

ห้องสมุดงานวิจัย สำนักงานคณะกรรมการวิจัยแห่งชาติ



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ESTIMATES OF FUTURE DENTAL HEALTH MANPOWER  
NEEDS FOR THAI SCHOOLCHILDREN USING  
A SOCIODENTAL APPROACH

NARUMANAS KORWANICH

DOCTOR OF PHILOSOPHY  
IN DENTISTRY

THE GRADUATE SCHOOL  
CHIANG MAI UNIVERSITY  
OCTOBER 2011

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**NARUMANAS KORWANICH**



**A THESIS SUBMITTED TO THE GRADUATE SCHOOL IN  
PARTIAL FULFILLMENT OF THE REQUIREMENTS  
FOR THE DEGREE OF  
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IN DENTISTRY**

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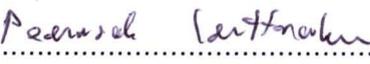
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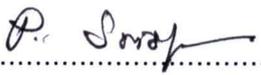
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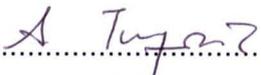
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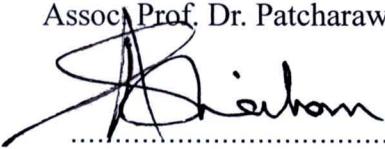
  
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Narumanas Korwanich

ชื่อเรื่องวิทยานิพนธ์	การคาดประมาณความต้องการทันตบุคลากรเพื่อดูแลเด็กนักเรียนไทยในอนาคตโดยใช้การประเมินทางทันตสังคม
ผู้เขียน	นายณณนัส คอวนิช
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### บทคัดย่อ

**E 47363**  
**วัตถุประสงค์:** การศึกษานี้มีวัตถุประสงค์เพื่อเปรียบเทียบจำนวนทันตแพทย์และทันตภิบาลที่จำเป็น เพื่อดูแลทันตสุขภาพของนักเรียนในระบบโรงเรียนของไทยในอนาคต ซึ่งใช้ปี 2573 เป็นตัวแทน โดยใช้วิธีปกติซึ่งประเมินความต้องการการรักษาโดยมุมมองทางการแพทย์เพียงอย่างเดียว และวิธีที่เสนอใหม่ซึ่งนำวิธีเดิมมาปรับโดยเพิ่มการประเมินทางทันตสังคม และการใช้ปริมาณโรคที่เพิ่มขึ้นในแต่ละปี เป็นข้อมูลนำเข้าในการคำนวณ

**วัสดุและวิธีการศึกษา:** ทำการตรวจสอบสุขภาพช่องปากของนักเรียนอายุ 6 และ 12 ปี จำนวน 1,211 คน ใน 5 จังหวัด โดยวิธีการขององค์การอนามัยโลก ทำการประเมินความจำเป็นต้องได้รับการรักษาพยาบาลตามวิธีปกติโดยทันตแพทย์ และประเมินทางทันตสังคมโดยใช้ดัชนี Oral Impact on Daily Performance (OIDP) ร่วมกับการสัมภาษณ์ การคาดประมาณจำนวนทันตแพทย์และทันตภิบาลในปี 2573 ดำเนินการโดยใช้ข้อมูลจากการตรวจสอบสุขภาพช่องปากดังกล่าว ร่วมกับจำนวนนักเรียนในระบบโรงเรียนที่คาดประมาณสำหรับปี 2573 โดยวิธีการต่างๆ 3 แบบ คือ (1) ใช้ความต้องการการรักษาที่ประเมินด้วยวิธีการทางการแพทย์อย่างเดียว (2) ใช้ความต้องการการรักษาโดยใช้การประเมินทางการแพทย์ร่วมกับการประเมินทางทันตสังคม และ (3) การใช้ความต้องการทางการแพทย์ที่เพิ่มขึ้นใน

แต่ละปี ร่วมกับการประเมินทางทันตสังคม ทั้งนี้การศึกษานี้ประมาณการจำนวนทันตแพทย์และทันตภิบาลประกอบกันในสถานการณ์ที่มีการมอบหมายภาระการรักษาพยาบาลให้แก่ทันตภิบาลในระดับต่างๆ ด้วย

การใช้วิธีที่ 1 คาดประมาณจำนวนทันตแพทย์ได้ 5,793 คน วิธีที่ 2 คาดประมาณกำลังคนได้ 4,966 คน, 5,521 คน และ 5,949 คน ตามลำดับ ขึ้นกับสถานการณ์สมมุติของความชุกในการเกิดฟันผุ ทั้งนี้ กำหนดให้ความชุกในการเกิดฟันผุ ซึ่งวัดโดยดัชนีฟันผุ ถอน อุด อยู่ระหว่าง 0.2-1.8, 0.5-2.2 และ 0.8-3.1 ตามลำดับ สำหรับวิธีที่ 3 ซึ่งใช้ปริมาณโรคที่เพิ่มขึ้นในแต่ละปีร่วมกับการประเมินทางทันตสังคม พบว่าคาดประมาณจำนวนทันตแพทย์ที่จำเป็นได้ 1,416 คน การศึกษานี้ประมาณจำนวนทันตภิบาลโดยใช้วิธีต่างๆ ข้างต้นได้เท่ากับ 6,585, 6,010, 6,585, 6,650 และ 1,769 ตามลำดับ

**ผลการศึกษา:** การคาดประมาณโดยวิธีที่ 1 ให้ผลการคาดประมาณสูงที่สุด เมื่อเพิ่มการประเมินทางทันตสังคมเข้าไปในการคาดประมาณทำให้จำนวนทันตแพทย์ที่คาดประมาณลดลง วิธีการคาดประมาณวิธีที่ 3 ได้ผลการคาดประมาณเพียง 1 ใน 4 ของการคาดประมาณวิธีแรกเท่านั้น

**สรุป:** การศึกษานี้เสนอให้ปรับวิธีการคาดประมาณกำลังคนทางทันตกรรม โดยนำการประเมินทางทันตสังคมและจำนวนโรคที่เพิ่มขึ้นในแต่ละปี มาร่วมในการคำนวณ

**Thesis title** Estimates of Future Dental Health Manpower Needs for Thai Schoolchildren Using a Sociodental Approach

**Author** Mr.Narumanas Korwanich

**Degree** Doctor of Philosophy (Dentistry)

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**Abstract**

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**Objective:** The objective of this study was to compare the number of dentists and dental nurses needed in the future (using manpower requirements in the year 2030 for illustrative purposes) to treat dental diseases in Thai schoolchildren, estimated by the traditional normative dental health need method and the number estimated using two adjusted health need models, based on the sociodental approach and the annual estimated increment of dental caries.

**Materials and Methods:** The oral health status of 1,211 students aged 6 and 12 years from five selected provinces were examined using dental survey methods

recommended by the WHO. Normative treatment needs were assessed by dentists who conducted the examinations. In addition, a sociodental approach comprising impact-related need and propensity-related need of students was used, incorporating the Oral Impact on Daily Performance (OIDP) index and interviews. Estimation of the number of dentists and dental nurses required in the year 2030 was carried out using the examination data, the predicted number of schoolchildren in the year 2030 and models based on (1) the entire normative need alone, (2) the entire normative need incorporated with the sociodental approach, and (3) the annual incremental normative need incorporated with the sociodental approach. Combinations of dentist and dental nurse numbers were calculated for various situations.

**Results:** The manpower need in Model 1, the model based on the entire normative need alone was 5,793 dentists. The three scenarios based on the entire normative need incorporated with the sociodental approach produced requirements of 4,996, for Scenario 1 (areas with a DMFT of 0.2 to 1.8), 5,521 for Scenario 2 (areas with a DMFT of 0.5 to 2.2) and 5,949 dentists for Scenario 3 (areas with a DMFT of 0.8 to 3.1), respectively. Model 3, incorporating incremental need and not normative need with the sociodental approach, produced a manpower requirement of 1,418 dentists. Corresponding numbers of dental nurses for the three models were 6,585, 6,010, 6,585, 6,650, and 1,769 respectively.

The calculation based on normative need alone yielded the highest estimates. Incorporating the sociodental approach with the entire normative need decreased the

normative need incorporated with the sociodental approach was one fourth of that calculated using normative need alone.

**Conclusions:** Adjusted dental treatment need methods should be used to calculate dental manpower needs based on the annual incremental increase in dental disease instead of using overall dental disease.

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