CONFERENCE PROCEEDINGS

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25-26 Nov 2017

Conference Venue

KU Home, Kasetsart University, Chatuchak, Bangkok, Thailand
KEYNOTE SPEAKER

Asst. Prof. Kageeporn Wongpreedee
Lecturer, Srinakharinwirot University, Bangkok, Thailand
### Katayoun Arfaie  
GICICHLSR1717052  

#### Pregnancy anxiety and fear of child birth in Iranian women

**Katayoun Arfaie**  
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**Abstract**

**Background:** Anxiety disorders have severe complications for a mother and her developing baby. A few studies have focused on pregnancy-related anxiety and its risk factors including fear of child birth. Therefore, current study aimed to explore components and dimensions of this kind of anxiety.  

**Materials & methods:** This qualitative study (conventional content analysis) was conducted with mothers who referred to health care centers from May to December, 2015. In order to collect data, purposive sampling and face-to-face semi-structured in-depth interviews were used. Data analysis was conducted using Maxqda software.  

**Results:** 28 pregnant women from different social backgrounds, educational levels and ethnicities aged 18-41 years old participated in this study and after analysis, fear of child birth was classified into four categories including the process of delivery (fear of pain, prolonged labor, loss of control, Being left alone during delivery, fear of her own incompetency), time of delivery (fear of preterm labor, fear of unknown delivery time, fear of late arrival to hospital), delivery complications (Fear of bleeding, Fear of death, Postpartum depression, delivery accidents, genitalia injuries and fetal health problems) and healthcare quality (hospital facilities, lack of trust in maternity staff and lack of trust in obstetricians).  

**Conclusions:** The results suggest that supporting, reassuring and educating the pregnant mothers and giving information about delivery room, labor and strategies for coping with fear of pain and childbirth are critical. Changes in maternity care policies are recommended to promote positive attitudes toward normal delivery.

**Key words:** fear, childbirth, pregnancy-related anxiety, normal delivery

### Aprilia Ayu Sholihati Nafisah  
GICICHLSR1717056  

#### The Effects Of Lactobacillus Plantarum Dad-13 Fermented Soy Milk To Blood Pressure Of Hypercholesterolemia Rats

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Abstract
High prevalence of high blood pressure gives a challenge in nutrition and food biotechnology field to find new diet that can help controlling blood pressure. Lactobacillus plantarum Dad-13 is believed to lowering cholesterol and help managing blood pressure. This probiotic bacteria is isolated from “dadih” (traditional Indonesian fermented milk). The purpose of this study is to determine the effect of giving Lactobacillus plantarum Dad-13 fermented soy milk to the blood pressure of hypercholesterolemia rats. Eleven male Wistar rats was divided into 3 groups; normal control group, negative control groups, and treatment group. The intervention was performed after the rats were induced with high-fat diet for two weeks. Lactobacillus plantarum Dad-13 fermented soy milk was given 1.8 mL/Ray to the treatment group for the next two weeks. The blood pressure was measured on the first day before high-fat diet induction and on the last day after the intervention. ANOVA is used to analyze blood pressure parameter with 95% as confidence of interval and p<0.05 is considered significant. The result shows that after intervention for two weeks, the blood pressure between groups is significantly different (p≤0.001). Also, it shows a decrease in the blood pressure of treatment group although the result is not significant (p>0.05). This study needs a further research with larger groups and longer durations of intervention.

Monika Szpringer
GICICHLSR1717057

Quality of medical service and patients’ satisfaction

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Abstract
Introduction. In the contemporary times, looking after the quality of health services is not only the way of being competitive on the market, but most of all the possibility of improving patients’ satisfaction. Without any doubt, the quality of medical services and treatment are of the highest importance to every person who undergoes regenerative medicine activities. The aim of the studies was to determine the opinions and satisfaction of the hospitalised patients as regards the received medical services and their quality.

Material and methods. The study was conducted between February and March 2016 among the hospitalised patients (310 people). The survey technique was employed, with authors’ questionnaire consisting of 39 questions. To assess patients’ satisfaction as regards medical services, the 5-level Likert scale was utilised. To prepare the statistical elaboration of the results, the authors used Microsoft Excel, Gnu R
software and Gretl package. The studied parameters were compared by employing the chi-square test and Pearson correlation coefficient.

Results. The patients taking part in the study had the best judgement about the convenience of visiting hours (60.6% of positive opinions). Among the examined areas, the most adversely marked issue was the amount of time devoted to patients by doctors (only 41.7% of positive responses).

Conclusions. The conducted studies allowed to identify those areas, the quality of which, in patients’ opinion, is unsatisfactory and requires improvement.

Key words: quality of medical services, satisfaction, health care, patient

An Effective Study of Geographical Flow and Intensity of Dengue Outbreak among Males in Punjab, Pakistan

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Abstract
Dengue Fever is a hot issue under discussion around the world, specifically in tropical and sub-tropical countries. It is an epidemiological disease which covers the massive geographical area within no time from person to person. It is difficult to take over dengue fever with limited technical resources, administrative authorities should be equipped with technical resources and infrastructure. Geographical Information System (GIS) is well-developed technology to express all sort of information in thematically maps along with the reflection of hotspot areas. In this research paper, we used Arc View as GIS tool to exemplify Male Patient data of Dengue outbreak in Punjab 2011. Fourteen thousand and five hundred male patients were registered in thirty-seven epidemiological weeks during this outbreak. This research analysis discovered significant results of geographical flow and intensity of dengue fever among males belong to all districts of Punjab. These results can assist to Health departments and decision making authorities to make plans to avoid from future outbreak and emphasis on hotspot areas with preventive measures so that human and financial losses can control up to a minimum.

Abel A. Zandamela
Development and validation of a radiomics software platform (AK)

Abel A. Zandamela

3rd ICHLSR Bangkok - International Conference on Healthcare & Life-Science Research, 25-26 Nov 2017, Bangkok, Thailand
KU Home, Kasetsart University, Chatuchak, Bangkok, Thailand
Abstract
Radiomics is a non-invasive computer aided technique for high-throughput extraction of quantitative imaging features aiming on the design of mineable data, descriptive and predictive models for decision support. The field of radiomics is based on the assumption that the obtained models can provide insights on diagnosis and prognosis. The precision medicine which can be obtained by radiomics leads to a constant development of software tools able to support the radiomics workflow. We describe and validate the Analysis Kinetic (AK) software platform for texture analysis. AK provides a user friendly and a powerful platform environment for radiomics analysis, is highly flexible and developed under the Medical Imaging Interaction Tool (MITK) platform along with QT and C++. AK provides quality assurance for data and feature algorithms: image data, regions of interest, and feature algorithm-related data can be reviewed, validated, and/or modified. More importantly, AK supports elements for collaborative workflows, the consistency of data sharing and the reproducibility of calculation result, are embedded in the AK workflow: image data, feature algorithms, and model validation. AK has already been applied to aid research in wide range of treatments, and is currently in use in many hospitals around China. In summary, AK provides a powerful, convenient, highly flexible, optimizable and common radiomics framework which allows researchers to implement different sets of clinical data, and produce prognosis results. The aim of this article is therefore to present the design and validation of the radiomics image analysis software (AK) and to draw comparisons with commonly used tools in the radiomics field.

Key words: Radiomics, AK, Validation, Machine Learning

Manazza Iqbal
GICICHLSR1717063

Deep Analysis Of Diabetic Patients Database With The Help Of Association Rule Mining Technique

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Abstract
Diabetic is most developing perpetual illness in Pakistan as well as around the world. It might be in type of insulin or glycogen, yet both structures are dangerous for patients. Decades prior to diabetic patients were typically developing individual whose age range was forty five to forward. Related with mental disorder and strain while these ascribes fluctuates from culture to culture and race to race through the world. Developing nations are typically confronting real issues like heath and destitution alongside less monetary sources. Where the vast majority of the general population are living nonstandard life and continually confronting inconvenience and strain to run their day by day lives. Destitution, pressure, anxiety are home center for. Strategy is extremely valuable for recovering the relationship of numerous characteristics in a given enormous database. We can recognize the significant attributes among the large number of records which causes diabetics. Association rule mining is smart technique to find the frequent pattern and their association. Among millions of record we can find significant association among attributes to find the real issue. In this research study a database of one lakh diabetic patients from four distinct races was analyzed with the help of...
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GICICHLRSR1717064

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Abstract
The agent based modeling and simulation for visual exploration of social problems including especially the treatment of complex and life-threatening diseases like a tumor, has become the intense need of the era, but everyone has not expertise in programming and development of the agent based models using simulation techniques. Therefore, we aim to present a framework for the understanding of the code of agent based simulation model, called NetLogo Tumor Model (NTM), developed in NetLogo software, for pictographic exploration of cancer progression and its resistance against anticancer drugs during chemotherapy. The presented tutorial answers the questions including what is NTM (the under study model), how its two types of cells including original stem cell (OSC), moving stem cell (MSC) and transitory cells, in mitosis process, mutate and divide into more cells (symmetrically and asymmetrically) by producing metastasis, how the interface can be understood, what and why variables and functions are used for this model, how this model works, what is happened when anti-tumor drug kills original stem cell, moving stem cell or transitory cells. This framework is presented pictorially explaining every line of the code of the variables and functions used in NTM, in such a way that a non-expert user can easily understand its code and may be able to develop a simulation model from his field of interest. We conclude that with the help of presented tutorial for the development of agent based models using simulation techniques becomes easy, which provides visual exposure for the solution of complex problems including tumor progression and its resistance during chemotherapy. Keywords: Agent based modelling and simulation, tutorial, tumor progression, simulation of cancer resistance

Gabrielle Ariche
Healing Environment in Thailand - From research to practice

3rd ICHLSR Bangkok - International Conference on Healthcare & Life-Science Research, 25-26 Nov 2017, Bangkok, Thailand
KU Home, Kasetsart University, Chatuchak, Bangkok, Thailand
Gabrielle Aiche
Department of Architecture, Chulalongkorn University, Bangkok, Thailand

Abstract
The importance of designing supportive environments in healthcare facilities becomes more and more relevant. The patient profile of the 21st century hospital has shifted from the acute to the chronically ill patient. With the coming years, the population of the world will get older and greyer, will be often admitted to hospital and be hospitalized for longer periods of time. These patients will need a supportive environment that will promote physical, emotional and social wellbeing – they will need a Healing Environment (HE). The amount of research devoted to HE has grown tremendously over the last 20 years. Moreover, it presents strong evidence regarding the influence of the environmental design on both the patient’s outcomes and the staff’s performance. Design factors such as Daylight, Colors, Artworks, or Auditory factors can reduce stress, anxiety, sleep disorders, relief pain and more. However, in practice seems to fail using this valuable knowledge is generally ignored.

Zafar Iqbal Channa
Non-formal CNE program barriers to participation: A comparative study among hospital nurses of two provinces in Pakistan

Zafar Iqbal Channa
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Rapid scientific and technological discoveries have increased demands of specialized nursing care. Knowledge and skills can be restored by engaging nurses in a set amount of continuing nursing education (CNE) program activities. Literature suggested that degree or license is not the end point of education after basic nursing study. Apparently, basic nursing education for practice becomes obsolete within five to ten years of graduation. This obsolescence can lead to the poor performance of nurses in clinical practice. Therefore, study was designed to investigate and compare barriers to participation among hospital nurses of two provinces in Pakistan. Cross sectional descriptive study approach used to collect data through convenience sampling technique of three hundred (n=300) nurses. “Barriers to Participation Questionnaire” (BPQ) was used as research tool. Quantitatively, result interpretation was set as “the lower the mean score in each type of barrier, higher the barrier was measured due to reverse Likert scale rating. Generally, administrative barrier was found higher and most prevalent barrier, work-related barrier was more predictive and financial barriers as predicting barrier as compare to family and personal barrier. Data also revealed that Punjab nurses have greater administrative with mean score of 2.16±0.87 and work-related barriers with mean score of 2.43±0.81 than the nurses from Sindh province with mean score of 2.26±0.75 and 2.81±0.90. Regarding financial barrier, both provincial nurses have equal level barriers than the family and personal barriers among nurses of two provinces. To keep nurses connected with advanced knowledge in rapidly changing health care environment, more opportunities of non-formal CNE programs should be provided for all employed nurses in all provinces.
| Young Jin Tak  
GICICHLSR1717070 | The health impact of wearable devices on patients with metabolic syndrome: a clinical trial in Korean adults |
|------------------|--------------------------------------------------------------------------------------------------|
|                   | Young Jin Tak  
Department of Family Medicine, Pusan National University, Hospital, Busan, Republic of Korea |
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|                   | **Abstract**  
Few studies have examined the effect of wearable devices on chronic diseases. We postulated that electronic activity monitors with automated feedback via a wearable device may improve metabolic syndrome (MetS). We included 53 smartphone users with a diagnosis of MetS. Subjects were prescribed regular walking with a wearable device on their arm or waist for 12 weeks. Trained nurses provided individual feedback regarding physical activity via telephone consultation on alternate weeks. Blood pressure (BP), body composition, fasting plasma glucose, and lipid profiles were recorded. The primary outcome was MetS resolution. The secondary outcome was an improvement in the metabolic components. Twenty subjects (35.2%) completed the trial (median age 46 years, range 36-50 years). After 12 weeks, systolic and diastolic BP decreased from 137 mmHg and 85 mmHg to 127 mmHg and 77 mmHg, respectively (p=0.015, p=0.022). Fasting plasma glucose decreased from 119 to 108 mg/dL (p=0.337, p=0.658) and triglycerides decreased from 187 to 173 mg/dL (p=0.543, p=0.084). In 14 subjects (74%) there was improvement in the components of metabolic impairment and resolution of MetS occurred in 9 subjects (47%). Wearable devices may be an efficient strategy for treating patients with MetS, with good patient adherence and sustained engagement. Keywords: electronic activity monitor, wearable device, metabolic syndrome, physical activity |

| Hideki Nakano  
GICICHLSR1717051 | Effect of insoles with toe-grip bar on toe function and standing balance in young women |
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3rd ICHLSR Bangkok - International Conference on Healthcare & Life-Science Research, 25-26 Nov 2017, Bangkok, Thailand  
KU Home, Kasetsart University, Chatuchak, Bangkok, Thailand
Abstract

Objective. Toe-grip strength decreases with aging and low toe-grip strength is an important risk factor for falls among elderly. Regular exercises like progressive resistance training and towel gathering are effective to increase toe-grip strength. However, the regular exercises are impeded by personal, environmental, and activity characteristics. Therefore, toe-grip strength training which can be performed easily and regularly is needed. Insoles that can be used conveniently are an effective tool to solve the above problems. The aim of this randomized controlled study was to investigate the effects of insoles with a toe-grip bar on toe function and standing balance in healthy young women.

Methods. Thirty female subjects were randomly assigned to an intervention group (n = 15) or a control group (n = 15). The intervention group wore shoes with insoles with a toe-grip bar. The control group wore shoes with normal insoles. Both groups wore the shoes for 4 weeks, 5 times per week, 9 hours per day. Toe-grip strength, toe flexibility, static balance (total trajectory length and envelop area of the center of pressure), and dynamic balance (functional reach test) were measured before and after the intervention. The outcome variables were analyzed using mixed 2 × 2 [group (intervention and control groups) × time (pre- and post-)] analysis of variance. Results. Significant interaction was observed between toe-grip strength and toe flexibility (F = 12.53, p < 0.01; F = 5.84, p < 0.05, respectively), with significant improvement in the intervention group compared with that in the control group. Conversely, no significant interaction was observed in the total trajectory length, envelop area, and functional reach test. Conclusions. This study suggests that insoles with a toe-grip bar contribute to improvements in toe-grip strength and toe flexibility in healthy young women.

Keyword Insoles, Toe-grip bar, Toe-grip strength, Toe flexibility, Standing balance

Young Jin Tak
GICICHLISR1717070

The health impact of wearable devices on patients with metabolic syndrome: a clinical trial in Korean adults

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Department of Family Medicine, Pusan National University, Hospital, Busan, Republic of Korea

Abstract

Few studies have examined the effect of wearable devices on chronic diseases. We postulated that electronic activity monitors with automated feedback via a wearable device may improve metabolic syndrome (MetS). We included 53 smartphone users with a diagnosis of MetS. Subjects were prescribed regular walking with a wearable device on their arm or waist for 12 weeks. Trained nurses provided
individual feedback regarding physical activity via telephone consultation on alternate weeks. Blood pressure (BP), body composition, fasting plasma glucose, and lipid profiles were recorded. The primary outcome was MetS resolution. The secondary outcome was an improvement in the metabolic components.

Twenty subjects (35.2%) completed the trial (median age 46 years, range 36-50 years). After 12 weeks, systolic and diastolic BP decreased from 137 mmHg and 85 mmHg to 127 mmHg and 77 mmHg, respectively (p=0.015, p=0.022). Fasting plasma glucose decreased from 119 to 108 mg/dL (p=0.337, p=0.658) and triglycerides decreased from 187 to 173 mg/dL (p=0.543, p=0.084). In 14 subjects (74%) there was improvement in the components of metabolic impairment and resolution of MetS occurred in 9 subjects (47%). Wearable devices may be an efficient strategy for treating patients with MetS, with good patient adherence and sustained engagement.

Keywords: electronic activity monitor, wearable device, metabolic syndrome, physical activity

Mariola Wojciechowska
GICICHLSR1717055

The lifestyles and value system of the youth (based on the research conducted in Świętokrzyskie Voivodeship)

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Monika Szpringer
The Jan Kochanowski University/Institute of Public Health

Danuta Kossak
The Old-Polish Academy

Abstract

Today's youth is characterized by the diversity of lifestyles and choices based on their value systems. Furthermore, diverse external factors like belonging to a certain social group, tendencies and life trends or the dynamics of social changes are also non-negligible. New forms of trust, risk or fluency of societal situation make adolescents look for a certain system of values and afterwards create a lifestyles matching up the current conditions.

Method:
In the conducted research MJ Szymański's and M. Rokeach's values classification instruments as well as J. Pietrasiński's procedure of lifestyles examination were used. The research was carried out in 2016-2017 in Świętokrzyskie Voivodeship. It comprised 340 students from vocational secondary schools. Collected experiential results were examined with statistical analysis using SPSS/PC package.

Results:
The research informs about the dominance of the voluptuary (34.6%) and productive (29.1%) lifestyle. Less but significantly enough, respondents indicated the consumption lifestyle (22.9%). Distinctly less popular was the creative lifestyle and the heroic one was the least favored. Individual factors (age, gender) don't differentiate the preference of the lifestyle in the statistically relevant method. Subjects of research share similar preferences concerning choices of particular goods and "products". The financial situation associated with education and employment is a significant factor while choosing a particular lifestyle. Analysis of value systems demonstrates that amongst the group of autotelic values, wisdom, health and self-respect and amongst the instrumental values honesty, ambition and
independence are on the top. Values appreciated by the youth are a significant correlate to their preferred lifestyles.

Keywords: youth, lifestyles, system of values

<table>
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<th>Early versus Late Nap during Night Shift and its Association with Psychomotor Driving Performance of Nurses</th>
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</table>

Background: Sleep deprivation leads to fatigue and sleepiness among health care workers and can result in road traffic collisions (RTC) after their shift. Planned napping is one of the main solutions proposed to avoid this problem.

The present study aimed at assessing the effect of 2 nap times during the night shift on psychomotor driving skills (that are required for safe driving) among night shift nurses.

Material and methods: A cohort study was conducted on 23 night shift nurses. The nurses completed the 8 tests of the validated traffic psychological assessment battery of Vienna Test System (VTS) before the night shift at 6 PM, and they repeated the same set of tests after the night shift at 8 AM.

Data were compared based on the nap times (00:00–03:00 AM versus 03:00–06:00 AM), which were chosen by the night shift nurses.

Results: Nurses aged 23 to 36 years participated in this study. Their driving experience was 7.6 ± 4.6 years, and 34.7% reported RTCs in the previous year. The nurses who chose to take naps from 00:00 to 03:00 AM showed a significantly improved time-movement anticipation ability in driving compared to those who napped from 03:00 to 06:00 AM (p-value = 0.005).

Conclusion: Our study shows that speed and movement anticipation (ZBA Test) improved in the 00–03 nap group compared to the 03–06 group. Anticipation is a highly important psychomotor ability for safe driving. The ZBA test could be related to the ability of estimating the time to collision of two vehicles that are moving at a constant speed.

The advantage of a 00:00 to 03:00 nap time compared to 03:00 to 00:06 may be explained by sleep inertia, a physiological state characterized by a deficit of motor skills directly after rapidly waking up. Laboratory studies with larger sample sizes are required to investigate the effect of nap times on other psychomotor skills.

Keywords: Driving, Napping, Nurse, Psychomotor Performance
### Abstract

The correlations between development, health and education have their onset on a defining level. A proper development from the moment of conception through all the ontogenetic stages and health understood holistically as a good physical, mental and social state (not only a lack of disease or disability) and an ability to adapt positively, to fulfill social roles let a child start a school education, a systematical attendance and effective learning.

It is based on the results of a long-term project. Infants born in 1995 were examined, 531 children (275 boys and 256 girls). The level of state of health and lifestyle of children and adolescents from the Swietokrzyskie region are discussed in this work. At the age of 18 an in-depth analysis of the state of health and lifestyle was carried out. Moreover, at the age of 18 in particular, a preferred youth lifestyle has been identified from the findings of the diagnostic survey and questionnaire surveys.

In the work a level of development, its conditions in ontogenesis and the main health-related problems of the youth, aged 18, as well as their preferred lifestyle have been presented. The analysis allows for making the following conclusions:

1. Children suffer from numerous health disorders, some of them typical ones and others not. The most common disorders are: motor system disorders (spondylopathy), dental decay, vision and hearing defects, obesity, neuroses, allergies, heart action disorders.

2. With respect to the youth lifestyle, a significant influence of negative health behaviours such as: poor nutrition, minor physical activity, smoking, alcohol abuse, stress-related drug taking, aggression increase in interpersonal contacts has been observed.

**Key words:** auxology, development, health
Contents Analysis of Dementia Caregiver's Care Experiences

Ju-young Ha
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Nurse, Pusan National University Hospital

Abstract
Purpose: This study was done to explore the care experiences of dementia caregiver. Method: A qualitative method with content analysis was utilized. Participants of this study were four nurses, three nurse’s aides and three care workers with more than 3 years of experiences in elderly care facilities. Data collection was conducted through individual in-depth interviews from February to April, 2016. Contents of the interviews were tape-recorded with participant’s consent. Data analysis applied general procedure of qualitative research and content analysis procedure of Graneheim and Lundman (2004). Result: Total four major themes and nine sub-themes were emerged; constructing a new perspective on dementia care; changes a point of view on dementia; change of attitude; belated regret. Each theme appears to be related to the change in attitude toward nursing patients with dementia over time. Conclusion: As a result of the research, it is not only physically difficult but also mentally difficult due to experience of change attitude toward patient; regret what I did not do well to patient. Therefore, it will be necessary to develop an intervention program to promote the well-being of dementia care providers.
Key Words: Dementia, Caregivers, Nursing care, Qualitative Research

Quality Of Life Polish Youth Conditioned By Mental Wellbeing

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Abstract
The aim of the study was to diagnose the feelings related to the quality of youth life in the dimension of mental health. The study was conducted in 2014 among 18-year-olds (280 girls and 198 boys) of vocational schools in Świętokrzyskie voivodship, coming from the city (156 students) and from the village (335 students). Young people continued studying in 27 professions in the technical school and in the basic vocational school. The study used a diagnostic survey method using the International Standardized Testing Tool KIDSCREEN-52, HEALTH RELATED QUALITY OF LIFE QUESTIONNAIRE for CHILDREN and YOUNG PEOPLE - Polish version of the questionnaire for the quality of life of children and adolescents. The results obtained from the KIDSCREEN-52 questionnaires were compared with the t-Student significance difference test. The results of the study of Świętokrzyskie youth were compared with the norm adopted for the Polish population (control group). Statistical significance was assumed at the level of p ≤ 0.05 and for highly significant p ≤ 0.01. The type of school differentiates mental wellbeing in favor of basic vocational school students (p ≤ 0.01). Higher mental health is felt by the Świętokrzyskie youth as compared to youth from other regions of Poland, respectively: M=62.08, SD=22.67; M=60.55, SD=20.97). Caring for your own mental health during adolescence is
### Abstract

**Purpose:** The purpose of this study was to evaluate the effectiveness of nursing practical education using standardized patients performed in South Korea.

**Methods:** A systematic review and meta-analysis using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses: the PRISMA Statement was conducted. The keywords used were ‘standardized patient and nursing’, or ‘simulated patient and nursing’. A total of 19 studies published between 2001 and 2016 were included in the final analysis using the following databases: RISS (Research Information Sharing Service), KISS (Korean studies Information Service System), and Google Scholar. The R with the ‘metafor’ package was used for the analysis. Selected studies were assessed for methodological quality using Quality Assessment Tool for Quantitative Studies.

**Results:** Nineteen studies were identified, including a total of 1,135 nursing students and nurses. This study found that nursing practical education using standardized patients was effective in improving clinical competence, communication skills, problem-solving ability, satisfaction for education and self-efficacy. The standardized effect sizes of the measured variables were all above the middle level.

**Conclusion:** This study reaffirms the significant educational effect of nursing practical education using standardized patients. In order for nursing students and nurses to equip more flexible practice capability in this rapidly changing clinical field, the use of simulation-based learning using simulated patients is considered now almost essential. The result of this study can be used as an evidence-based data for various nursing practical education.

**Keywords:** nursing education, patient simulation, practical nursing
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<tr>
<td>Dr. Patrick Lombardo</td>
<td>General Practitioner, Saint Clotilde, France</td>
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