

Abstracts of Theses Approved for the PhD/ MSc at the School of Health Sciences, Universiti Sains Malaysia, Kubang Kerian, Kelantan, Malaysia

EVALUATION OF THE MALE REPRODUCTIVE TOXICITY OF THE AQUEOUS EXTRACT OF *Hibiscus sabdariffa* L. IN SPRAGUE DAWLEY RATS

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Introduction: *Hibiscus sabdariffa* has long been widely utilised for medicinal purposes.

Objectives: The present study aimed to investigate the potential effects of the aqueous extract of *H. sabdariffa* (AEHS) on the male reproductive system of Sprague Dawley rats.

Methods: AEHS was administered to forty males at four dosages: 0 (control-distilled water), 250 mg/kg/day, 500 mg/kg/day and 1000 mg/kg/day by oral gavage daily throughout the treatment periods, which comprised three phases: pre-mating, mating and post-mating.

Results: The effects of AEHS on the male rat reproductive system were slightly significant for certain doses. No mortality and any signs of physical toxicity were observed. The mating performance was also not affected. Similarly, the mean body weight of rats was statistically not affected. However, the reproductive organ weights were found to be statistically different. Furthermore, AEHS increased the testosterone levels and sperm counts of the 250 mg/kg and 1000 mg/kg dose groups, while the 500 mg/kg dose group showed considerably low levels for both parameters. The 500 mg/kg dose group was detected to exhibit inconsistent data for certain parameters when compared to other groups, which might be caused by confounding factors instead of AEHS.

Conclusion: These findings suggest that AEHS should be consumed with caution particularly when the daily dose exceeds 250 mg/kg of body weight.

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DEVELOPMENT OF A MALNUTRITION RISK ASSESSMENT SCALE SPECIFICALLY TAILORED FOR CHRONIC KIDNEY DISEASE PATIENTS IN CHINA: A DELPHI STUDY

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Objective: The aim of this study was to gather expert knowledge and experience to guide the development of a malnutrition risk scale for patients with chronic kidney disease.

Methods: The Delphi method was used to determine expert consensus on which entries should be included in the malnutrition risk assessment scale in chronic kidney disease. A literature review and semi-structured interview were performed to generate entries. Then two rounds of Delphi expert consultation survey were conducted with 17 invited experts from two countries, five regions and eight institutions. The entries were screened revised and commented by the experts and eventually improved using the boundary value method.

Results: The results of the statistical analysis revealed a positive coefficient of 89.5% and 88.2% for both rounds of expert consultation, respectively. The expert authority coefficient values were 0.77 and 0.78, and the expert coordination coefficient test was $P < 0.01$. In the first round, 13 entries were removed and 10 new entries were added making 58 entries in the second round. Accordingly, in the second round, a total of 53 entries were maintained as the final entries.

Conclusion: An effective malnutrition risk assessment tool that is specific for the people of China in general was developed, which can aid early detection of malnutrition in patients with CKD.

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EVALUATION OF THE FERTILITY AND TERATOGENICITY OF THE AQUEOUS EXTRACT OF *Hibiscus sabdariffa* L. IN FEMALE SPRAGUE DAWLEY RATS

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Introduction: Various medicinal plants including *Hibiscus sabdariffa* (roselle) are gaining attention in phytotherapy research.

Objectives: The present study was designed to investigate the possible fertility and teratogenicity of the aqueous extract of *H. sabdariffa* (AEHS) in female Sprague Dawley rats.

Methods: AEHS was administered orally to 40 rats by gavage at four different dosages; 0 (distilled water-control), 250 mg/kg/day, 500 mg/kg/day and 1,000 mg/kg/day. Treatment began from pre-mating and continued through mating up to the 19th day of pregnancy periods. Throughout this study, the reproductive parameters were evaluated until the day of sacrifice (day 20th of pregnancy).

Results: No significant differences in general physical health, behaviours and maternal body weights throughout the treatment period. Furthermore, the mean length of the oestrous cycle was not statistically affected, even though a few rats displayed irregular cycles. In addition, there were no significant differences in the mating and pregnancy indices, the number of corpora lutea and implantation sites, percentages of pre-implantation loss and post-implantation death and reproductive organ weights. Foetal parameters such as the number of live fetuses, sex ratio and body weight were also not statistically affected by AEHS. Ultimately, there were no signs of teratogenicity observed since none of the fetuses exhibited congenital malformations.

Conclusion: These findings suggest that the oral administration of AEHS up to 1,000 mg/kg/day did not pose any significant toxicity on the fertility and teratogenicity.

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DEVELOPMENT OF AN EFFECTIVE DISCHARGE PLANNING PROTOCOL: A MODIFIED DELPHI TECHNIQUE

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Introduction: Transition from hospital to home is a major concern for many health care providers, patients and care givers. To facilitate this transition, an effective discharge planning is required to address the concern.

Objectives: This study was conducted in three phases: to develop, validate and pilot an effective discharge planning protocol for patients underwent total knee replacement. This paper describes the application of Delphi technique in the development and validation of the discharge planning protocol.

Methods: Delphi technique was implemented to gain a consensus in a group of experienced healthcare professionals regarding an effective discharge planning. Using a purposive sampling method, 17 healthcare professionals from four disciplines were recruited. Based on the four Delphi principles, this study was conducted in six rounds through online communication application and email. The researcher initially developed a set of questions to guide the expert panel.

Results: After five rounds of Delphi process using a consensus level of 75% agreement, four major themes with 32 statements of an effective discharge planning framework was obtained. **DOES** model (**D**etect needs, **O**rganise tasks, **E**valuate outcomes and **S**upport groups) emerged from the five round of Delphi technique. This model was the basic concept used to develop the discharge planning protocol which the process was conducted in the final round of Delphi technique.

Conclusion: Delphi technique is a practical data collection approach which enable to reach consensus from various experts.

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