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薰衣草精油對吸菸男大學生午睡睡眠品質之研究

The Study of the Lavender-Oil Effect on Nap Quality in Male University Students with Smoking

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摘 要：吸菸之癮君子經常出現頭痛、失眠及睡眠品質不佳等情況，已嚴重干擾日常作息及生活。而已知精油有抒解壓力、放鬆肌肉緊張、改善睡眠等功效。然而，很多芳香療法調查睡眠障礙大多為參與者本身自述經驗，較為不客觀。因此本研究企圖利用睡眠多項腦波檢查系統，檢測薰衣草精油對吸菸大學生午睡睡眠品質的影響，以實際測量的睡眠腦波數據統計，來提供較客觀的芳療評估。本研究設計為橫斷研究法，研究對象為新竹市某大學吸菸男學生共 40 名，年齡介於 18 到 24 歲，採隨機分配為實驗組和對照組各 20 名，兩組紀錄午睡時間以三小時為限。實驗結果顯示，使用薰衣草精油處理組，其睡眠期清醒時間（29±11 vs. 76±14 分鐘）、清醒次數（3.9±3.8 vs. 7.3±4.7 次）和下肢抖動次數（3.6±2.9 vs. 5.2±1.8 次）均顯著減少，而睡眠期內睡著的時間較對照組顯著的增加（97±12 vs. 58±14 分鐘），因此整體

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睡眠效率較對照組提升（77±10 vs. 52±12 %）。薰衣草精油處理使睡眠週期淺眠期睡眠（S2）明顯減少（9.5±8.1 vs. 4.4±2.0），而快速動眼期（REM）明顯增加（40.8±11.8 vs. 27.8±21.2）。這些結果推測薰衣草精油吸入影響腦部電位活性，藉由減少睡眠週期的淺眠期睡眠（S2）和增加快速動眼期（REM)，進而提升午睡睡眠效率和改善睡眠品質。因此，薰衣草精油是具有潛力改善睡眠品質之替代性物質。

關鍵詞： 薰衣草精油、睡眠週期、睡眠品質、吸菸、午睡

Abstract：The addicted smokers always complain about headache, insomnia, and ill sleep quality which seriously disturb daily regularity. It is known that essential oil components by inhalation could affect electric potential activity in brain which had effect of stress relief, muscle relaxation and sleep condition improvement. However, some survey of aromatherapy appears to be based on a history of traditional use and anecdotal reports; there is little scientific evidence for many of claims made in aromatherapy. This study attempts to evaluate the effect of lavender oil on nap quality in university students with smoking by polysomnography (PSG). By means of statistics on measuring brain waves in sleep provide much more objective evaluation on aromatherapy. This is cross-sectional design. The sample size is male university students with smoking in Taiwan. Age is 18 to 24 years. The 40 students were randomly assigned to receive lavender oil or propylene glycol: experiment group (20 students); control group (20 students). To record the nap time for 3 hours limit. The result indicates that effect of the lavender oil was significantly decreased awake time (76±14 vs. 29±11 min) and awake frequency (7.3±4.7 vs. 3.9±3.8 times) and legs trembling definitely (5.2±1.8/time vs. 3.6±2.9/time) during sleep period. Besides, effect of the lavender oil was increased wake time during sleep period (58±14 vs. 97±12 min). Generally speaking, lavender oil prominently raised sleeping efficiency percentage as compared to propylene glycol (52±12 vs. 77±10 %). On sleeping cycle, effect of the lavender oil was significantly decreased S2 stage (9.5.±8.1 vs. 4.4±2.0) and increased REM stage (27.8±21.2 vs. 40.8±11.8). All these outcomes point to the functions of lavender oil that it was supposed that lavender oil inhalation by those who smokes affected brain electric activity and decreased S2 stage and increased REM stage in sleeping cycle. Thus, lavender oil effectively raised sleeping efficiency and improved sleeping quality in nap time. It is a potential alterative material to improve the quality of sleep.

Key words：Lavender oil, Sleep stage, Sleep quality, Smoking, Nap

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長期照護機構住民生活品質之影響因素探討

Factors Influencing the Quality of Life of Residents at Long-term Care Facility

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摘　要：本研究旨在探討長期照護機構住民生活品質之影響因素。採用橫斷式調查研究設計，以方便取樣選取北部某長期照護機構之住民為研究對象，共 60 位。研究工具採結構式問卷，包括基本屬性、巴氏日常生活活動量表、老年憂鬱量表、社會支持量表及台灣簡明版世界衛生組織生活品質量表。以 SPSS18.0 版進行資料分析，結果顯示住民的年齡及入住機構時間與生理健康範疇生活品質有顯著差異（p<0.05）；住民的性別、主要照顧者及入住機構時間與心理健康範疇、環境範疇生活品質有顯著差異（p<0.05）；住民的憂鬱程度與生活品質呈顯著負相關；社會支持與生活品質呈顯著正相關（p<0.05）。運用複迴歸分析結果，生活品質之預測因子包括性別、入住機構時間、憂鬱程度及社會支持，解釋生活品質各項範

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疇之總變異量為 10%-49%。研究結果可提供長期照護機構工作人員擬照護措施之參考，以期改善住民之生活品質。

關鍵詞：機構住民、憂鬱程度、社會支持、生活品質

Abstract: The purpose of this study was to explore factors associated with the quality of life (QOL) of residents at long-term care facility. This is a cross-sectional study. Purposive sampling was used to collect data from 60 residents living in a long-term care facility in northern Taiwan. The instruments included the demographic data, Activities of Daily Living Scale, Geriatric Depression Scale Short Form, Inventory of Socially Supportive Behavior, and World Health Organization Quality of Life-BREF-Taiwan questionnaire (WHOQOL-BREF). The collected data were analyzed by using SPSS 18.0 vision. The results showed that the age and length of residence were significantly different on physical domain of quality of life; gender, primary caregiver and length of residence were significantly different on psychological and environmental domains of QOL (p<0.05). Social support was significantly positive related to QOL. Depression was significantly negative related to QOL. Using a multiple stepwise regression analysis, the male, length of residence, social support, and depression were significantly predictors of QOL. These factors were found to explain from 10% to 49% variance of QOL. Finding of this study may facility stuffs' understanding of the factors that influenced QOL for residents. This enabled facility staff to provide difference interventions for improving QOL of the facility residents.

Key words: Facility residents, Depression, Social support, Quality of life.

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台灣醫院人體試驗委員會組成之性別分析

Taiwan Hospital IRB Composition of Gender Analysis

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摘 要：人體試驗為近十年的新興名詞與臨床醫療研究發展趨勢，人體試驗倫理委員組成方面，依據衛福部所擬定的醫療政策中明文規定委員必須包含醫療專業及非醫療專業委員。本研究初步發現台灣醫學中心之人體試驗委員會成員大多數仍以男性醫療委員居多，女性委員則大部分以非醫療人員佔多數，例如社工員、律師、宗教人員等；而女性醫療委員部分，則一般為護理人員、藥師等背景居多，而女性醫師委員人數則佔極少數，僅多 1-2 位，其主要原因可歸納為三點：職業結構問題（台灣臨床醫師仍以男性佔大多數）、權力結構（醫師性別在臨床上的權力差異或者男性醫師習慣採用非醫師身份之女性委員來展現其權力抗衡）、動機誘因（醫院相關委員會大都由醫療主管來擔當，而醫療主管大都為男性，因此女性醫師參與委員會機會不多，相對降低其參與動機）。台灣醫療界如果要有效推動「性別主流化」，單憑婦女團體來發聲仍顯不足，建議必須藉由再教育的方式，讓人體試驗委員會性別意識有正確的認知，增加其敏感度。其次對於性別與人體試驗之關係，在委員會性別合理比率下，透過不同性別的參與和對話，不僅有助於提升性別意識，更對受試者的權益有所保護。

關鍵詞：人體試驗委員、性別主流化、性別影響評估、性別權力測度、女性主義生命倫理

Abstract：Institutional Research Review is the new popular terms nearly a decade, and it is also the

development trend of clinical research. In terms of the circular of Ministry of Health and Welfare, the members of Taiwan Association of Institutional Review Board(IRB) must include medical professional and non-medical professional.The preliminary findings of this dissertation is that the majority member of IRB are male, and the majority female members are non-medical professional , such as social workers , lawyer; and religious related personnel , etc. In addition, the female members of the medical mostly are nurses and pharmacists, only 1-2 members are female physicians. This research explored three reasons: First of all, career structure (majority physicians are male); secondly, the power structure (physician gender impacted on the authority or male physician get used to have non-medical female member to show their power); thirdly, motivational incentives (majority of IRB member are hospital directors who mostly male, female physician had few opportunities to participate the IRB and dramatically impact on their participation and motivation).Women advocating is not sufficient to promote “gender mainstreaming” concept effectively in Taiwan Medical Field. It is recommended to adapt the re-education method, and ensure the IRB committee have a clear perception of gender awareness and enhance their sensitivity. Furthermore, with the reasonable gender ratio of IRB members, the institutional research will be benefit from improving gender awareness, but also the rights of research subjects protected.

Key words：Human trials committee, Gender mainstreaming, Gender impact assessment, Gender empowerment measure, Feminist bioethics

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配位化合物[$Cu_3(Phen)_2Br_3$] (phen=1,10-菲羅琳)之合成及晶體結構解析

Synthesis and Crystal Structure of Complex [$Cu_3(phen)_2Br_3$] (phen=1,10-phenanthroline)

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摘 要：利用水熱合成反應，得到含銅(I)錯合物，其化學式為[$Cu_3(phen)_2Br_3$] **(1)** (其中 phen = 1,10-菲羅琳)。利用 X-Ray 晶體繞射儀分析顯示，晶體屬單斜晶系，空間群 $C_{2/c}$，晶格參數：a = 10.068 (5) Å , b = 14.527 (7) Å , c = 16.309 (7) Å , β = 94.333 (11)°, V = 2378.5 (19) Å^3, wR(F^2) = 0.122 及 Z = 4. 繞射數據 I > 2σ(I) 2032. 結果顯示錯合物 **1**，含兩個不同環境的銅(I)離子，Cu(1)三配位，連接三個溴離子，Cu(2)是四配位，配位兩個溴離子，以及兩個 **N** 原子。兩個 Cu^I 離子的距離為 2.575(2)Å。由於菲羅琳芳香環的 π⋯π 吸引力，使得晶體更加穩定。而對稱單元結構中，Cu(1)原子存在無序，其佔有率為 50%的機率。

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關鍵詞：銅(I)錯合物、晶體結構、水熱合成、1,10-菲羅琳

Abstract：The title complex $[Cu_3(phen)_2Br_3]$ **(1)** (phen = 1,10-phenanthroline) has been synthesized and structurally characterized. It crystallizes in the monoclinic system, space group, $C_{2/c}$ with a = 10.068 (5) Å , b = 14.527 (7) Å , c = 16.309 (7) Å , β = 94.333 (11)°, *V* = 2378.5 (19) $Å^3$, wR(F^2) = 0.122 and Z = 4. The diffraction data I > 2σ(I) is 2032. There are two independent Cu^I ions, where Cu(1) is three-coordinated with three Br ions donor and Cu(2) is four-coordinated with two N atoms and two Br ions donor sets. The two Cu^I ions are well-separated with the nonbonding distance at 2.575(2) Å. The crystal packing is stabilized by weak intermolecular π⋯π interactions. In the structure, exhibits disorder of Cu(1) atom in the symmetry unit with 50% occupancies.

Key words：Copper (I) complex, Crystal structure, Hydrothermal Synthesis, 1, 10-phenanthroline.

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麴菌發酵之小分子大豆蛋白對血液中膽囊收縮素濃度之誘發效果

Induction of Serum Cholecystokinin by a Koji-Fermented Low-Molecule Soy portein

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摘 要：大豆水解蛋白擁有多種生理活性，其中包括刺激膽囊收縮素(cholecystokinin, CCK)產生，具有促進飽足感、抑制胃排空速率和降低攝食量等之生理功能。本研究的目的是想瞭解受試者攝食麴菌發酵之小分子大豆蛋白，在人體血液中誘發產生 CCK 分泌的情形及探討其所提供的飽足感官強度的效應。本試驗經元培科技大學人體試驗委員會審核同意。召募 20 名志願者，全部受試者年齡範圍限定 20-40 歲。試驗共進行兩次，間隔一週才進行下一次實驗，提供相同熱量之餐食，差別在於實驗組餐包有添加小分子大豆蛋白，對照組則未添加。於不同時段抽取受試者血液進行 CCK 濃度的分析，採單盲前後對照方式來瞭解攝食小分子大豆蛋白在短時間內血液中 CCK 濃度的變化情形。另以問卷方式，由受試者在不同時間點評估當時的飽足狀態。兩組受試者 CCK 的檢驗數值，在飯前(11:30AM)均無顯著差異。於午餐後 13:00PM 時，兩組 CCK 數值均上升達高峰後隨之下降，食用小分子大豆蛋白之實驗組較未食用小分子大豆蛋白對照組之血液中 CCK 數值有顯著較高的趨勢，實驗組高峰時 CCK

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值為 0.30±0.17 ng/ml；對照組為 0.19±0.13 ng/ml，兩組統計達顯著差異(p=0.0333)。同樣地，自我飽足感覺評分部分，於午餐後 13:00PM 兩組飽足感值亦隨之上升達高峰後緩慢下降，於 13:00PM 和 14:00PM 時實驗組飽足感值較對照組顯著增加，具統計顯著差異。由以上結果顯示，食用含小分子大豆蛋白能於餐後 1-2 小時短時間誘發 CCK 釋放，對飽足感有延遲的效益。

關鍵詞：膽囊收縮素、大豆蛋白、飽足感

Abstract: A Low-Molecule Soy Protein (LMSP) was produced with koji fermentation. The LMSP was formulated into buns to be consumed before lunch so as to study their cholecystokinin (CCK) induction effect. Twenty volunteers, aged between 20~40, were recruited and were provided buns with or without LMSP before lunch. The volunteers were asked to consume buns at 11:30AM and take lunch at 12:00PM. Satiety of the volunteers was evaluated with visual analog scales (VAS) and serum CCK concentrations were measured. Results showed that serum CCK concentration reached the highest point at 13:00PM and then declined. Volunteers took buns with or without LMSP showed average serum CCK value at 13:00PM was 0.30±0.17 and 0.19±0.13 ng/ml, respectively. The values showed statistical difference (p=0.0333). Satiety sensation was also evaluated and volunteers felt more satiety at 13:00 and 14:00PM after taking buns with LMSP before lunch. Summarized current study showed the LMSP could stimulate CCK secretion in human body and help raise satiety sensation at least 1 ~ 2 hr after meals.

Key words：Cholecystokinin, Soy protein, Satiety

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水熱合成含銦(Ⅲ)-苯-1,2-二甲酸配位錯合物及結構分析

Hydrothermal Synthesis, Crystal Structure of a Indium(Ⅲ) Complex with Benzene-1,2-dicarboxylate

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摘　要：將 $In_2(SO_4)_3 \cdot 9H_2O$ 及苯-1,2-二甲酸加水混合，在溫度 423 K 下，利用水熱合成反應，得到含銦(Ⅲ)的配位化合物，其化學式為$[In(1,2\text{-}BDC)(\mu_2\text{-}OH)(H_2O)]_n$ **(1)**, (1,2-BDC= 苯-1,2-二甲酸根)。利用元素分析儀、FT-IR 光譜儀及 X-Ray 晶體繞射儀測定產物晶體結構及性質。化合物 **1** 以銦(Ⅲ)離子為配位中心，配位六個氧原子，三個來自 1,2-BDC 的羧酸氧原子及一個配位水分子和兩個氫氧離子配位基，配位構成六配位且些微扭曲的正八面體型幾何結構，每個 1,2-BDC 配位基同時鄰接三個銦金屬。配位中心銦(Ⅲ)離子經由 1,2-BDC 配位基的連結形成二維的結構。晶體結構中含有傳統性的氫鍵作用力(O—H···O)，以及芳香環之間的 π···π 吸引力，使的晶體結構更穩定。其中鄰近互相平行芳香環的雙面角為 $1.1(2)^0$，兩個 1,2-BDC 的中心距離為 3.671(3)Å。研究指出化合物 **1** 具有對掌異構物 [弗萊克(Flack)參數為：0.48(3)]。

關鍵詞：水熱合成、苯-1,2-二甲酸、銦金屬、氫鍵

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Abstract ：The title polymer compound, $[In(1,2\text{-}BDC)(\mu_2\text{-}OH)(H_2O)]_n$ **(1)** , (1,2-BDC= benzene-1,2- dicarboxylate) has been synthesized by a hydrothermal reaction using $In_2(SO_4)_3 \cdot 9H_2O$, benzene-1,2- dicarboxylic acid and water at 423 K. The structure of **1** was characterized by elemental analysis, FT-IR and single-crystal X-ray diffraction. The asymmetric unit of compound **1** contains a six-coordinate In(Ⅲ) ion with a slightly distorted octahedral geometry, defined by six O atoms from one water molecules, three 1,2-BDC ligands and two hydroxyl ligands. Each 1,2-BDC ligand affords a three-connecting node. The In(Ⅲ) centers are interconnected through 1,2-BDC ligands to generate a two-dimensional layered structure. Classical O—H⋯O hydrogen bonding is observed in the crystal structure. The crystal structure is further consolidated by π⋯π stacking between nearly parallel aryl ring systems [dihedral angle = 1.1(2)°], the centroid⋯centroid distance between aromatic rings of adjacent 1,2-BDC ligands being 3.671(3)Å. The crystal was found to be a racemic twin, and the flack parameter is 0.48(3).

Key words：Hydrothermal Synthesis, Benzene-1,2-dicarboxylic acid, Indium, Hydrogen bonding.

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散血草可恢復 THP-1 單核球細胞經微波輻射所抑制 NFκB 活化表現現象

Manybracteole Bugle Extract shown to rescue protein expression of transcription factor NFκB in THP-1 monocytes that are inhibited by microwave radiation

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摘 要：微波，是人們在日常生活中常會接觸到的，當世界衛生組織(World Health Organization – WHO) 提出微波是一種微弱干擾人體生理功能的環境能量後，即引發人類開始思考微波是否會對人體生理功能造成傷害，單核球免疫力之表現與細胞中發炎因子 NFκB 的活性有密切相關。人類單核球細胞株 THP-1 細胞受到 phorbol 12-myristate 13-acetate (PMA)

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作用促使 THP-1 細胞分化成為巨噬細胞，接著再以 lipopolysaccharides (LPS) 作用促進活化使 THP-1 細胞內 NFκB 蛋白質的量增加。在微波照射的頻率為 2450 MHz 900W 影響 THP-1 細胞 NFκB 蛋白質量降低。另外探討在微波照射後加入散血草對 THP-1 單核球細胞 NFκB 蛋白質表現。散血草具有強效調節活化免疫細胞，而中國草藥指出散血草具有抗發炎的效果。我們用西方墨點分析 NFκB 蛋白質表現在 THP-1 單核細胞。在我們的實驗中，100 nM PMA 作用 24 小時刺激 THP-1 單核細胞分化成巨噬細胞，在立即微波照射的頻率為 2450 MHz 900W，隨後分別加入散血草萃取液 15 μg、30 μg、150 μg、三種不同劑量培養 3 小時後，接著再以 1 μg/ml LPS 作用 2 小時，結果發現加了散血草萃取液的作用下 NFκB 蛋白質都會上升，由其是在散血草萃取液 15μg 濃度時有顯著的上升在 NFκB 蛋白質的表現。

關鍵詞：人類單核球細胞株(THP-1)、佛波醇 12-十四酸酯 13-乙酸酯(PMA)、脂多醣體(LPS)、細胞核轉錄因子(NF-B)、散血草

Abstract：Microwave radiation can be encountered regularly in daily lives. When World Health Organization (WHO) announced that microwave radiation is a kind of environmental energy which interferes with the physiological functions of human body, great concerns have been raised over the damage frequency can do to human physiology. The immunological performance and the activeness of cellular inflammatory factor NFκB have been closely related in monocytes. Due to the effect of phorbol 12-myristate 13-acetate (PMA) to THP-1 monocytes, THP-1 monocytes can divide into macrophages and then react with lipopolysaccharides (LPS), causing an increase in the amount of NFκB protein in THP-1 monocytes. The protein expression of NFκB decreases when cells are exposed to frequency at 2450 MHz at 900W. After addition of Manybracteole Bugle extract to THP-1 monocytes, protein expression of NFκB has shown to be rescued. Manybracteole Bugle is a Taiwanese folk medicine, and possesses anti-inflammatory effects. Analysis of NFκB protein expression in THP-1 monocytes has been done with Western Blotting. It was observed that under stimulation with 100 nM PMA for 24h, THP-1 monocytes were able to differentiate into macrophages. Furthermore, in the immediate frequency of microwave irradiation 2450 MHz at 900W, Manybracteole Bugle extract was added at three kinds different doses including 15μg, 30 μg, 150 μg for 3 hours, followed by 2 hours to effect 1 μg/ml LPS. It was found under the effect of addition of 15μg, 30 μg, 150 μg, Manybracteole Bugle extract rescue protein level of NFκB.

Key words：THP-1moncyte, Phorbol 12-myristate 13-acetate (PMA), Lipopolysaccharides (LPS), Nuclear Factor - Kappa B (NF-B), Manybracteole Bugle extract