# Knowledge, attitude and practice of needle stick injury among health care workers in Hospital Universiti Sains Malaysia (Hospital USM) Kubang Kerian, Kelantan

Nur Farihin Ismail, Nor Haslina Mohd and Noraini Ghafar

*School of Health Sciences, Health Campus, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia*

Corresponding author: Nur Farihin Ismail, farihinismail555@gmail.com

## Abstract

Needle stick injury is a common incident among health care workers, which could indirectly lead to fatal infection. The main objective of this study was to explore the prevalence of needle stick injury and determine the knowledge, attitude and practice of needle stick injury among health care workers in Hospital Universiti Sains Malaysia (Hospital USM) and to investigate the main concern that involves in needle stick injury among health care workers. A descriptive research design was done using close-ended questionnaire on 160 health care workers in Emergency and Medical Department, which included medical officers, nurses, medical assistant, health care assistant and others who were chosen using purposive sampling. The response rate was 96.4% and the data were analyzed using SPSS version 22.0 for the prevalence, relationship among the variables and association between job category with knowledge, attitude and practice among respondents. It was found that 47 of the health care workers (29.4%) had experienced of needle stick injury due to lack of skills on the procedures (78.7%) and in ward (13.8%). The study also showed that there were no significant relationship between knowledge, attitude and practice among respondents ($p > 0.05$). There were association between job category and practice ($p < 0.05$) except job category and knowledge together with job category and attitude. As conclusion, an appropriate safety measure can be implemented by specific type of training based on the potential hazards of needle stick injury.

# Association between length of stay and mortality rates in Emergency Department of Hospital Universiti Sains Malaysia

Siti Faza Ayunnie Che Jaafar[a], Siti Azrin Ab Hamid[a], Norsa'adah Bachok[a] and Kamarul Aryffin Baharuddin[b]

*[a]Unit of Biostatistics and Research Methodology, School of Medical Sciences, Health Campus, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia*

*[b]Department of Emergency & Trauma Hospital Universiti Sains Malaysia, Jalan Raja Perempuan Zainab 2, Kubang Kerian, 16150, Kota Bharu, Kelantan, Malaysia*

Corresponding author: Siti Faza Ayunnie Che Jaafar; fazaayunnie93@gmail.com

## Abstract

An emergency department (ED) is the first destination for a large number of patients with various severity of the diseases. This study aimed to determine the association between length of stay and mortality in ED. A retrospective cohort study involved record review of 116 patients out of 192 patients who died in ED over period of two years at Hospital Universiti Sains Malaysia (Hospital USM) in years 2016 to 2017. Mortality rate data was analysed using Poisson regression analysis. The mean age of patients died in ED was 57.45 years old with standard deviation 19.97 years old. Majority of patient died at ED in Hospital USM were Malay (94.0%). Male (66.4%) patients had recorded higher mortality cases compared to female (33.6%). The diagnosis of patients who died was cardiac (30.2%), sepsis (26.7%), trauma (22.4) and others (20.7%). Most of the mortality cases in ED were attended by ambulance (67.2%) and from direct admission (59.5%). Mortality cases were higher during the night shift (39.7%), weekdays (69.0%) and non-public holidays (84.5%). One hour increase in the length of stay at ED, the risk of mortality cases was estimated to be less than 1.0% adjusted by number of ambulance call, shift of attendance, overcrowding status, public holiday admission and weekend admission (Adjusted IRR = 0.99; CI: 0.991, 0.998; *p* = 0.003). Patients who stayed longer at ED had a lower probability of dying. The longer stay in ED might allow proper management of patients thus preventing mortality.

# Knowledge, attitude and practice of prophetic food consumption among students of Universiti Sultan Zainal Abidin

Mohd Adzim Khalili Rohin[a,b,c], Hoormila A/P Sagar[a], Norhaslinda Ridzwan[a], Mimie Noratiqah Jumli[a] and Siti Noor Syarma Mohd Sharif[a]

[a]*Faculty of Health Sciences, Universiti Sultan Zainal Abidin, Gong Badak Campus, Hafsah Block, 21300 Kuala Nerus, Terengganu, Malaysia*

[b]*Centre for Continuing Education (CCE), Universiti Sultan Zainal Abidin (UniSZA), Gong Badak Campus, 21300 Kuala Nerus, Terengganu, Malaysia*

[c]*Institute for Community (Health) Development, Universiti Sultan Zainal Abidin (UniSZA), Gong Badak Campus, 21300 Kuala Nerus, Terengganu, Malaysia*

Corresponding author: Mohd Adzim Khalili Rohin; mohdadzim@unisza.edu.my

## Abstract

This cross-sectional questionnaire-based study was designed to identify and demonstrate knowledge, attitude and practice of prophetic food consumption among students of Universiti Sultan Zainal Abidin (UniSZA). A total of 217 respondents was recruited consisting of 88 males (41%) and 129 females (59%). Students were selected using convenience purposive sampling based on the inclusion criteria. A self-administered questionnaire was designed to conduct this study as there was no study had been done on knowledge, attitude and practice of prophetic food consumption. Cronbach Alpha test was carried out to test validity and internal consistency of the questionnaire. The reliability coefficient obtained was 0.752. Results found that most of the respondents had a good knowledge about prophetic food consumption (45.6%), good level of attitude (66.4%) but poor practice of prophetic food consumption (38.2%). There was a significant difference in mean attitude score between male and female students, mean attitude and practice score between three age groups, mean knowledge score between three fields of study groups and mean knowledge, attitude and practice score between three ethnicity ($p < 0.05$). Finally, a positive correlation was observed for the three domains, between knowledge and attitude (r = 0.712), knowledge and practice ($p = 0.373$) and attitude and practice ($p = 0.431$) with p-value less than 0.05. In conclusion, although the majority of UniSZA students had satisfactory level of knowledge and attitude regarding prophetic food consumption, the actual application of prophetic food consumption in daily life was still low.

# Previous vaginal delivery affects the success of trial of labour after one previous lower segment caesarean section

Wan Nur Hajidah Wan Mohd Hazman[a], Siti Azrin Ab Hamid[a], Norsa'adah Bachok[a] and Fauziah Jummaat[b]

[a]*Unit of Biostatistics and Research Methodology, Health Campus, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia*

[b]*Department of Obstetrics & Gynaecology, Health Campus, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia*

Corresponding author: Wan Nur Hajidah Wan Mohd Hazman; hajidahhazman@gmail.com

## Abstract

Caesarean deliveries are becoming a worldwide concern as the rate is rising globally. World Health Organization (WHO) and United Nations Children's Fund (UNICEF) have decided to set an acceptable percentage of caesarean rate is not more than 15% of predicted births. One of the biggest contributions to the rising caesarean section rate was previous caesarean section. The purpose of the study was to identify the influence of previous vaginal delivery on the mode of delivery of women with one previous lower segment caesarean section (LSCS) in Hospital Universiti Sains Malaysia (Hospital USM). A retrospective cohort study was conducted at Hospital USM using medical records of women with one previous LSCS. This study involved 388 women who attended Hospital USM for a subsequent pregnancy. The modes of delivery included were vaginal delivery and emergency LSCS. A trial of labour was successful in 194 (50%) and another 194 (50%) had a repeat caesarean section. Majority of the women was Malay (96.6%) with the mean and standard deviation for maternal age and gestational age were 29.67 (4.76) years and 39.04 (2.28) weeks. Most of the women had no previous of vaginal delivery (76.5%) while 23.45% had previous vaginal delivery. There was a significant association of previous vaginal delivery and mode of delivery (OR = 2.35; 95% CI: 1.44, 3.84; *p* = 0.001). Trial of vaginal delivery should be given for every women regardless previous LSCS.

# Symptoms and associated factors of musculoskeletal disorder among lecturers in Universiti Sains Malaysia

Sharifah Nur Anisa Nasiha Syed Ibrahim and Nor Haslina Mohd

*School of Health Sciences, Health Campus, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia*

Corresponding author: Sharifah Nur Anisa Nasiha Syed Ibrahim; anisanasiha96@gmail.com

## Abstract

Musculoskeletal disorder (MSD) is thought to be the cause of absenteeism and early retirement. A cross-sectional study was conducted among lecturers in Universiti Sains Malaysia. A set of questionnaires in a form of Google form was distributed to lecturers through email. The objective of this study was to determine the number of lecturers that show the symptoms of MSD and the associated factors of MSD. The symptoms of MSD at any parts of the body in the previous 12 months were experienced by 93.7% of the lecturers. The most common parts of the body showing the symptoms of MSD were shoulder (61.9%), lumbar back (60.3%) and neck (55.6%) followed by upper back (38.1%), knees (33.3%) and hips/thighs (30.2%). The least reported symptoms of MSDs were wrists (28.6%), ankles/feet (25.4%) and elbows (12.7%). Associated factors studied in this research were socio-demographic factors, working condition, psychosocial and past injury. Neck pain was associated with awkward position ($p = 0.042$). Shoulder pain was significantly associated with lifting heavy load ($p = 0.035$) and get less support from the colleagues ($p = 0.007$). Wrists and lumbar back were associated with past injury ($p = 0.012$ and $p = 0.021$, respectively). Upper back was significantly associated with exercise ($p = 0.005$). Lastly, hips/thighs were significantly associated with gender ($p = 0.047$), working experiences ($p = 0.048$) and exercise ($p = 0.002$). In conclusion, shoulder, lumbar back and neck were the common parts reported to suffer the pain among the lecturers. Therefore, intervention strategies should be implemented to prevent and control the symptoms of MSD.

# Comparison of knowledge level and attitude towards obstructive sleep apnea among dental and medical undergraduate students of Universiti Sains Malaysia

Siddharthan Selvaraj, Sumaiya Zabin Eusufzai and Jawaad Ahmed Asif

*School of Dental Sciences, Health Campus, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia*

Corresponding author: Siddharthan Selvaraj; sidzcristiano@gmail.com

## Abstract

We aimed to assess dental and medical undergraduate student's knowledge level and attitude towards obstructive sleep apnea (OSA) and examine whether their knowledge and attitudes about OSA differed from each other. This cross-sectional comparative study involved 216 students from dental and medical school of Universiti Sains Malaysia. OSAKA questionnaire was used to obtain the socio demographic background, knowledge level and attitude towards OSA. Results show that mean age of the participants was 23.14 years (SD = 1.105), where lowest was 21 years and the highest being 28. The frequency of knowledge level of the participants was less than half (44.95%) on OSA despite having attitude towards OSA with frequency more than half (78.2%), when assessing about the attitude among students towards patients with OSA was nearly half (43.5%). This shows that medical undergraduate students had higher hands-on knowledge and attitude towards OSA. In conclusion, there is difference in knowledge level and attitude between medical and dental students at significant level of 95% where ($p$ = 0.029) towards OSA with mean value of 7.3 (SD = 3.31), while the dental students had mean value of 6.3 (SD = 3.41). This shows medical students had higher knowledge and attitude towards OSA than the dental students. There is a need to improve the curriculum for both medical and dental schools on sleep disorders, which may help them to acquire knowledge on sleep disorders like OSA and to provide better treatment to the patients with sleep disorders, which helps to upgrade the level of health status of all individuals in the country.

# Assessment of nutritional status, level of physical activity and impacts of diabetes on quality of life among type II diabetes mellitus patients in Hospital Universiti Sains Malaysia (Hospital USM)

Rohana Abdul Jalil[a] and Teng Bee Wei[b]

*[a]School of Medical Sciences, Health Campus, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia*

*[a]School of Health Sciences, Health Campus, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia*

Corresponding author: Teng Bee Wei; yumy0715@gmail.com

## Abstract

Diabetes is a chronic disease that impairs the quality of life. Quality of life is an important aspect that should be evaluated as low quality of life will be resulted in diminished self-care, which may lead to worsened glycemic control, increased risk for other complications of diabetes. Therefore, an assessment of nutritional status, level of physical activity and impact of diabetes on quality of life was carried out on 180 type II diabetes patients in out-patients clinic, Hospital Universiti Sains Malaysia (Hospital USM). Data were collected using systematic sampling method and questionnaire, which included sociodemographic characteristics, the International Physical Activity Questionnaire short form (IPAQ), 24-hour dietary recall and questionnaire of Audit Diabetes-Dependent Quality of Life (ADDQoL). Body mass index (BMI) and waist circumference were measured using standardized methods. The mean age of the respondents was $56.7 \pm 7.8$ years. The majority of the respondents were Malay (87.8%) followed by 10.6% Chinese and 1.7% Indian. The mean BMI was $29.1 \pm 5.7$ kg/m$^2$. According to evidence-based cut-off point for Asian, 35.0% and 55.6% were considered overweight and obese, respectively. About 51.2% of respondents had low physical activity level, while 34.4% and 14.4% were in moderate and high physical activity categories. Significant difference was found between the mean of score of average weighted impact (AWI) on QoL among the known groups. The associated factors that influence the quality of life among type II diabetes mellitus patients were complications of diabetes, level of physical activities and glycemic control with the *p*-value of 0.009, 0.035 and <0.01, respectively, which were tested using One-way ANOVA and independent t-tests.

# Assessment of knowledge, attitude and practice (KAP) score towards sugar consumption and amount of sugar in warm tea that satisfy sweetness satisfaction among patient attendants at Dental Clinic, Hospital Universiti Sains Malaysia

Sana Qureshi, Mohd Zulkarnain Sinor, Basaruddin Ahmad and Akram Hassan

*School of Dental Sciences, Health Campus, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia*

Corresponding author: Mohd Zulkarnain Sinor; zulkarnainsinor@usm.my

## Abstract

The preference for sweetness and the consumption of sugar among Malaysian population is high, causing multiple health diseases. Until now, there has been no known study assessing the amount of sugar consumed in grams, to meet the sweetness satisfaction level, in frequently consumed self-prepared beverages. The objective of this study were to assess the amount of sugar in warm tea that satisfies the sweetness satisfaction, and to assess the knowledge, attitude and practice (KAP) score towards sugar consumption along with the factors associated with sugar consumption among patient attendants in Dental Clinic, Hospital Universiti Sains Malaysia. A cross sectional study with convenience sampling method was conducted. A sample size of n = 46 was estimated for the main study. Data collection involved a structured interview using two questionnaires consists of sociodemographic and KAP questionnaire, followed by an experiment of amount of sugar self-added in warm tea that meets the sweetness satisfaction. Numerical data was presented as mean and SD. Categorical data was as frequency (%). Mean SD comparison was analyzed using t-test. Association was analyzed using Pearson correlation. Mean sugar consumption in warm tea per serve was 12.1 grams (SD = 3.23). The mean KAP score was 13.8 (SD = 1.23), 20.8 (SD = 5.11) and 6.1 (SD = 2.06), respectively. Sociodemographic factors and KAP score had no association with the sugar consumption ($p > 0.05$). Patient attendants, taking tea more than once a day, were almost fulfilling the WHO sugar recommendations per day, by drinking warm tea only. Good knowledge score does not always show good attitudes and practices.

# Prevalence of human papillomavirus infection in Kelantan population with oral cavity squamous cell carcinoma

Muhammad Azeem Yaqoob[a], Suhaily Mohd Hairon[b] and Nurhayu Ab Rahman[a]

[a]*School of Dental Sciences, Health Campus, Universiti Sains Malaysia, 16150, Kubang Kerian, Malaysia*
[b]*School of Medical Sciences, Health Campus, Universiti Sains Malaysia, 16150, Kubang Kerian, Malaysia*

Corresponding Author: Nurhayu Ab Rahman; nurhayu@usm.my

## Abstract

Globally, oral cancer is the eleventh most common cancer. Human papillomavirus (HPV) infection is known as one of the causative agents in oral cavity cancer. Detection of HPV has a significant role in the management of oral squamous cell carcinoma (OSCC). The objective of this study was to investigate the prevalence of HPV infection in OSCC and its association with socio-demographic features of Kelantan population. The design of the study was a retrospective, which was approved by the ethical committee. Forty-one OSCC formalin- fixed paraffin-embedded (FFPE) specimens were analysed for HPV infection. Sociodemographic data were retrieved from the archive of Hospital Universiti Sains Malaysia. Immunohistochemistry (IHC) was performed using a p16 antibody to detect HPV infection in specimens. The interrater agreement of the p16 staining was observed by two oral pathologists. Out of 41 tissue specimens of OSCC examined, 4 (9.8%) were found to be HPV-positive infection with a very strong agreement between observers ($\kappa = 0.84$). No significant association was found between the HPV positivity to age, gender, smoking, betel quid, and alcohol habit ($p > 0.05$). Higher prevalence of the HPV infection was seen in OSCC affecting Kelantan population as compared to 3% global prevalence in oral cavity reported by World Health Organization. There was no association between the presence of HPV infection to socio-demographic features. These findings suggest that HPV infection might play an important role in the development of cancer in the oral cavity.

# Structural relationship of transtheoretical model of behaviour changes, and amount of physical activity among undergraduate students in Health Campus, Universiti Sains Malaysia

Liu Kien Ting[a], Garry Kuan[b], Yee Cheng Kueh[a] and Wan Nor Arifin[a]

*[a]Unit of Biostatistics and Research Methodology, School of Medical Sciences, Health Campus, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia*

*[b]Exercise & Sports Science Programme, School of Health Science, Health Campus, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia*

Corresponding author: Liu Kien Ting; kienting@hotmail.com

## Abstract

The Transtheoretical Model (TTM) is an integrated model, which aims to understand individual's behavioural changes by experiencing a series of readiness for change. The study aimed to examine the effect between students' Stages of Change (SOC), Processes of Change (PC), Decisional Balance (DB) and Self-Efficacy (SE) on amount of physical activity (PA), using Structural Equation Modelling (SEM). This cross-sectional design study involved a purposive sample from 562 undergraduate's students in Universiti Sains Malaysia, who took part in the co-curricular program in 2017. We administered self-report validated questionnaires, which were the PC scale, the DB scale, the simplified version of SE scale, and the Godin Leisure-Time Exercise Questionnaire (GLTEQ) in English. The SOC was used to indicate students' current stage of PA at ordinal levels: pre-contemplation, contemplation, preparation, action and maintenance. Data analysis was conducted using Mplus version-8. The final structural model fits the data well based on several fit indices (CFI = 0.951, SRMR = 0.034, RMSEA (90%CI) = 0.056 (0.038, 0.074), RMSEA $p$ = 0.284). It showed a significant inter-relationship among the TTM constructs and supported nine hypotheses. However, among all the constructs examined, only PC affected PA. Meanwhile, the SOC, pros and SE had a significant indirect relationship with PA. The findings suggested that SOC of an individual would affect the SE level, the ability to make a positive and negative decision and perform according to their behaviour. This study confirmed that by making the correct decision and taking action accordingly, the amount of PA would be increased.

# Psychometric properties of the Malay version of coping self-efficacy scale among university's students

Shirlie Chai[a,c], Yee Cheng Kueh[a], Najib Majdi Yaacob[a] and Garry Kuan[b]

[a]*Unit of Biostatistics and Research Methodology, School of Medical Sciences, Health Campus, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia*

[b]*Exercise and Sports Science, School of Health Sciences, Health Campus, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia*

[c]*Department of Pharmacy, Miri Hospital, Sarawak, Malaysia*

Corresponding author: Shirlie Chai; shirlie_chai@yahoo.com

## Abstract

Studies revealed that the prevalence of stress was high among undergraduate students. Thus, students need to have the resources available to deal effectively with the setbacks. In handling the stress, the confidence in coping effectively with life challenges is crucial. The purpose of this study was to determine the validity and reliability of Malay version of Coping Self-Efficacy Scale (CSES), using confirmatory approach. The participants were 672 undergraduate students in Health Campus, Universiti Sains Malaysia (USM), aged between 18 and 30 years (mean = 20.27 years, SD = 1.35 years). Coping self-efficacy among the students was assessed using the CSES. It was first translated into Malay using standard procedures of forward and backward translation. The CSES-Malay (CSES-M) was then distributed to the students. The confirmatory factor analysis (CFA) was carried out in Mplus 8. The hypothesized model consisted of 26 observed variables (or items) and three latent variables (or subscales). The hypothesized model did not result in a good fit to the data based on several fit indices. Examination of the CFA results suggested some modifications to the path model in order to improve the fit indices. These modifications involved deleting 10 problematic items. This resulted in excellent model fit indices (CFI = .955; TLI = .947; SRMR = .037; RMSEA = .046, 90% CI = .039 to .054, probability RMSEA = .779.). The final measurement model for the CSES-M consisted of 16 items and they were considered fit for the sample in this study.

# Effects of BMI and gender on weight related quality of life among office workers in Kota Bharu, Kelantan

Kui Xiao Qing[a] and Rohana Abdul Jalil[b]

[a]*Program of Nutrition and Dietetics, School of Health Sciences, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia*

[b]*Department of Community Medicine, School of Medical Sciences, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia*

Corresponding author: Kui Xiao Qing; kxq1212@gmail.com

## Abstract

This was a cross sectional study aimed to examine the effect of body mass index (BMI) and gender on weight related quality of life of office workers who had completed MyBFF@Work worksite lifestyle intervention for 1 year in Kota Bahru, Kelantan. Quality of life (assessed using impact of weight on quality of life questionnaire (IWQoL-Lite)) and BMI of the participants (n = 83, female = 52, male = 31) with aged 21-60 years old were assessed. Based on WHO BMI cut-off points, respondents were classified into 3 groups: i) ≤ overweight:BMI < 30.0 kg/m$^2$; ii) obese class I: BMI 30.0 - 34.9 kg/m$^2$; and iii) obese class II: BMI ≥ 35.0 kg/m$^2$. Results show that there was a significant difference of median physical function, public distress and total IWQoL-Lite scores between respondents with BMI < 30.0 kg/m$^2$ and BMI ≥ 35.0 kg/m$^2$ tested using Kruskal Wallis test with post hoc Mann Whitney test, $p < 0.017$. The median physical function, public distress and total IWQoL-Lite scores in respondents with BMI ≥ 35.0 kg/m$^2$ (median: 56.8, IQR: 31.9; median: 80.0, IQR: 45.0 and median: 66.9, IQR: 36.3, respectively) were significantly lower than those with BMI < 30.0 kg/m$^2$ (median: 84.1, IQR:2 9.5; median: 100.0, IQR: 5.0 and median: 84.7, IQR: 18.6, respectively). There was also a significant difference of median of all the IWQoL-Lite domains' scores between female and male tested using Mann Whitney test, $p < 0.05$, except sexual life. The median physical function, self-esteem, public distress, work and total IWQoL-Lite scores in female (median: 69.4, IQR: 26.7; median: 71.4, IQR: 38.4; median: 90.0, IQR: 30.0; median: 87.5, IQR: 25.0 and median: 78.6, IQR: 22.4 respectively) were significantly lower than that in male (median: 84.1, IQR: 31.9; median: 96.4, IQR:10.7; median: 100.0, IQR: 0.0; median: 100.0, IQR: 6.2 and median: 91.1, IQR: 14.5 respectively). The lower the IWQoL-Lite scores, the poorer the quality of life. These findings indicate that respondents with higher BMI had poorer physical function, public distress and overall quality of life and female has poorer physical function, self-esteem, public distress, work and overall quality of life.

# Knowledge, attitude, and practice of food hygiene among food handlers in Pasar Besar Tasek Raja, Pasir Mas, Kelantan

Aiman Rahimi, Nur Syahmina Rasudin and Hasmah Abdullah

*School of Health Sciences, Health Campus, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia*

Corresponding author: Hasmah Abdullah; hasmahab@usm.my

## Abstract

Food handlers play a very important role in ensuring food provided is clean. Therefore, lack of knowledge, poor attitudes and not practicing the right techniques in food preparation and serving food will have serious effects on food hygiene The purpose of this study was to assess the level of knowledge, attitude, and practice of food handlers on food hygiene at Pasar Besar Tasek Raja, Pasir Mas, Kelantan. This cross-sectional study design used simple random sampling techniques to select 84 food handlers in Tasek Raja's big market. The data were collected using a questionnaire. Descriptive analysis was used to obtain frequency. The Mann-Whitney test was used to see the association between gender and KAP's score. Kruskal-Wallis test was used to examine the association between the level of education of food handlers and their KAP's scores. Most food handlers gained adequate knowledge (> 70%) and positive attitude (> 70%). However, the practice of their food hygiene was very unsatisfactory (<70%). This study also shows that there were no significant association between the gender, age and education level of food handlers with knowledge, attitudes and practices score ($p > 0.05$). However, there was a correlation between knowledge and attitude ($r = 0.219$, $p < 0.05$), knowledge with practice ($r = 0.48$, p < 0.05) and attitude with practice ($r = 0.231$, $p < 0.05$). The study emphasizes the importance of knowledge, attitude, and practices on food hygiene to ensure safety of food from production to the consumption free of pollution and in turn can prevent consumers from getting sick due to foodborne illnesses.

# Knowledge, attitude and practice on food safety and hygiene among street food vendors in Kota Bharu, Kelantan

[a]Nur Syazana Mohd Musa

[a]School of Health Sciences, Health Campus, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan.

Corresponding author: Nur Syazana Mohd Musa; nursyazanamohdmusa@gmail.com.my

## Abstract

Street foods have become popular in developing countries including Malaysia. However, street food consumption has correlated to higher risks of food-borne diseases. This study was conducted to investigate the knowledge, attitude and practice (KAP) level regarding food safety and hygiene among street food vendors in Kota Bharu, Kelantan. This is because street vendors regularly have an inadequate access of running water for cleaning hands or equipment. The specific objective was to find the association between socioeconomic background (educational level, working experience) and food handling training with the KAP level and to discover the correlation between knowledge with attitude, attitude with practice also knowledge with practice of the handlers. This cross-sectional study involved 246 of respondents who were the main food handlers at the carts or food stands by answering a set of questionnaires. The participants were selected using a convenience sampling method based on the list of street food vendors' populations. Based on the results, all of the respondents obtained a high mean percentage of knowledge ($93.68 \pm 10.99$), attitude ($91.19 \pm 8.89$) and practice ($91.19 \pm 8.89$). With regards to the street vendors, there was no significant relationship between working experience ($p > 0.05$) with KAP levels. However, significant difference was found between education level and food handling training with knowledge, attitude and practice ($p=0.01$). Besides, there was a positive correlation between knowledge with attitude, attitude with practice and knowledge with practice ($p = 0.01$). In conclusion, training should focus on understanding of the rationale for the behaviour as knowledge is not always translated into practice.