2015

Holden C, Otoom S. Bridging the gap: The need for research in the Middle East. Bahrain Med Bull 2015;37(2).

Al Banna M, Redha N, Abdulla F, Donnellan C, Nair B., Metacognitive Function Post-Stroke: A Review of Definition and Assessment, Journal of Neurology, Neurosurgery and Psychiatry, 2015, DOI: 10.1136/jnnp-2015-310305

Abstract

Metacognition is the conscious knowledge individuals have about their own cognitive capacities and the regulation of these activities through self-monitoring. The aim of this review was to identify the definitions and assessment tools used to examine metacognition in relation to stroke studies. A computer database search was conducted using MEDLINE, CINAHL, PsycINFO, Cochrane Reviews, Scopus and Web of Science. A total of 1412 publications were retrieved from the initial database search. Following the removal of unrelated articles, 34 articles remained eligible. 5 studies examined metacognition in relation to cognitive and/or emotional functioning, 4 examined the concept in relation to memory, while others investigated its relationship to driving, employment or restrictions in daily living. 12 studies examined metacognitive function exclusively in stroke. Only 1 study examined metacognition in the acute phase of stroke. 7 studies adhered to the standard definition of metacognition in line with the neuropsychological literature. The main assessment tools utilised included the Self-Regulation and Skills Interview (SRSI), the Self-Awareness of Deficits Interview (SADI), the Awareness Questionnaire (AQ) and the Patient Competency Rating Scale (PCRS). Assessment of metacognition has tended to focus on traumatic and other acquired brain injury in comparison to stroke. The majority of the studies that examined metacognition in stroke did not assess patients in the acute phase. The heterogeneity of assessment tools was in keeping with the variation in the definition of metacognition. The emergence of a standard metacognitive assessment tool may have important implications for future rehabilitative programmes.

Moss H, Donnellan C, O'Neill D, Hospitalization and Aesthetic Health in Older Adults., Journal of the American Medical Directors Association, 16, (2), 2015, p173.e11-6Journal Article, 2015 DOI: 10.1016/j.jamda.2014.10.019

Abstract

Objectives: To assess the impact of hospitalization on arts engagement among older people; and to assess perceptions of whether hospitals are aesthetically deprived environments.

Methods: A Survey of Aesthetic and Cultural Health was developed to explore the role of aesthetics before, during and after hospital. Study participants were n = 150 hospital in-patients aged >65. Descriptive and inferential statistics were used to analyze the data.

Main findings: Attendance at arts events was an important part of life for this sample and a large drop off was noted in continuation of these activities in the year post-hospital stay. Physical health issues were the main causes but also loss of confidence and transport issues. Film, dance, and music were the most popular arts for this sample prior to hospital stay. Noise pollution caused by other patients, lack of control over TV/radio, and access to receptive arts in hospital (reading and listening to music) were important issues for patients in hospital.

Conclusions: This study identifies a trend for decreasing exposure to arts beginning with a hospital stay and concludes that older people may need encouragement to resume engagement in arts following a hospital stay. There is relatively limited evidence regarding the nature of, and potential benefit from, aesthetics in healthcare and limited studies with rigorous methodology, and further research is needed to understand the aesthetic preferences of older people in hospital.

Donnellan C. hTe Baltes' model of successful aging and its considerations for geriatric care management, Journal of Aging Life Care, Fall, 2015

Abstract

This article aims to present the description and explanation regarding the application of the Baltes successful aging model of selection, optimization, and compensation (SOC) in the context of Aging Life Care / geriatric care. The SOC model is reviewed in terms of its theoretical aim and efforts to explain successful aging and also its application within healthcare research and practical settings. A brief overview of its theoretical background i.e. the concepts of successful aging and life span developmental psychology, are described including how healthy aging individuals adapt to everyday life situations using SOC strategies. The model is then discussed further in relation to any potential declines and losses imposed by illness or disease e.g. the consequences of health-related conditions.

Al Hannan F. and Culligan KG. Human resistin and the RELM of Inflammation in diabesity. Diabetology and Metabolic Syndrome 7(1):54 • June 2015. DOI: 10.1186/s13098-015-0050-3

Abstract

The initial discovery of resistin and resistin-like molecules (RELMs) in rodents suggested a role for these adipocytokines in molecular linkage of obesity, Type 2 Diabetes mellitus and metabolic syndrome. Since then, it became apparent that the story of resistin and RELMs was very much of mice and men. The putative role of this adipokine family evolved from that of a conveyor of insulin resistance in rodents to instigator of inflammatory processes in humans. Structural dissimilarity, variance in distribution profiles and a lack of corroborating evidence for functional similarities separate the biological functions of resistin in humans from that of rodents. Although present in gross visceral fat deposits in humans, resistin is a component of inflammation, being released from infiltrating white blood cells of the sub-clinical chronic low grade inflammatory response accompanying obesity, rather than from the adipocyte itself. This led researchers to

further explore the functions of the resistin family of proteins in inflammatory-related conditions such as atherosclerosis, as well as in cancers such as endometrial and gastric cancers. Although elevated levels of resistin have been found in these conditions, whether it is causative or as a result of these conditions still remains to be determined.

Faqi MK, Al-Qahtani M, Elmusharaf K. The Roles of Procalcitonin, C-Reactive Protein and Erythrocyte Sedimentation Rate in Predicting Bacteremia. J Immunol Infect Dis 2015, 2(3): 302 doi: 10.15744/2394-6512.1.206

Abstract

Background and objectives: The early differentiation between infectious and non-infectious sepsis remains a challenge due to the lack of a reliable, ready available and quick biomarker of bacterial sepsis. This study aims to determine the diagnostic accuracies of procalcitonin (PCT), C-reactive protein (CRP) and erythrocyte sedimentation rate (ESR) as individual and combined predictors of bacterial sepsis, when compared to the gold standard microbiological cultures. Patients and methods: Forty-three patients were included in this study, provided they fulfilled the criteria established by ACCP/SCCM consensus conference for systemic inflammatory response syndrome (SIRS) and sepsis. The primary outcome was to determine the best predictor of bacteremia. The diagnostic accuracies of PCT, CRP and ESR, individually and in combinations were calculated. Results: Among 43 patients, 27 yielded positive blood cultures. Procalcitonin, CRP and ESR, individually, were able to predict 74.1% (95% CI; 0.553 to 0.868), 66.7% (95% CI; 0.478 to 0.814) and 70.4% (95% CI; 0.515 to 0.842), of positive blood cultures, respectively. In comparison, interpreting PCT & CRP, PCT & ESR and PCT, CRP & ESR in combinations were able to predict 51.9% (95% CI; 0.340 to 0.693), 59.3% (95% CI; 0.407 to 0.755), 37.0% (95% CI; 0.215 to 0.558). Conclusion: Procalcitonin, on its own, is the best predictor of bacteremia. Although PCT is an indispensible biomarker for the early prediction of bacteremia, careful evaluation of patients' clinical status and other laboratory markers are also crucial.

Amin Banaga, Elaf Mohammed, Rania Siddig, Diana Salama, Sara Elbashir, Mohamed Khojali, Rasha Babiker, Khalifa Elmusharaf, Mamoun Homeida. Causes of end stage renal failure among haemodialysis patients in Khartoum State/Sudan. BMC Research Notes 2015 Sep, 8:502 http://dx.doi.org/10.1186/s13104-015-1509-x

Abstract

Background: End stage renal failure (ESRF) has become a major health problem in Sub Saharan Africa (SSA). There were limited data about causes of ESRF in the Sudan.

Methods: This is a cross sectional hospital based descriptive study. The subjects of the study are ESRF adults' patients on regular haemodialysis treatment in 15 haemdoialysis centres in Khartoum State—Sudan. Clinical and epidemiological data were obtained from 1583 patients. The medical files of each patient were reviewed to identify the cause of ESRF. Concerning the causes of ESRF, diabetes was diagnosed based on the past medical history and result of the

glucose tolerance test, hypertension was diagnosed based on past history of hypertension based on blood pressure of more than 140/90 mmHg, glomerulonephritis was diagnosed based on results of previous kidney biopsies and on clinical grounds, polycystic kidney disease and obstructive uropathy were diagnosed based on abdominal ultrasound and other imaging modalities, sickle cell anaemia was diagnosed based on the result of haemoglobin electrophoresis, systemic lupus erythematosus was diagnosed based on the clinical criteria in addition to lab results of auto antibodies, and analgesic nephropathy was diagnosed based on past medical history of chronic analgesic drugs usage with no other identifiable risk factors. We included all ESRF patients on regular haemodialysis treatment. We excluded ESRF patients less than 18 years old.

Results: The results showed that the mean age of ESRF Patients was 49 ± 15.8 (years) and 63.4 % were male and 76.3 % were unemployed. The mean duration of haemodialysis is 4.38 ± 4.24 (years). The most common cause of ESRF in our patients was hypertension (34.6 %) followed by chronic glomerulonephritis (17.6 %), diabetes mellitus (12.8 %), obstructive uropathy (9.6 %), autosomal dominant poly cystic kidney disease (ADPKD) (4.7 %), chronic pyelonephritis (4.6 %), analgesic nephropathy (3.5 %). However in (10.7 %) no cause was found. In patient aged less than 40 years old the leading cause of ESRF was glomerulonephritis (29.3 %) followed by hypertension (25 %). In patient aged between 40 to 60 years old the leading cause of ESRF was hypertension (38.5 %) followed by diabetes mellitus (14 %). In patient aged older than 60 years the leading cause of ESRF was hypertension (38.4 %) followed by diabetes mellitus (23.3 %).

Conclusions: ESRF in Sudan affects the economically productive age group; unemployment rate among ESRF patients is high. The study showed that hypertension is a leading cause of ESRF in Sudan followed by chronic glomerulonephritis. Hypertension and diabetes mellitus are the leading causes of ESRF among patients over 40 years old.

Elmusharaf K, Byrne E, O'Donovan D. Strategies to increase demand for maternal health services in resource-limited settings: challenges to be addressed. BMC Public Health. 2015 Sep 8;15(1):870. http://dx.doi.org/10.1186/s12889-015-2222-3

Abstract

Background: Universal health access will not be achieved unless women are cared for in their own communities and are empowered to take decisions about their own health in a supportive environment. This will only be achieved by community-based demand side interventions for maternal health access. In this review article, we highlight three common strategies to increase demand-side barriers to maternal healthcare access and identify the main challenges that still need to be addressed for these strategies to be effective.

Discussion: Common demand side strategies can be grouped into three categories:(i) Financial incentives/subsidies; (ii) Enhancing patient transfer, and; (iii) Community involvement. The main challenges in assessing the effectiveness or efficacy of these interventions or strategies are the lack of quality evidence on their outcome and impact and interventions not integrated into

existing health or community systems. However, what is highlighted in this review and overlooked in most of the published literature on this topic is the lack of knowledge about the context in which these strategies are to be implemented.

Summary: We suggest three challenges that need to be addressed to create a supportive environment in which these demand-side strategies can effectively improve access to maternal health services. These include: addressing decision-making norms, engaging in intergenerational dialogue, and designing contextually appropriate communication strategies.

Abstract

Background: Dengue is caused by an arthropod-borne flavivirus. Infection can be either primary or secondary based on serology, with each stage of the disease characterized by specific serological conversion and antibody formation. Further study is needed to fully identify the factors associated with and predisposing to dengue infection. The objective of this study was to identify socio-demographic factors associated with the prevalence of dengue serotypes in Kassala State in the eastern part of Sudan in 2011.

Methods: This was a cross-sectional community-based study with 530 participants who were randomly selected through multi-stage cluster sampling. Dengue serotype prevalence was determined using capture Enzyme-linked immunosorbent assay (ELISA). ELISA IgG. A multivariate logistic regression model was designed to measure the strength of associations between socio-demographic factors and dengue serotype prevalence. All participants who tested negative for dengue were used as the statistical reference group.

Results: From this study, the prevalence of dengue in Kassala was estimated to be 9.4 % (95 % CI: 7.1–12.3). Lack of knowledge about dengue fever disease (OR 2.8, 95 % CI: 1.24–6.53) and a household density of more than 3 people per room (OR 2.1, 95 % CI: 1.06–4.09) were the most important factors associated with dengue infection among the study population.

Conclusions: Community-oriented interventions are needed to modify existing social behaviors to reduce the risk of dengue in the eastern part of Sudan. Additional studies are also required in this field.

Abstract

Aim: The study aims to examine whether there were differences in self-directed learning readiness (SDLR) between students who entered medicine with a local Bahraini schools certificate and those who entered with an international schools certificate.

Results: We analysed how self-managment, desire for learning, self-control and total SDLR scores varied in relation to the student's previous exit award: 'A' levels (or equivalent) or Bahrain Secondary School (BSS) certificate. BSS certificate students had a significantly lower mean standardised desire for learning score (63.5) compared to those with 'A' levels and equivalent (73.6; p=0.003). BSS certificate students also had a significantly lower mean total self-directed learning readiness score (192.3) compared to those with 'A' levels and equivalent (214.5; p=0.015). When we controlled for all other factors, secondary school award certificate was the only independent predictor of self-control (standardised beta 0.4; p=0.02) and SDLR (standardised beta 0.36; p=0.043)

Conclusion: Self-directed learning is a key skill in the modern curriculum. Students who exit with a local Middle Eastern secondary school certificate are finding it difficult for prepare themselves for independent learning in medical school. This poses a challenge for institutions bringing a more active-learning type of curriculum to the Middle East.

Amin S. Banaga, Elaf B. Mohammed, Rania M. Siddig, Diana E. Salama, Sara B. Elbashir, Mohamed O. Khojali, Rasha A. Babiker, Khalifa Elmusharaf, Mamoun M. Homeida. Why Did Sudanese End Stage Renal Failure Patients Refuse Renal Transplantation?. Open Journal of Nephrology, 2015, 5, 35-39 http://dx.doi.org/10.4236/ojneph.2015.52005

Abstract Renal transplantation remains the most effective treatment of End Stage Renal Failure (ESRF). In this cross sectional study we explore the reasons behind refusal of renal transplantation among adults' Sudanese haemodialysis patients. The subjects of the study are ESRF adults' patients on regular haemodialysis treatment in 15 haemdoialysis centres in Khartoum/Sudan. All patients who are on regular haemodialysis were interviewed by questionnaire to explore the reasons of refusal of renal transplantation. A total of 1583 ESRF adults' patients on regular haemodialysis have been participated in the study, 381 (24.1%) patients refused kidney transplantation. The mean age of patients refusing kidney transplantation was (58.5 + 15.1 years); 77.4% of them were ≥50 years old, 59.2% were males and 88.1% were unemployed, patients older than 50 years old and unemployed are tend to refuse renal transplantation (P < 0.001). The main reason of refusal was that the patients refuse to accept kidney from living donors (34.8%). 17.6% of patients decline kidney transplantation because of financial reason, 18.1% of patients refused to do transplantation because of fear of transplant surgery, 15.7% of patients believe that kidney transplantation is against their religious values, 11.9% of patients refused transplantation because they don't have enough knowledge on renal transplantation, only 0.5% of patients refuse transplantation because of side effect of immunosuppressive drugs. In conclusion, in this study we found that elderly and unemployed ESRF patients tend to refuse renal transplantation, the most important reason behind refusal of renal transplantation is refusal of accepting kidney donation from living related donors. This reflects the need for

development of cadaveric donors program in the Sudan. ESRF patients need education and counseling on renal transplantation

Michael B Keogh, Duaa Ahmed, Catherine Abouzaid, Khalifa Elmusharaf. Awareness of Healthcare Workers to Total Parenteral Feeding in Neonatal Units. Bahrain Medical Bulletin 07/2015; 37(2): 114-116. http://www.bahrainmedicalbulletin.com/June_2015/TPN.pdf

Abstract

Background: The partnership between hospital policy and staff procedures needs to be coordinated. In the case of neonatal care, failures of this partnership can result into complications. Objective: To evaluate staff awareness, hospital policy and current procedures relating to total parenteral nutrition (TPN) in Neonatal Intensive Care Units in Bahrain. Design: A Self-Administered Questionnaire. Setting: NICU, King Hamad University Hospital (KHUH) and Salmaniya Medical Center (SMC), Bahrain. Method: The study population consisted of nurses and neonatal doctors in NICUs in King Hamad University Hospital and Salmaniya Medical Center. Participation in the study implied consent; the survey was anonymous. The self-administered questionnaire was distributed in August 2013 and consisted of 10 multiple-choice and open-ended questions. Result: Sixty-two (80%) were aware of the risks of administering TPN. Different policies and guidelines were followed depending on the institution. Fifty-four (69%) respondents thought that TPN preparation should be carried out under sterile conditions; 63 (80%) preferably by a pharmacist rather than in the ward by doctors or nurses. Low staff satisfaction was found in 19 (67%) because the pharmacy did not prepare the TPN. Conclusion: Although staff may have high knowledge and awareness to reduce TPN risks, there is a clear need for hospital policy to consider the needs of the end user to reduce the neonatal infections.

Mohamed Ismail, Shehab Khashaba, Khalifa Elmusharaf, Mahmoud Etman, Karim Abdel Hakim, Eamon Tierney. Misunderstanding of the Term " DNR " in a Middle-Eastern Teaching Hospital. Bahrain Medical Bulletin 07/2015; 37(2): 88-91. http://www.bahrainmedicalbulletin.com/June_2015/DNR.pdf

Background: Do-not-resuscitate (DNR) order has been practiced for many years; though it is one of the most commonly misunderstood and misinterpreted orders in medical practice. It has many ethical, legal, geographic, religious and cultural aspects that contribute to this misunderstanding. Objective: To assess the perception amongst the acute specialties who deal with DNR orders. Design: A Cross-Sectional Questionnaire Type Study. Setting: King Hamad University Hospital, Bahrain. Method: Anonymous questionnaire was designed. Physicians working in the acute specialties were included. The questionnaire included several general questions about when DNR should be implemented and what are the appropriate aspects of management that should be given. Result: Fifty doctors completed the questionnaire; 49 (98%) of the physicians thought that a hospital should have a DNR policy, 23 (46%) of the physicians believed that the DNR decision lies in the hands of the responsible doctor, 10 (20%) of the participants thought that it is a family decision only, whilst 17 (34%) thought that it is a joint decision by the family and the physician.

All of the physicians agreed that there should be no code blue activation in case of cardiopulmonary arrest of a DNR labeled patients. Conclusion: The term DNR should not be used as it is confusing and liable to misunderstanding. In addition, we need to educate healthcare professionals about the terminology of the management of end-of-life situations.

Sayed Himatt, Kamal EL Din Osman, Somia I. Okoued, Osama E. Seidahmed, Mark E. Beatty, Mohammed A. Soghaier, Khalifa Elmusharaf. Sero-prevalence of dengue infections in Kassala state in the eastern part of the Sudan in 2011. J Infect Public Health. 2015 Sep-Oct;8(5):487-92. doi: 10.1016/j.jiph.2015.04.023

Abstract:

Dengue fever is a vector-borne disease that is transmitted to humans by infected Aedes aegypti mosquitoes. The eastern part of the Sudan is one of the regions that is affected by dengue virus circulation. In this study, we estimated the prevalence of dengue infections in the Kassala state in the eastern part of the Sudan. The study objective was to estimate the sero-prevalence of dengue IgG/IgM antibodies in the Kassala locality in 2011. This was a cross sectional community-based study that utilized a multi-stage cluster sampling technique regarding the probability sampling the study participants. Capture ELISA serological techniques were used for both IgM and IgG, with the specific cut-offs for each set by the manufacturer. The prevalence of dengue infection was found to be 9.4% (95% CI: 7.1–12.3). In conclusion, there is evidence that the dengue virus is being transmitted in Kassala. Disease surveillance, including the clinical, serological and entomological components, should be strengthened, and additional epidemiological studies are needed to better understand of the disease burden and effects in the area.

Al-Eryani YA, Joseph-Titus C, Elmusharaf K, McGuigan K, Keogh MB. Solar Disinfection of Water (SODIS). Bahrain Medical Bulletin. 2015 Sep;37(3).

ABSTRACT

Objective: To evaluate the efficacy of SODIS treatment in inactivating E-coli and Enterococcus faecalis in 1.5 L transparent PET (polyethylene terephthalate) plastic bottles and 19 L carbamide water dispensers. Design: A Laboratory-Based Scientific Study. Setting: Microbiology Unit, RCSI-MUB. Method: 1.5 L transparent PET plastic bottles and 19 L carbamide water dispensers were filled with deionized water and inoculated with 1×10^6 bacteria/ml. The reactors were left in direct sunlight for 6 hours, which is the recommended time for SODIS treatment. Samples were taken periodically, and cell number, pH and temperature analysis was documented. Result: Six-log decrease in bacteria concentration was observed in both of the reactors. There was no difference in terms of bacterial elimination in both reactors. Conclusion: Both PET and carbamide water containers, 1.5 L and 19 L were efficiently cleared of bacteria when exposed to sunlight. Solar disinfection (SODIS) appears to be independent of the type of container.

Keogh MB, Castro-Alférez M, Polo-López MI, Calderero IF, Al-Eryani YA, Joseph-Titus C, Sawant B, Dhodapkar R, Mathur C, McGuigan KG, Fernández-Ibáñez P. Capability of 19-L polycarbonate plastic water cooler containers for efficient solar water disinfection (SODIS): Field case studies in India, Bahrain and Spain. Solar Energy. 2015 Jun 30;116:1-1.

Abstract

The small treated volume (typically ~2 L) associated with polyethylene terephthalate (PET) bottles that are most frequently used in solar water disinfection (SODIS), is a major obstacle to uptake of this water treatment technology in resource-poor environments. In order to address this problem we have conducted a series of experiments in Spain, Bahrain and India, to assess the efficacy of large volume (19 L) transparent plastic (polycarbonate) water cooler/dispenser containers (WDCs) as SODIS reactors to inactivate Escherichia coli and Enterococcus faecalis, under strong natural sunlight. Reduction values of 6 log10 units (LRV = 6.0) have been observed using WDCs in each location. Additional comparisons between 2-L PET bottles and 19-L indicate that WDCs provide bacterial inactivation similar in both systems. SODIS disinfection experiments in turbid water (100 NTU) in both reactors showed very good inactivation efficiency. LRVs of 6 were obtained for E. coli in both WDC and 2-L PET bottles, and in the case of E. faecalis LRV = 5 and 6 were observed in Spain and Bahrain, respectively. These studies demonstrate that under conditions of strong sunlight and mild temperature, 19 L water dispenser containers can be used to provide adequate volumes of SODIS treated water for households or larger community applications such as schools or clinics in the developing world.

Keogh MB, Partap S, O'Brien FJ, Daly JS. Flow Perfusion Bioreactor Can Enhance Osteogenesis on a Collagen GAG Scaffold. Tissue Engineering and Regenerative Medicine International Society – EU Meeting -2010. Galway, Ireland

Abstract:

Introduction Flow perfusion bioreactors may be used to provide mechanostimulatory effects to cells and to improve cell distribution within a biomaterial. This study assessed the use of a flow perfusion bioreactor to improve cell distribution and osteogenesis within a collagen glycosaminoglycan (CG) scaffold. Materials and Methods CG scaffolds were fabricated by a lyophilisation technique and cut to size (12mmØ) as previously reported 1 . 4x10 6 hFOB 1.19 pre-osteoblast cells were seeded onto each scaffold and pre-cultured under standard conditions for 6 days. Bioreactor groups were exposed to 3 x 1 hr bouts of steady flow (1ml/min) with each bout being followed by 7 hrs of no flow (to prevent cellular desensitization) 2 for one day. Constructs were then cultured under osteogenic conditions for a further 28 days. Cellular distribution, mineralization, gene and protein expression of a number of bone formation markers and mechanical properties of the constructs were analyzed using techniques such as Haematoxylin and Eosin and alizarin red staining, real-time PCR and compression testing. Results Both metabolic viability and cell number appeared similar between bioreactor and static culture groups. Histologically, cells in the constructs following bioreactor culture appeared in clusters

which increased in distribution over time. In comparison, the static groups demonstrated a more uniform distribution, however, cells tended to aggregate on the periphery causing encapsulation. Osteogenesis was supported in both static & bioreactor groups. The early bone formation marker alkaline phosphatase gave a 3 fold increase in bioreactor groups at 21 days. The mid stage markers osteopontin and osteonectin showed similar trends with bioreactor groups providing higher expression levels earlier than the static groups. The late stage marker of bone formation, osteocalcin gave a 1.25 fold increase at 21 days. A 2 fold increase in alizarin red mineralisation was found in static groups at 28 days over bioreactor groups, which was due to the encapsulation effect. No difference was observed in mechanical strength between static or bioreactor groups. Fig.1. Early and late stage osteogenic gene expression; static versus bioreactor Discussion and Conclusions Flow perfusion bioreactors have been shown to stimulate osteoblasts by mechanoregulation 1 . We find that the bioreactor produced a more mature osteogenic state than static culture as well as discouraging peripheral encapsulation. This may be useful for in vitro applications as the presence of a capsule restricts nutrient diffusion and waste removal from a cell seeded construct. There was also no detrimental effect on the mechanical properties of the scaffold.

Abou-Zaid CM. Assessing the self-directed learning skills of the undergraduate nursing students in a Medical University in Bahrain: A quantitative study. Medical Research Archives. 2015 Jun 1(3). DOI: http://dx.doi.org/10.18103/mra.v0i3.25

Abstract

This quantitative study discusses the concerns with the self-directed learning (SDL) skills of the undergraduate nursing students in a medical university in Bahrain. The nursing undergraduate student SDL study was conducted taking all 4 years and compiling data collected from the students themselves by survey questionnaire. The aim of the study is to understand and change the attitudes of self-directed learning among the undergraduate students. The SDL of the undergraduate student nurses has been noticed to be lacking and motivation to actually perform without supervision while out-with classrooms are very low. Their use of the resources available on the virtual learning environment and also within the university is not as good as it should be for a university student at this level. They do not use them to their own advantage. They are not prepared for the transition from high school to an academic environment such as a university or college. For some students it is the first time in their academic lives that they have faced sharing a classroom with the opposite sex. For some this is a major issue and we as academics need to be aware of all issues that they come to higher education with.

Horobin RW, Stockert JC, Rashid-Doubell F. Uptake and localization mechanisms of fluorescent and colored lipid probes. Part 2. QSAR models that predict localization of fluorescent probes used to identify ("specifically stain") various biomembranes and membranous organelles. Biotech Histochem 2015;90(4):241-254. DOI: 10.3109/10520295.2015.1005129

Abstract

We discuss a variety of biological targets including generic biomembranes and the membranes of the endoplasmic reticulum, endosomes/lysosomes, Golgi body, mitochondria (outer and inner membranes) and the plasma membrane of usual fluidity. For each target, we discuss the access of probes to the target membrane, probe uptake into the membrane and the mechanism of selectivity of the probe uptake. A statement of the QSAR decision rule that describes the required physicochemical features of probes that enable selective staining also is provided, followed by comments on exceptions and limits. Examples of probes typically used to demonstrate each target structure are noted and decision rule tabulations are provided for probes that localize in particular targets; these tabulations show distribution of probes in the conceptual space defined by the relevant structure parameters ("parameter space"). Some general implications and limitations of the QSAR models for probe targeting are discussed including the roles of certain cell and protocol factors that play significant roles in lipid staining. A case example illustrates the predictive ability of QSAR models. Key limiting values of the head group hydrophilicity parameter associated with membrane-probe interactions are discussed in an appendix.

Abstract

We provide detailed protocols for applying the QSAR decision-rule models described in Part 2 of this paper. These procedures permit prediction of the intracellular localization of fluorescent probes or of any small molecular xenobiotic whether fluorescent or not. Also included is a set of notes that give practical advice on various possible problems and limitations of the methods, together with a flow chart that provides a graphical algorithmic summary of the QSAR models.

Abstract

Aim: The study aims to examine whether there were differences in self-directed learning readiness (SDLR) between students who entered medicine with a local Bahraini schools certificate and those who entered with an international schools certificate.

Results: We analysed how self-managment, desire for learning, self-control and total SDLR scores varied in relation to the student's previous exit award: 'A' levels (or equivalent) or Bahrain Secondary School (BSS) certificate. BSS certificate students had a significantly lower mean standardised desire for learning score (63.5) compared to those with 'A' levels and equivalent

(73.6; p=0.003). BSS certificate students also had a significantly lower mean total self-directed learning readiness score (192.3) compared to those with 'A' levels and equivalent (214.5; p=0.015). When we controlled for all other factors, secondary school award certificate was the only independent predictor of self-control (standardised beta 0.4; p=0.02) and SDLR (standardised beta 0.36; p=0.043)

Conclusion: Self-directed learning is a key skill in the modern curriculum. Students who exit with a local Middle Eastern secondary school certificate are finding it difficult for prepare themselves for independent learning in medical school. This poses a challenge for institutions bringing a more active-learning type of curriculum to the Middle East.

Borgan SM, Jassim GA, Marhoon ZA, Ibrahim MH. The lifestyle habits and wellbeing of physicians in Bahrain: A cross-sectional study. BMC Public Health 2015;15(1).

Abstract

Background: Lifestyle habits of physicians are of paramount importance both because they influence the physician's own health and because these habits have been shown to affect patients' care. There is limited information on physician health and lifestyle habits in Bahrain. Methods: In a cross-sectional study design, an anonymous self-administered questionnaire that assesses wellbeing and lifestyle habits was distributed to a random sample of 175 out of 320 primary health care physicians in Bahrain. Descriptive analyses were performed, and the variables were cross-tabulated using SPSS version 20.0. Results: 152 physicians agreed to participate in the study. Respondents were 67.1 % female with a mean age of 45 (SD = 10). The majority were of Bahraini nationality. The most prevalent reported health conditions were hyperlipidaemia (25.5 %), hypertension (20.3 %), and diabetes (11.0 %). Only 29.6 % of physicians reported performing $\geq$ 30 min of exercise in a usual week. Of physicians exercising $\geq$ 30 min weekly, only 13 % exercised $\geq$ 5 days weekly. 98.0 % report never drinking, 1.3 % report previously drinking, and 0.7 % report drinking less than once weekly. The average body mass index (BMI) was 27.8 (SD = 5), with 39 % of physicians being overweight and 33 % obese. BMI was directly associated with sleep time (P0.027, r^2 = 0.034), age (P < 0.01, r^2 = 0.179), male gender (P = 0.031, r^2 = 0.054), and a known diagnosis of hypertension (P = 0.007, r^2 = 0.079) or hyperlipidaemia (P = 0.008, r^2 = 0.088). Conclusions: There is a clear pattern of unfavourable lifestyle habits and obesity among primary health care physicians in Bahrain. We encourage institutions and public health sectors to be more proactive in assisting physicians to attain healthier lifestyles.

Jassim GA, Whitford DL, Hickey A, Carter B. Psychological interventions for women with non-metastatic breast cancer. Cochrane Database Syst Rev 2015;5:CD008729.

Abstract

Background: Breast cancer is the most common cancer affecting women worldwide. It is a distressing diagnosis and, as a result, considerable research has examined the psychological sequelae of being diagnosed and treated for breast cancer. Breast cancer is associated with

increased rates of depression and anxiety and reduced quality of life. As a consequence, multiple studies have explored the impact of psychological interventions on the psychological distress experienced after a diagnosis of breast cancer.

Objectives: To assess the effects of psychological interventions on psychological morbidities, quality of life and survival among women with non-metastatic breast cancer.

Search methods: We searched the following databases up to 16 May 2013: the Cochrane Breast Cancer Group Specialised Register, CENTRAL, MEDLINE, EMBASE, CINAHL and PsycINFO; and reference lists of articles. We also searched the World Health Organization International Clinical Trials Registry Platform (WHO ICTRP) search portal and ClinicalTrials.gov for ongoing trials in addition to handsearching.

Selection criteria: Randomized controlled trials that assessed the effectiveness of psychological interventions for non-metastatic breast cancer in women.

Data collection and analysis: Two review authors independently appraised and extracted data from eligible trials. Any disagreement was resolved by discussion. Extracted data included information about participants, methods, the intervention and outcome.

Main results: Twenty-eight randomised controlled trials comprising 3940 participants were included. The most frequent reasons for exclusion were non-randomised trials and the inclusion of women with metastatic disease. A wide range of interventions were evaluated, with 24 trials investigating a cognitive behavioural therapy and four trials investigating psychotherapy compared to control. Pooled standardised mean differences (SMD) from baseline indicated less depression (SMD -1.01, 95% confidence interval (CI) -1.83 to -0.18; P = 0.02; 7 studies, 637 participants, I(2) = 95%, low quality evidence), anxiety (SMD -0.48, 95% CI -0.76 to -0.21; P = 0.0006; 8 studies, 776 participants, I(2) = 64%, low quality evidence) and mood disturbance (SMD -0.28, 95% CI -0.43 to -0.13; P = 0.0003; 8 studies, 1536 participants, I(2) = 47%, moderate quality evidence) for the cognitive behavioural therapy group than the control group. For quality of life, only an individually-delivered cognitive behavioural intervention showed significantly better quality of life than the control with an SMD of 0.65 (95% CI 0.07 to 1.23; P = 0.03; 3 studies, 141 participants, I(2) = 41%, very low quality evidence). Pooled data from two group-delivered studies showed a non-significant overall survival benefit favouring cognitive behavioural therapy compared to control (pooled hazard ratio (HR) 0.76, 95% CI 0.25 to 2.32; P = 0.63; 530 participants, I(2) = 84%, low quality evidence). Four studies compared psychotherapy to control with one to two studies reporting on each outcome. The four studies were assessed as high risk of bias and provided limited evidence of the efficacy of psychotherapy. Adverse events were not reported in any of the included studies.

Authors' conclusions: A psychological intervention, namely cognitive behavioural therapy, produced favourable effects on some psychological outcomes, in particular anxiety, depression and mood disturbance. However, the evidence for survival improvement is still lacking. These

findings are open to criticism because of the notable heterogeneity across the included studies and the shortcomings of the included studies.

Dakhel AA, Cassidy S, Jasim KE, Henari FZ. Synthesis and characterisation of curcumin-M (M = B, Fe and Cu) films grown on p-Si substrate for dielectric applications. Microelectron Reliab 2015;55(2):367-373.

Abstract

Metal-coordinated yellow curcumin was extracted from green natural sources and sublimated in vacuum to prepare thin films on p-Si and glass substrates for dielectric and optical investigations. The synthesised curcumin complexed with the metals boron, iron, and copper powders were crystalline while the prepared films were amorphous. The optical absorption spectrum of the prepared films showed similar two absorption band structure in the visible range. The onset energy of the main optical absorption band of the film was determined using the Tauc technique. The dielectric properties of this material were systematically studied for future applications in metal-insulator-semiconductor MIS field of applications. The complex dielectric properties were studied in the frequency range of 1-1000 kHz and was analysed. The important find is a large optoelectronic sensitivity so that the integral optical responsivity (S∗) reaches ~1.0 A/W and the electrical conductivity increases under light illumination by ~400-1000%. Generally, Curcumin metal complex can be used in small-k environmentally friendly production of microelectronic and optoelectronic devices.