臉部淺層色素斑病患醫療決策支援系統－運用層級分析法

Design a Patient Decision Support System for Treatment Options for Facial Superficial Pigmented Diseases Using Analytic Hierarchy Process

中文摘要

由於臉部淺層色素斑非常普遍，許多人爲了美觀的因素就醫治療。美容治療與一般疾病之治療不同，除了醫師根據病患臨床條件作建議，還需要配合病患之意願。臉部淺層色素斑有多種常見之治療方式可選擇，如擦淡斑外用藥膏、左旋 C 美白導入、化學換膚術、雷射、脈衝光；會影響病患選擇治療方式的因素也有多個，如治療費用、治療效果、所需治療次數、所需療程時間、術後之不便程度，所以臉部淺層色素斑之治療選擇，屬於多準則多方案之醫療決策問題。

病患醫療決策支援系統主要在輔助病患參與醫療決策之決定，以及輔助病患做出符合個人價値觀及反應喜好程度的醫療決策。由於目前沒有任何病患醫療決策支援系統適用於輔助臉部淺層色素斑病患作治療選擇，本研究之目的，希望可以開發出結合病患喜好程度及醫師臨床建議之多準則多方案病患醫療決策支援系統，以作爲輔助臉部淺層色素斑病患選擇治療之用途。

本病患醫療決策支援系統之建置乃採用層級分析法，分爲病患教育、醫師評比、病患評比三個部分。病患教育爲有關臉部淺層色素斑之介紹；病患評比部分，由病患兩兩成對評比各影響選擇治療因素之相對重要性；醫師評比部分，由醫師就各影響選擇治療之因素而言，兩兩成對評比各治療方式對病患之相對適合程度性，在病患及醫師評比完成後，系統可綜合運算出各治療方式之效値，將各治療適合病患之程度予以量化以數値呈現。

系統評估主要分兩個部分，一爲評估系統對個人決策的影響，二爲使用者對系統的滿意與接受度。評估方法爲募集 60 名臉部淺層色素斑諮詢治療之病患，在使用系統前與使用系統後填寫「抉擇之困難度問卷」，藉由成對 t 檢定，評估系統對個人決策的影響程度；使用者對系統的滿意與接受度，則用「滿意與接受度問卷」，作各問項之敘述性統計。系統評估之結果，成對 t 檢定（paired t-test）$P<0.001$，表示抉擇之困難度在使用系統前後有顯著之差異，使用本臉部淺層色素斑病患醫療決策支援系統對決策有顯著性之幫助。有 88.3%的病患願意或非常願意向其他親友推薦本醫療決策支援系統，有 90%的病患覺得本醫療決策支援系統對決策品質的提高有幫助或非常有幫助，有 91.7%的病患覺得本醫療決策支援系統對瞭解自己的需求有幫助或非常有幫助，原來無法決定希望用何種方式治療的病患，使用系統後有 90.4%的病患可以選擇出希望治療的方式。

本研究以臉部淺層色素斑之治療爲例，但在決策準則及決策方案上，可套用於其他疾病治療或篩選之病患醫療決策支援，在決策準則或決策方案的上，也可以再作增加，所以具有應用性及延伸性。

英文摘要
Facial superficial pigmented diseases are very common. Many people want to remove them for cosmetic reasons. Cosmetic therapies are different from the therapies for life-threatening diseases. Except for doctor’s opinion, patient’s preference is also very important for choosing the treatment. There are several factors determining patient’s choice among the treatments, such as treatment effect, treatment fee, inconvenience after the treatment, treatment sessions, and treatment period. There are several treatment options available for facial superficial pigmented lesions, such as topical whitening medication, Vitamin C iontophoresis/ sonophoresis, chemical peeling, laser therapy, and intensive pulsed light. It is a multi-criteria, multi-alternatives decision problem for a patient with facial superficial pigmented disease to make a choice among the treatments.
Patient decision support systems are tools designed to help patients to participate in the clinical decision-making process and make choices comparable to their personal values. There had been no available patient decision support systems or decision aids to help patient to make a treatment choice for facial superficial pigmented disease. The study hereby developed a multi-criteria, multi-alternatives patient decision support system which provided treatment options for facial superficial pigmented diseases combining patient’s preference and physician’s opinion.
Analytic hierarchy process was applied to build this patient decision support system. There were three parts of this system, including education, patient’s evaluation, and physician’s evaluation. Pairwise comparisons between the factors determining patients’ treatment choices were made by patients to assess the relative importance of each determining factor. On the individual patient basis, physician made treatment assessments regarding factors determining patients’ treatment choices by pairwise comparing the treatments. After completing both parts of evaluations, the system synthesized the relative score of each treatment. It was easy for patients to find the appropriate treatment through the quantitative results suggested by the system.
The evaluation of the system included measures of the uncertainty about making a decision before and after using the patient decision support system, and the acceptability and the satisfaction of the system. Sixty consecutive patients with facial superficial pigmented diseases who visited the dermatologic outpatient department for treatment consultation were enrolled in this study. The uncertainty about making a decision was assessed by decisional conflict questionnaire. The scores of decisional conflicts were compared using paired t-tests. Descriptive analysis was used to evaluate the results of acceptability and satisfaction questionnaire. There was a significant difference in the mean rank of overall decisional conflict sores before and

after use of the patient decision support system. 88.3% of patients expressed that they would “like” or “very like” to recommend the system to others. 90% felt the system was “helpful” or “very helpful” to improve the quality of decision making. 91.7% felt the system was “helpful” or “very helpful” to understand the relative importance of the factors determining patients’ treatment choices. 90.4% of the patients who initially could not make a choice for treatment before using the system were able to make decisions after using the system.

The goal of this patient decision support system was to help patient to make an appropriate decision among treatment options for facial superficial pigmented diseases. Moreover, this system was flexible and extensible. Treatment or screening options for other diseases could be applied to this system. The decision criteria and decision alternatives of this system were also increasable.