中文摘要

睡眠狀態與生理、心理健康均有重大關係，當睡眠受到干擾，進而產生嗜睡、憂鬱與焦慮，使日間專注力及工作效率下降等，幾乎生活的各個層面都會受到嚴重的影響。另外有睡眠障礙的人同時也容易罹患各種慢性疾病，例如心血管疾病、糖尿病等慢性疾病，都與睡眠障礙相互影響，綜合以上幾點，可以知道睡眠障礙問題影響個人身心健康甚巨。

本研究嘗試建置一套以服務導向為架構之睡眠品質自我評量系統，利用各項 IT 技術建立評量機制，透過完整的睡眠評估、有效率的管理、視覺化報表呈現以及族群資料庫的建立，找出個人睡眠問題。系統提供五大服務模組，(1)帳號管理服務：負責使用者帳號資料與權限管理之用。(2)量表服務：負責編輯各式量表與建立量表平台。(3)填寫紀錄服務：負責個人或系統資料紀錄管理，協助個人健康檔案建立，以供檢視長期變化趨勢。(4)報表產生服務：負責資料回饋，協助進行各項統計分析之圖表呈現。(5)提醒服務：提供個人化設定，依照使用者需求設定不同的提醒頻率及方式，進行重要事項提醒。

為了驗證主觀量表(Pittsburg)與客觀檢測方法(Polysomnography)兩者之關聯，由八位同學進行 PSG 實驗並同時填寫量表。由 PSG 報告中的深層睡眠百分比與量表分數做關聯性分析(r=-0.514，p=0.01；Pearson)，呈現負相關，顯示主觀睡眠品質感覺越好，其深層睡眠時間相對較長。而再以入睡延遲時間(sleep latency)長短與量表分數做分析(r=0.54，p=0.006)，呈現正相關，顯示主觀睡眠品質感覺越差，入睡延遲越長。

單純將量表 e 化僅有 36%認為可增進填寫意願，但如果系統可以提供立即的結果回饋，有 66%認為可以增加意願，因此回饋功能的提供是影響使用者填寫意願最關鍵因素。在使用者提醒機制上，平均通知四次之後便無法收到提醒之效，而過度的跟催會造成使用者反感，實驗數據顯示適當的提醒頻率為七天一次。

各族群間的評估結果略有不同，教職員(n=11)在失眠主觀感受異常有 63%，形成最大原因為壓力因素(54%)，造成的影響為倦怠(45%)。研究生(n=40)失眠主觀感受異常有 42%，同樣是壓力因素(52%)為影響睡眠的主因，但焦慮(15%)和憂鬱(10%)兩者異常比率是三個族群中最高的，造成影響以倦怠(71%)為三個族群中最高。大學部(n=160)在失眠主觀感受異常有 51%，但外在壓力比率則低於其他兩個族群為 36%，造成影響為倦怠(59%)。

英文摘要

The sleeping status has major relationship with physiological and psychological health. When the sleep is disturbed, not only the sleepiness, depression and anxiety will be occurred, but also the attention and working efficiency will be reduced at daytime. In addition, the person with sleep disorder is apt to suffer from various chronic diseases, such as cardiovascular disease, diabetes etc. It will greatly influence personal health physically and mentally.

This research attempts to establish a set of self evaluation system for sleep quality with service orientation architecture. The personal sleep problem will be found through complete sleep evaluation, efficient management, visual reporting form and group database. The system is consisted of five service modules: (1) Account service: It is used for the management of User account data and authorization. (2) Questionnaires service: It is used for editing various questionnaires and generating platform programs. (3) Record service: It is used for establishing personal health for inspecting the long-term variation tendency. (4) Report service: It is used for the feedback of assessment result. (5) Reminding service: It can provide personalized setting to remind the important affairs..

In order to verify the correlation between the subjective scale (Pittsburg) and the objective scale (Polysomnography), 8 students are used to carry on PSG experiment and the questionnaire is filled. The correlation analysis is conducted for deep sleep percentage and questionnaire score in PSG report, and the negative correlation is revealed ($r=-0.514$, $p=0.01$; Pearson). It shows when the subjective sleep quality is better, the deep sleep time will be relatively longer. And when the correlation analysis is conducted for sleep latency and questionnaires score, and the positive correlation is revealed ($r=0.54$, $p=0.006$). It shows when the subjective sleep quality is worse, the sleep latency will be longer.

If e-questionnaires is used simply, 36% of subjects consider the filling willingness can be increased. But if the system can provide immediate feedback of result, 66% of subjects consider the filling willingness can be increased. So, the offer of feedback will be the key factor which influences the filling willingness of user. As for the reminding mechanism of user, it is unable to receive the reminding effect after notifying four times averagely. The excessive push will cause user to be repugnant. The experimental data show that the suitable reminding frequency is once per seven days.

The assessment result is slightly different among groups. As for the teachers and staff (n=11), the 63% of faculties' s sleep quality are bad, the major cause is stress factor (54%), and the influence caused is fatigue (45%). As for the graduate students (n=40), 42% students' s sleep quality are bad, the major cause is stress factor (52%) too, but the abnormal ratio of anxiety (15%) and depression (10%) is the highest in three groups, and the influence caused is fatigue (71%), which is also the highest in three groups. As for the undergraduate students (n=160), the subjective feeling of insomnia is 51%, but the stress ratio is 36%, which is lower than other two groups, and the influence caused is fatigue (59%).