

## **Sigma's 30th International Nursing Research Congress**

### **Effects of ASE Program on CPG and Body Composition in Persons With Type 2 Diabetes**

**Ratchanok Phonyiam, MSN, RN**

*Division of Community Health Nursing, Ramathibodi School of Nursing, Faculty of Medicine Ramathibodi Hospital, Mahidol University, Bangkok, Thailand*

#### **Purpose:**

A quasi-experimental research aimed at examining effects of an Arm Swing Exercise (ASE) Program on capillary plasma glucose (CPG) and body composition in persons with uncontrolled type 2 diabetes in community.

#### **Methods:**

Participants, recruited following the inclusion criteria and randomly selected, were twenty-four persons with uncontrolled type 2 diabetes without serious complications from a Sub-district Health Promoting Hospital, Suphanburi province, Thailand. The ASE Program based on self-efficacy theory for promoting self-efficacy perception to perform exercise consisted of knowledge of ASE, demonstration and return demonstration of ASE, assignment to perform ASE at least 30 minutes a day 5 times a week for 12 weeks at home, telephone follow-up and group discussion. Data were collected using a demographic questionnaire and measurements of capillary plasma glucose and body composition (body mass index, visceral fat, and skeletal muscle) at baseline, 8<sup>th</sup> week, and 13<sup>th</sup> week. Data were analyzed by using descriptive statistics and repeated measures ANOVA.

#### **Results:**

The findings showed that 62.5% participants were female and 37.5% participants were male. A majority of participants as 91.7% graduated primary school. The average age of participant was 58.38 (SD 8.87) years, and they were diagnosed with type 2 diabetes for 6.83 (SD 4.94) years. After the ASE program, persons with uncontrolled type 2 diabetes had visceral fat at 13<sup>th</sup> week significantly lower than 8<sup>th</sup> week ( $p$ -value < 0.05) and skeletal muscle at 13<sup>th</sup> week higher than 8<sup>th</sup> week ( $p$ -value < 0.05). However, CPG and body mass index of persons with uncontrolled type 2 diabetes had no significantly difference during the program.

#### **Conclusion:**

Implementation of the Arm Swing Exercise program could be more effective for improving body composition when persons with uncontrolled type 2 diabetes continuously perform for at least twelve weeks. Therefore, the ASE program should be widely utilized by health personnel to prevent complications and enhance quality of life.

---

#### **Title:**

Effects of ASE Program on CPG and Body Composition in Persons With Type 2 Diabetes

#### **Keywords:**

Arm Swing Exercise, Body Composition and Capillary Plasma Glucose

## References:

Aekplakorn, W., Chariyalertsak, S., Kessomboon, P., Assanangkornchai, S., Taneepanichskul, S., & Putwatana, P. (2018). Prevalence of Diabetes and relationship with socioeconomic status in the Thai population: national health examination survey, 2004-2014. *Journal of Diabetes Research*, 2018, 1-8.

American Diabetes Association. (2018). Standards of medical care in diabetes-2018. *Diabetes Care*, 41(1), s1-s159.

International Diabetes Federation. (2018). IDF Western Pacific members. Retrieved October 25, 2018, from <https://www.idf.org/our-network/regions-members/western-pacific/members/115-thailand.html>

Khamsom, S., Terathongkum, S., & Kittipimpanon, K. (2017). Effects of arm swing exercise program on hba1c and nutritional status in community dwelling older adults with type 2 diabetes. *Thai Journal of Nursing and Midwifery Practice*. 4(2), 46-60.

Reutrakul, S., & Deerochanawong, C. (2016). Diabetes in Thailand: status and policy. *Current Diabetes Reports*, 16(3), 28.

Terathongkum, S. (2017). Arm swing exercise for diabetes control. *Thai Journal of Nursing and Midwifery Practice*, 4(1), 36-44.

Tunkamnerdthai, O., Auvichayapat, P., Donsom, M., & Leelayuwat, N. (2015). Improvement of pulmonary function with arm swing exercise in patients with type 2 diabetes. *Journal of physical therapy science*, 27(3), 649-654.

## Abstract Summary:

An Arm Swing Exercise (ASE) Program is the management of diabetes by promoting self-efficacy perception involved motivating activities to continuously perform exercise. ASE assists to promote insulin sensitivity and energy expenditures resulting in improving capillary plasma glucose and body composition in persons with uncontrolled type 2 diabetes in community.

## Content Outline:

**Topic:** Effects of ASE Program on CPG and Body Composition in Persons with Type 2 Diabetes

### 1. Introduction

- 1.1 Background and significance of diabetes problems
- 1.2 Arm Swing Exercise integrating Self-efficacy theory
- 1.3 Research question
- 1.4 Research objective

### 2. Body

## 2.1 Research method

2.1.1 Research design: A quasi-experimental design

2.1.2. Purpose of study: To determine effects of the Arm Swing Exercise (ASE) program on capillary plasma glucose and body composition in persons with uncontrolled type 2 diabetes

2.1.3 Participants: Twenty-four participants with uncontrolled type 2 diabetes who met the research criteria were randomly selected

2.1.4 Research instruments: The ASE program, a demographic questionnaire, and measurements of capillary plasma glucose and body composition (body mass index, visceral fat, and skeletal muscle)

2.1.5 Data collection

2.1.6 Data analysis: Descriptive statistics and repeated measures ANOVA

## 2.2 Results and Discussion

## 3. Conclusion

First Primary Presenting Author

### ***Primary Presenting Author***

Ratchanok Phonyiam, MSN, RN

Ramathibodi School of Nursing, Faculty of Medicine Ramathibodi Hospital, Mahidol University

Division of Community Health Nursing

Assistant instructor

Bangkok

Thailand

**Author Summary:** Miss Ratchanok Phonyiam, RN, MSN interests in complementary health practice and community-based intervention to prevent complication of diabetes and improve quality of life in persons with type 2 diabetes