skill process and outcomes. If there is an effective delivery tool for the nursing students to review and check themselves, probably improve their performance and learning outcome. Researcher expect to develop an delivery practice instrument as a checklist providing more learning behavior' information as a mirror reflexion and use to measure their actually delivery learning outcomes.

## OBJECTIVE

1. To develop the delivery practice instrument for nursing student.
2. To study the actually delivery outcomes by using delivery practice instrument.

## METHODOLOGY

*Study design, Data collection and Analysis.*

This study was mixed methods design which combines qualitative and quantitative research techniques that can be divided into 2 phase as follow:

**Phase I:** To develop the indicators of delivery practice instrument.

1) Literature reviews with delivery concepts and procedures which were safe for the mother with child bearing. The researcher extracted to delivery items lists and recheck by 3 midwifery experts.

2) Develop the questionnaires with 10 indicators, each indicator consisted of 5 delivery steps/ Items which 4 Likert's scale.

3) To investigate the quality of questionnaires in relevance content and context approximately by 3 expert panel midwifery instructors at 3 nursing institutes that was .840. Then internal consistency examine by 25 nursing students that was 0.849

**Table 1**

Example blueprint of 1 the delivery practice' indicator.

Indicators	Items	Item' lists
6. Neonatal head' deliver.	5	1. Coaching and encourage to pushing while uterine contraction and pushing again for descend with head seen about 5 cm.
		2. Control of Fetal head with slowly extend by gentle touch at occiput for preventing of anterior vaginal canal
		3. The other hand control and save of perineal tear
		4. Support perineum and extending fetal head with slow an gentle
		5.Support the fetal head and chin with complete delivery

**Phase II:** To survey study the actually delivery learning outcomes by using the delivery practice instrument

Study design: Descriptive survey research.

Samples

The sample were 120 nursing student from private university and college of nursing. who enroll in Maternal – child and Midwifery II and complete the delivery practice skills.

Data collection: After finishing the course, questionnaires survey for learning ability/outcomes of 120 nursing students.

Statistical Analysis:for statistical analyzed by SPSS version 22.

## RESULTS

Descriptive statistics

Of the total 120 nursing students who contributed in this study showed the ability' background (table 1). The average theory grade was  $2.79 \pm .801$ , the average practical grade was  $2.65 \pm .840$  and the number of case was  $2.12 \pm .332$ .

**Table 1**  
Backgroud of respondents. (N= 120)

Variables	Mean	SD	Max	Min	Skewness	Kurtosis
Theory grade	2.79	.801	4	2	.198	.528
Practical grade	2.65	.840	4	2	.048	.200
Number of delivery cases	2.12	.332	3	2	2.297	3.330

The delivery practice instrument consist of 10 steps and each step with 5 items. The nursing student learning ability of delivery outcomes were 8 factors with high score as follow: 1) External genitalia cleaning 2) Cord cutting & care 3) Nurse preparation 4) Delivery sheaths daving 5) Placenta delivery 6) Postdelivery neonatal assisting 7) Maternal preparation 8) Delivery of Neonatal shoulder & body. They can do 8 steps undersupervised with their instructors or preceptors. Only 2 factors with low score 1) Neonatal head' deliver and 2) Perineum cutting & repaired that due to difficult to do and risk to the mother and child which need to more training. (table 2)

**Table 2**  
Delivery skill indicators/ factors

Variables	Mean	SD	Min	Max	Sk	Ku
<b>1. Delivery Skills</b>	<b>32.170</b>	1.06	29.20	34.00	-.390	-.577
1.1 Maternal preparation	3.447	.27	2.60	4.00	-.10	-.12
1.2 Nurse preparation	3.868	.19	3.00	4.00	-1.81	7.08
1.3 External genitalia cleaning	3.933	.15	3.20	4.00	-2.63	-.987
1.4 Delivery sheaths daving	3.853	.24	3.00	4.00	-1.75	2.20
1.5 Perineum cutting & repaird	1.008	.04	1.00	1.20	4.64	19.91
1.6 Neonatal head' deliver.	1.247	.49	1.00	3.80	4.04	21.98
1.7 Postdelivery neonatal assisting	3.675	.32	3.00	4.00	-.379	-1.27
1.8 Delivery of Neonatal shoulder & body	3.445	.33	2.60	4.00	-.878	.154
1.9 Cord cutting & care	3.923	.09	3.80	4.00	-.598	-1.67
1.10 Placenta delivery	3.798	.21	3.20	4.80	-.980	-.52

### CONCLUSION AND FUTURE WORK

According to this finding, The Delivery practice instrument for student' nurses consist of 10 factors and 50 items. The using delivery practice instrument showed the nursing students' delivery practice outcomes. There were 8 factors with high score. All 8 factors were basic steps that not threatened to mother and child and slowly to do. But only 2 factors they had the low score due to difficult and unsafe for the mother and child. This 2 factors were advanced for midwifery and need to training further and getting more experience.

A limitation of this study were 1) The developing delivery practice instrument need to study in various contexts which consisted of difference delivery skills and need more samples to statistical analyzed by constructed validity (factor anal confirmatory factor analysis) for the instrument quality. 2) The nursing student delivery practice learning outcomes need to continuous training and get more learning exoerience.

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# ELDERLY HEALTH BEHAVIOR IN THE COMMUNITY, BANGKOK, THAILAND

**Anchalee Jantapo**

*College of Nursing and Health, Suan Sunandha Rajabhat University, Bangkok, Thailand*

*E-mail: Anchalee.ja@ssru.ac.th*

## ABSTRACT

This research aims to study the health behavior of the elderly in food consumption, exercise and emotional management. The sample was 50 elderly people of one Elderly Club in Bangkok, Thailand. The research instrument was a set of questionnaire developing by the researcher on the concept of health promotion in the aspect of food, exercise and emotion. The questionnaire is a 5-level valuation scale. Analyze data using computer program., with a percentage. average score and standard deviation. The result found that most of the samples were female between 60 and 70 years of age. BMI between 25.0 - 29.9. Most of them use gold cards for medical treatment. Most had high blood pressure and hyperlipidemia, followed by high blood pressure and diabetes. Dietary habits found that most of them always have the 5 food groups, cooked food and 3 meals with fruits and vegetable, seldom drink alcohol and smoke Most do exercise regularly, have a warm body before exercise, exercise at least 30 minutes 3 days a week. For the emotional management, most had less stress, stress relief by prayer, friends and family activities. Most of them can control emotions when angry.

**Keywords** - elderly, health behavior, elderly health behavior

## INTRODUCTION

Thailand's population structure has changed rapidly in the last 3-4 decades. The number of elderly people has increased which leads the country to ageing society. In 2000-2001, more than 10 percent of Thai population is 60 years old. From the Thai population projection, 2015 to 2030, Thailand will be in "ageing society" condition which is the situation that the country has elderly people who are 60 years old or older more than 10 percent compared to population in other age ranges in the same area. In the next 10 years, the country will become completed ageing society which more than 20 percent of population is elderly people who are 60 years old or older. The country is expected to be super ageing society in less than 20 years when elderly people are more than 28 percent. (1)

The elderly are considered being a vulnerable group. Their bodies gradually deteriorate and have both physical and mental changes such as having dry skin, slower response to stimulus, degenerative eyesight, poor nervous system, fragile bones, poor muscle strength, and having degenerating organs. (2) From the nationwide elderly health survey (3), the result showed that many of the elderly have suffered from high blood pressure, insomnia, muscle and joint pain, frozen shoulder, dizziness, limb muscle weakness, and other diseases. The illness of the elderly is related to behavior. Therefore, the study of elderly health behavior is necessary for getting data as a guideline to promote good health in the elderly.

## OBJECTIVES

To study health behavior of the elderly in food habits, exercise behavior, stress and stress management.

## LITERATURE & THEORY

This research has reviewed the concept that relates to health behavior of the elderly in food consumption, exercise, stress and stress management of the older people and present concisely as follows;

### 1. Situation of the elderly in Thailand

Nowadays, Thailand is an ageing society with its population that has increased rapidly since 2000 when the proportion of the elderly (60 years or older) reaches 10 percent of the country's population and the country will become "completed ageing society" when percentage of the elderly population reaches 20 in



2021. Moreover, the country is expected to be a super ageing society in less than 20 years when percentage of the elderly population is 28 percent of the country's population. (4) Now that the elderly have some changes in both physiological and mental health resulting from degenerating systems in their bodies, promotion of exercise is necessary. One of the proper activities is exercise promotion for good health in the elderly.

## 2. Health behavior of the elderly

The Government's policy is to focus on taking care of the elderly's health by imposing strategy about building strength and emphasizing participation of local, community, and related sectors. One of the important things is to encourage the elderly to have a good health, to slow down ageing, and to live their routine lives on their own. (5). World Health Organization (6) has mentioned three elements to improve an active ageing in the elderly which are 1) being healthy ageing. 2) having security in life. 3) having participation. Healthy ageing means having good physical and mental health in these following aspects; eating clean and proper 5 food groups, drinking pure water, avoiding strong-flavoured food, smoking, and alcohol, having regular exercise, having adequate sleep which is 7-8 hours a night, and practicing mind to embrace reality in life (3). Moreover, healthy ageing includes being responsible for one's health and having health checked regularly. Another element is having security in life which covers economic security, saving for living, accommodation, and health insurance. The third element is having participation which means taking part in social activities, having relationship with family or community, and being a member of favorite organization. This research is the study of related research about health behavior in the elderly.

This study investigated the elderly health behavior in the elderly club in Bangkok, study health behavior in three aspects: food, exercise, and stress management.

## METHODOLOGY

### 1. Research Method

This research is quantitative research. Sample was 50 elderly people in the elderly club in Bangkok.

### 2. Research Instrument

The instrument used in this research is a set of questionnaire which was created in accordance with research purposes. The research instruments are composed of 2 Parts ; Part 1: the general information of the respondents, Part 2: health behaviors in the aspect of food, exercise and stress management. It is a rating scale questionnaire with In 3 levels; often practice, practice in sometimes and not often practice.

### 3. Data collection

The researchers collected data by themselves in April- July, 2017.

### 4. Sample Protocols

The researchers take into account the rights of the sample by explaining the purpose of the research, research process, the duration of the research and clarify the right to accept or decline participation in this research. The presentation of the information will be presented as a whole, no name and surname of sample present in the research paper.

### 5. Data analysis

Data were analyzed using computerized data analysis program. Statistics used in data analysis consisted of frequency and percentage statistics.

## RESULTS

### 1. General data of the respondents

The data show that 74.00% of the elderly are female, 56.00% aged between 60-70 years, 22.00% aged between 71 and 80 years and 8.00% over 80 years old. 38.00% had a BMI between 25-29.9, which was over nutrition. 18.00% ,the BMI is between 18.5 and 22.9, which had an appropriate body. 46.00% has a marital status, 22.00% are single and 20.00% are married. 48.00% had primary education, 48% had secondary education. 44.00% have monthly income from 1,000 to 5,000 baht, 28.00% have monthly income between 5,001 to 10,000 baht. 54.00% t have the right to treatment from the gold card. 32.00% have the right to treatment from government. 20.00% of respondents has high blood pressure and high blood lipids and 14.00% is diabetic.

### 2. Food habits of the elderly.

It was found that 76.00% of elderly had 3 meals a day. 68.00 % have the 5 food groups. 76.00 % eat fruits and vegetables regularly. 80.00% eat cooked food on a regular basis. Only 4.00% eat sweet food, 6% eat high fat food and 6 % eat salty food . 96.00 % drink alcoholic beverages and smoke rarely. The data were shown in Table 1

**Table 1**  
Number and percentage general information of the respondents.

Dietary habits of the elderly	Often Practice		Practice in sometimes		Not often Practice	
	frequency	percent	frequency	percent	frequency	percent
1. have 3 meals a day	38	76.00	10	20.00	2	4.00
2. have the 5 food groups	34	68.00	13	26.00	3	6.00
3. eat fruits and vegetables regularly	38	76.00	10	26.00	2	4.00
4. eat cooked food	40	80.00	7	14.00	3	6.00
5. eat a sweet food regularly	2	4.00	12	24.00	36	72.00
6. eat high fat food	3	6.00	10	20.00	37	74.00
7. eat salty food	3	6.00	10	20.00	37	74.00
8. Drink alcohol	1	2.00	-	-	49	96.00
9. Smoking	-	-	2	4.00	48	96.00

### 3. Exercise behavior of the elderly.

Analysis of exercise behavior of the elderly found that 50.00 % of the respondents do exercise regularly. 42 % allocated time for exercise. 42.00 % warmed body before exercise. 64.00 % likes to exercise for health promotion. 52.00% do exercise at least 30 minutes in a day and 3 days a week. The data were shown in table 2

**Table 2**  
number and percentage of older people classify by practice in exercise

Practice in Exercise	Often Practice		Practice in sometimes		Not often Practice	
	frequency	percent	frequency	frequency	percent	frequency
1. do exercise regularly	25	50.00	10	20.00	15	30.00
2. Exercise time is allocated.	21	42.00	10	20.00	19	38.00
3. warm body before exercise.	24	48.00	11	22.00	5	10.00
4. like to exercise for health.	32	64.00	13	26.00	5	10.00
5. Exercise at least 30 minutes a day, 3 days a week.	26	52.00	11	22.00	13	26.00

### 4. Stress and stress management of the elderly.

From the assessment of the perception of the elderly. It was found that 50.00% of the elderly had less stress, followed by 14% with moderate stress. In the relaxation of the stress of the elderly, 60.00% relaxed by the way of praying. 64.00% by talking to friends. And 70.00% by sharing family activities.

## CONCLUSION AND FUTURE WORK

1. Based on general data of the elderly, 38% of the elderly had BMI between 25 and 29.9, which is overweight. This research is consistent with the research conducted by Soraya Kaewpitol and Nuttawut Kaewpitol (7), which found that 15.37%. of the 400 elderly have a nutritional status exceeding. This finding reflects that it is necessary to provide health promotion in food and exercise that is appropriate for the elderly. Therefore, next research should focus more on motivation of exercise in the elderly since it is important and necessary and can help improve the elderly's health.

2. For the chronic disease was found in older people. They have diseases such as high blood pressure, diabetes and high blood lipids. The same as Wajpolprasit Konkaew's study (8), which found that most of the elderly had moderate health status. The proportion of elderly with chronic diseases is similar to those with no chronic diseases. Therefore, it should encourage the elderly to have good health by eating the right food, do right exercise.

3. The results showed that most of the elderly eat three meals a day, the 5 groups of food, cooked well food, eat fruits and vegetables regularly. The respondents rarely eat sweet food, salty food and high fat food. They also drank alcohol and smoked less. This is a healthy behavior. Unlike the study of Wipaporn Sithisart, Suchada Suannum (9) found that the elderly in the other community always eat salty food.

4. In the Exercise Behavior aspect, from the analysis of exercise behavior of the elderly. It was found that more than half of the elderly had regular exercise, at least 30 minutes a day and 3 days a week. The results of this study showed that more than half of the elderly had appropriate exercise habits. As with the research results of Sriprai Phorsingh and Anong Harnsakul (10), which found that the elderly had the knowledge to participate in health promotion in high level. Therefore, next research should continue to focus on motivation of exercise in the elderly since it is important and necessary and can help improve the elderly's health. According to Anchalee Jantapo (11), from the conclusion of exercise in the elderly research, it was found that regular exercise which means 3 - 5 times a week with at least 30 minutes can improve muscle strength, together with upper body, core muscle, and limb muscle strength. It can also improve moving agility and balancing skill, elasticity of muscle and joint in the elderly.

5. For stress and stress management, It was found that the elderly had less stress and had appropriate stress management. This is consistent with the research of Wipaporn Sindhisart and Suchada Suannum (9) found that elderly people can face with stress and various problems. As with the research of Nittaya Srijamnong and Anchalee Jantapo (12) which conclude that mental health of the elderly is in normal level.

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# ATTENTION DEFICIT AND HYPERACTIVITY DISORDER DISORDER IN PRESCHOOL PERIOD

**Elif Yalçintas Sezgin\*, Leyla Ulus\*\***

*\*Elif Yalçintas Sezgin, phd,lecturer, child development,uludağ universty, inegöl vocational school,Bursa,Turkey*

[elifyalcintas@uludag.edu.tr](mailto:elifyalcintas@uludag.edu.tr)

*\*\* Leyla Ulus, Assist. Prof. Dr, pre-school education İstanbul Üniversty Hasan Ali Yucel Faculty of Education, Istanbul, Turkey*

[Leylaurus@hotmail.com](mailto:Leylaurus@hotmail.com)

## ABSTRACT

Attention deficit hyperactivity disorder (ADHD) which cause deterioration in functionality, is the most common neuropsychiatric disorder in childhood today. Attention Deficit Hyperactivity Disorder (ADHD), according to DSM-V, is defined with attention deficit, impulsivity and hyperactivity concepts (Häcker & Stapf, 2004) Attention deficit hyperactivity disorder has 3 main subtypes; the character dominated by lack of attention, the character dominated by hyperactivity-impulsive and related 3 more types. It is one of the most seen problems in Early childhood and childhood periods. Pre-school children with Attention deficit and hyperactivity disorder (ADHD), difficulties are experienced in diagnostics and education in Turkey. The aim of this study in this context is to discuss the causes, prevalence, treatment and the other related disorders of the character dominated by lack of attention (ADD) in Turkey . Writting was held on the basis of the studt is only Attention Deficit Disorder. The conclusion has discussions, personal ideas and some advices.

**Keywords:** ADD, Attention Deficit Disorder, preschool period

## INTRODUCTION

In recent years, there has been a great scientific and social interest in attention-deficit/hyperactivity disorder (ADHD) (Hechtman and McGough, 2007). ADHD is a common neurobehavioral disorder of childhood which leads to a prominent deterioration in the life quality of a patient and the family. ADHD often takes years and it has biological, psychiatric, educational and social aspects. Children who are diagnosed with ADHD have various difficulties such as lack of attention, inability to get organized, and inability to provide the desired concentration in time. These problems lead to problems in the academic and areas of competence, low school achievement and being excluded from a group of friends and colleagues.

ADHD starts in the preschool period and it can also last into adulthood. It is a disorder which is characterized with hyperactivity, short attention span and impulsivity. According to the DSM-IV-TR (2007), ADHD is basically characterized by a persistent and continuous pattern of inattention and/or more frequent and severe hyperactivity-impulsivity compared to peers. ADHD begins in childhood and it frequently lasts into adulthood (60-70%). Similar to other diseases, ADHD also positively responds to early diagnosis and treatment. However, it can lead to severe medical, academic and social problems in case it is not treated (Ercan, 2010).

## 1. Attention Deficit Disorder

ADHD has three basic subtypes; predominantly inattentive type, predominantly hyperactive-impulsive type, and the combination type.

In the predominantly inattentive type, "symptoms of attention deficit" are dominant. In this type, it is possible that there are no symptoms of hyperactivity and impulsivity or symptoms are not significantly severe. Severe distractibility can lead to problems such as delaying the work, having difficulties in getting organized, avoiding the long-term tasks which require mental effort, inability to pay attention to details, losing belongings, inability to complete the tasks and severe forgetfulness while performing daily tasks. The problem of children with attention deficit is being insufficient to start or finalize these functions on time and in a right place. These children frequently need more help, and proper attitudes and behaviors should be exhibited towards them. Furthermore, they need to be directed and reminded more according to their peers who can easily perform these tasks in their daily lives (Brown, 2013). Characteristics of the predominantly inattentive type of the disease were determined in the diagnoses criteria DSM-V (2014) and these are specified as follows:

- The child mostly does not pay attention to details or classes at school, and frequently and carelessly makes mistakes during activities at school (for instance; ignoring or skipping details or doing a wrong job).
- The child mostly has difficulty to maintain the attention during any type of activity or while playing games (for instance; having difficulty staying focused and attending to lectures, talks or reading classes).
- It mostly appears that the child does not listen to others (for instance; it seems as that her/his mind is somewhere else although there is no distraction).
- The child does not follow directions, and cannot complete the ordinary tasks and responsibilities during the daily life and at school (for instance; the child starts the job, but he/she quickly loses the focus and he/she is easily distracted).
- The child mostly has difficulty to organize the works and activities (having difficulty in managing the sequential jobs, keeping the school equipments and personal belongings in order. The child studies messy and disorganized and he/she has a bad time management and cannot obey time limitations).
- The child mostly avoids anything that requires a sustained mental effort, does not like these kinds of jobs and does not want to be involved in these activities (for instance; homework or responsibilities at school, preparation of reports in the period of youth or adulthood, filling forms and reviewing long texts).
- The child mostly loses her/his equipments, belongings and tools which are prepared for work or certain activities (for instance; School supplies, pencils, books, everyday tools, wallet, keys, articles, glasses, cell phones).
- The child is mostly and easily distracted by external stimuli (this can be observed as irrelevant thoughts in youths and adults).

- The child is often forgetful (having difficulties during routine and daily works, and errands, being late to return phone calls in youths and adults, being late in paying bills and adjusting daily life according to appointments).

According to DSM V (2014) criteria, at least six of these signs and symptoms should be observed during at least six months for the ADD diagnosis.

### **1.2. Causes of Attention Deficit Disorder**

Lack of attention is a disorder characterized by problems in concentrating, being forgetful and disorganized, having difficulties in organizing tasks, being distracted easily during performing any kind of job, avoiding the tasks which needs attention and ‘patience’ and frequently making simple mistakes (Ercan, 2008). Even though ADD is the most frequently studied disease in the child psychiatry, mechanisms underlying the disorder have not yet been clarified. Various imaging techniques have been used in order to examine the brain structure and functions in ADD. It was primarily suggested that involvement of frontostriatal link was responsible for the disease. Additionally, it has been recently shown that the reason of ADD can also be morphological alterations in temporoparietal lobe and cerebellum, basal ganglia and corpus callosum (Giedd, 2010, Cherkasova, Hechtman, 2009). In the first metaanalysis which showed structural abnormalities in magnetic resonance imaging (MRI), it was found that the maximum volumetric reduction was observed in the most posterior inferior cerebellar vermis, corpus callosum splenial, right caudate nucleus, total brain and right cerebral hemisphere of children with ADHD compared to controls (Valera, Faraone, Murray, Seidman, 2007).

Recently, interaction of genetic and epigenetic factors related to ADHD and environment have been actively examined. The mostly studied factors are as follows; maternal smoking and/or alcohol use during pregnancy and dopaminergic genes, low birth weight, psychosocial problems, serotonergic genes and disputes between parents (Pennington et al., 2009).

### **1.3. Attention Deficit Disorder and Preschool Period**

Not all of ADD patients, but vast majority of them experience prominent problems. The incidence of attention deficient disorder with/without hyperactivity is between 6% and 9% in school children (Sürmeli, 2010).

Children with ADD should be need directed and reminded more according to their peers who can easily perform these tasks in their daily lives. Parents and acquaintances increasingly feel confusion and despair as the child falls behind in learning the management of daily tasks and interactions in life and at school. In order to achieve this, more than a particular talent is needed and child has a tendency to have problems in self-management. Since children's growth rate varies from person to person, it is possible that parents do not understand whether their children grow slowly or it is a matter of neurobehavioral disorder. In the beginning, the child may seem to fail to understand and achieve the expectations of parents compared to peers or there can be an unusual inconsistency in child’s behaviors. Parents are worried about this situation

and they may suppose that their children should be more matured in order to perform these tasks compared to their peers. This delay is generally very long in children with ADHD and the absence of the expected development and maturation leads to an increasing concern. Children with ADHD have more injuries due to their hyperactivity and disturbing behaviors (Hinshaw, 2002). Children with ADHD are highly restless and fearless. Majority of peers ask for directions and help for some dangerous situations. However, children with ADHD can be brave to touch hot or sharp things or walk across the street alone. They can resist against the control of adults. Brown (2013) classifies prominent features of a child with ADD as follows.

1. **Planning, establishing priorities and action:** Children with ADD struggle when they start an action. Even though it seems that they behave impulsively in some fields, it is generally observed that they cannot initiate easily in case the task is not interesting for them. They postpone the requirements and tasks until the last minute. They can motivate themselves only in the last minute and when it is urgent. The reason for this is the existence of a problem in cognitive functions that has become chronic.
2. **Focus, maintaining, shifting attention to tasks:** Children with ADHD have difficulties in paying attention to things which is not interesting for her/him or which force her/him. Understanding the meaning of sentences and paragraphs is an active process which requires a persistent and intense focus and attention. Since these children cannot get their attention from interesting things, they can have tendency to behave as they wish. This can deteriorate the social compliance and an individual can avoid performing tasks which are expected or asked from him/her.
3. Children with ADHD generally feel themselves tired during the day. The problem of sleepiness which can be observed while they are sitting or quietly standing is not due to being tired. Rather it is the chronic problem of maintaining the viability. Due to the slow processing speed, these children need extraordinarily long time to complete these kinds of tasks. Children with ADD show reluctance to participate in works and games which requires attention and intense physical activity.
4. These children have difficulties in directing their feelings, they are less tolerant to disappointments, they suffer while they are trying to cope with daily life stresses and they easily feel 'overwhelmed' and 'nervous'. According to Brown (2013), Wender (1987, 1995) described that how individuals with ADD syndrome are lost in 'emotional instability', how they frequently feel down, and how they exhibit nervous complaints, furious behaviors or excitability which cannot be sufficiently controlled. It was emphasized in the study that children with ADHD are less tolerant to disappointments, they suffer while they are trying to cope with daily life stresses and they easily feel 'overwhelmed' and 'nervous'.
5. **The use of process memory and reminiscence:** Problems are generally related to the working memory and it is not related to the storage memory. One of the most important functions of the



working memory is to keep a small piece of information in an efficient way while dealing with another work.

Working memory can be conceptualized as a desk where old and new data are constantly converted, combined and transferred. It does not only store the knowledge, it is also similar to a very effective calculation unit which efficiently processes instant information to enormous files of long-term memory. Working memory is very important for the group or individual discussions in which an individual tries to understand what is told and meanwhile prepares his/her answers to others. Children with ADHD have frequently important problems in these simultaneous functions.

6. **Follow-up and self-regulation action:** Children with attention deficit cannot follow the instructions from the beginning to the end, struggle to give attention to the work or play, lose the equipments and belongings which are needed for activities at home or at school, do not listen carefully, miss the details, appear uneven, struggle to perform activities which require mental effort for a long time, they are forgetful and their attention easily shifts to another field.

#### **1.4. Prevalence and Treatment**

ADD is most commonly observed as a preschool disorder, it can lead to important academic, social and psychiatric problems and its negative impacts can continue lifetime. Since it can affect the health of the individual, family and society, ADHD is accepted as an important health problem. ADHD can start in the early period of the life and it has a big impact on the individual's socialization (Retz and Rösler, 2009).

ADHD varies according to geographical regions and communities and its incidence is between 3%-13%. In preschool period children, according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R), ADHD was detected as 3.8-9.4% in Canada, 3.4% in Australia (DSM-III-R), 6.7% in small children and 2-3% in adolescents in New Zealand (DSM-III-R), 4.2% in Germany, 5% in India, 7.5% in Taiwan, 6-9% in China, 1.3% in adolescents in Netherlands, 9.5% in children and adolescents in Puerto Rico, 7.7% in Japan, 2-13% in Colombia [DSM-IV], 5.8% in 12-14 year old children in Brazil (DSM IV,1987; DSM IV,1994). American Psychiatric Association reports that the incidence of ADHD is between 5% and 7% in preschool children. According to a comprehensive metaanalysis study performed in 2008, it was found that the prevalence of ADHD throughout the world was 5.29% (Polanczyk and Jensen, 2008).

In Turkey, the prevalence of ADHD is detected as 5% in Turkish primary school children living in urban areas (Motavalli, 1994). In Trabzon, it was shown in a thesis study that ADHD rate was 2.81% in primary school students (Yıldırım, 1998). These differences can be related to the diagnostic criteria, cultural differences and limitations of methods used in studies. ADHD is more common among male and it has been reported that the female-male rate of the disease is respectively 4:1 and 9:1 throughout the world (2). After the change in the DSM-IV system and after sub types are formed, it was specified that the prevalence of ADHD in children increased from 3-5% [DSM-III-R] to approximately 12% [DSM-IV] (DSM IV, 1987; DSM IV,1994).

The treatment of the ADD should be comprehensive since it affects the functionality of the child in many areas. The primary aim of the ADD treatment is to solve behavioral, cognitive, social and familial problems. An efficient treatment is composed of medication, psychotherapy and psychosocial therapies. Family therapy, relaxation therapy, vitamin therapy, diet and 'biofeedback' therapies have been specified in various studies. However, there is no study which has systematically examined the efficiency of these ADD therapies. Psychosocial interventions can be family, school and child oriented. ADD assessments are important in family oriented therapies (Kayaalp, 2008).

## 2. Conclusion

Preschool period is one of the most critical periods of a human life and it is important to diagnose and treat this type of anxiety disorders during childhood. Therefore, particularly mothers should be careful observers for the early diagnosis. No matter how much intelligence they have, children with lack of attention can be compensated to some extent and they will be unsuccessful in the school life since they cannot focus on their education. Children who are not treated can experience depression, anxiety disorder, tic and behavioral disorders. The self-reliance of children can be deteriorated since they are continuously criticized by others. Therefore, the disorder should be diagnosed in an early period and it should be efficiently treated on time. In case it is noticed in early childhood years, providing efficient education and opportunities will minimize this disadvantage during the developmental period of children. When preschool teachers notice something outside the norm, they should inform families and they should direct them for the early diagnosis and the treatment.

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# ASSESSING THE IMPACT OF MAXIMIZING TENDENCY ON CAREER OUTCOMES OF INDIAN IT PROFESSIONALS

**Prof Vijai N Giri and Sayoni Santra**

*Dept. of Humanities & Social Sciences, Indian Institute of Technology Kharagpur, India*

## ABSTRACT

The changing dynamics of career landscape with a plethora of opportunities, easy availability of diverse resources and multiple information have opened gateways for today's professionals to envision attractive career choices. In response to this, some people engage exhaustively in career decision-making processes, reflecting an inclination towards accomplishing the best that is manifested through their tendency to maximize. Though literature has explored such tendency within individuals' career domain, but its in-depth impression in real world of work is yet understudied. We examined maximizing approach in career decision-making of IT professionals in India and comprehended how it influenced their career outcomes. It was found that there was a duality in maximizing tendency, capturing the dimensions of "striving for career excellence" and "state of internal career ambiguities". While "striving for career excellence" increased career satisfaction, "state of internal career ambiguities" intensified intentions of turnover. The implications and limitation of findings have been discussed.

*Keywords:* Career decision-making, career satisfaction, maximizing tendency, turnover intention

# SOCIAL MEDIA USAGE IN INTERNAL CORPORATE COMMUNICATION

**Gülçin İpek Emeksiz**

*Anadolu University, Turkey*  
[giemeksiz@anadolu.edu.tr](mailto:giemeksiz@anadolu.edu.tr)

## ABSTRACT

Social media has turned into an indispensable tool for many companies worldwide. Many companies use social media to reach their existing and prospective customers in a convenient way. These companies not only introduce their new products on social media, but also engage their customers to their brands with the dialogue they provide. The two-way communication in social media helps companies to get feedback about their brands and companies can improve their brands with that information they get. Therefore, companies gain many advantages from their social media usage. Indeed, most of the researches which have been carried on social media give priority to how companies use social media in their external communication activities with their customers. Therefore, this research aims to draw attention to the internal corporate communication aspect of social media usage of companies. This research examines what kind of benefits companies gain and what kind of disadvantages they come across out of their social media usage in internal corporate communication. The results of the research indicate that companies which use social media in their internal corporate communication activities are perceived as pioneering as these companies get more efficiency from their internal corporate communication. However, the main disadvantages of social media usage in internal corporate communication are encountering with cyber-attacks and the leakage of significant information. This research will present a concise evaluation towards social media usage in internal corporate communication from different perspectives.

**Keywords:** social media, internal corporate communication, benefits, disadvantages