Research Publication by The Royal Thai College of Obstetricians and Gynecologists Residency Training Program, 1994-2003

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Objective: *To evaluate the impact of the manuscript requirement policy on research publications from the Royal Thai College of Obstetricians and Gynecologists (RTCOG) residency training program.*
Material and Method: *Names and research titles of RTCOG residents from 1994 to 2003 were used to search for publications in the Medline system and Thai Index Medicus.*
Results: *There were 759 residents with 188 (24.8%) articles published. The publications per year varied from 4.8% to 17.0%. Residents were the first authors of 75 articles (39.9%). One hundred and thirteen articles (60.11%) were published in local medical journals. The majority of articles published in international journals (65.3%) were published in the Journal of the Medical Association of Thailand. After initiation of the publication promotion policy in 1999, the number of publications in which residents were not the first authors increased from 39.8% to 60.2%.*
Conclusion: *The manuscript requirement policy can maintain the research publication rate.*

Keywords: *Obstetrics residency, Publications, Research activities, The Royal Thai College of Obstetricians and Gynaecologists, Training programs*

J Med Assoc Thai 2007; 90 (5): 870-5
Full text. e-Journal: *http://www.medassocthai.org/journal*

Research training was incorporated into the Obstetrics and Gynecology residency training program in Thailand more than 15 years ago. The objective of research training is to improve clinical reasoning and encourage lifelong learning[1,2]. Most research projects involve volunteers, patients, data, or patient specimens, so results should be reported to the public. Because volunteer subjects exposed themselves to risks by participating in clinical research, it would be unethical not to benefit the public by publishing the results of these research projects. Therefore, the Royal Thai College of Obstetricians and Gynecologists (RTCOG), who supervises the residency training program, encourages residents to publish the results of their research projects. In 1999, the RTCOG instituted the policy that all research reports should include a full research report plus a manuscript ready for submission to a specific journal. Furthermore, if the residents' manuscript was accepted for publication by peer reviewed journals, the full research report can be considered as having passed the research part of the training program. The aims of the present study were to assess a research publication situation by the RTCOG residency training program over the last 10 years and to determine the impact of the manuscript requirement policy.

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Material and Method

The Royal Thai College of Obstetricians and Gynecologists (RTCOG) resident training data from the period 1994 to 2003 were included. The data sources were retrospectively reviewed from a list of resident's names, a list of resident's research topics. Medline and Thai Index Medicus searches were conducted to identify publications from these residents' research projects. The numbers of residents by institutes, number of publications, journals in which papers were published, and name of the first author were analyzed. The data are shown as numbers and percentages.

Results

There were 759 residents from 16 institutes during the 10-year period of the present study, with 188 publications (24.8%) in local and international journals. The percentages of publications varied from 0 to 60.9%,

Table 1. Number of residents and publications by institute

Institute	No. of residents	No. of publication (%)
Siriraj Hospital	133	28 (21.05)
Rajavithi Hospital	107	21 (19.63)
King Chulalongkorn Memorial Hospital	92	20 (21.74)
Chiang Mai University	79	23 (29.11)
Ramathibodi Hospital	71	12 (16.90)
Khon Kaen University	55	19 (34.55)
Vajira Hospital	55	19 (34.55)
Prince of Songkla University	44	14 (31.81)
Pramongkutklao Hospital	41	1 (2.44)
Bhumibol Adulyadej Hospital	34	14 (41.18)
Chonburi Hospital	23	14 (60.87)
Khon Kaen Hospital	8	2 (25.00)
Maharat Nakhon Rajasima Hospital	6	0 (0.00)
Hadyai Regional Hospital	4	0 (0.00)
Prapokklao Hospital	4	0 (0.00)
Supprasitthiprasong Hospital	3	1 (33.33)
Total	759	188 (24.77)
Range	3-133	0-28
Median, Mean	79	

Table 2. Number of publications with residents as first author by institute

Institute	Frequency	Percent
Prince of Songkla University	14	18.7
Chonburi Hospital	14	18.7
Bhumibol Adulyadej Hospital	13	17.3
King Chulalongkorn Memorial Hospital	10	13.3
Khon Kaen University	6	8.0
Ramathibodi Hospital	6	8.0
Chiang Mai University	4	5.3
Khon Kaen Hospital	2	2.7
Vajira Hospital	2	2.7
Pramongkutklao Hospital	1	1.3
Rajavithi Hospital	1	1.3
Siriraj Hospital	1	1.3
Supprasitthiprasong Hospital	1	1.3
Total	75	100
% of first authors	175/188 = 39.9	

Table 3. Number of publications with residents not as a first author by institute

Institute	Frequency	Percent
Siriraj Hospital	27	23.9
Rajavithi Hospital	20	17.7
Chiang Mai University	19	16.8
Vajira Hospital	17	15
Khon Kaen University	13	11.5
King Chulalongkorn Memorial Hospital	10	8.8
Ramathibodi Hospital	6	5.3
Bhumibol Adulyadej Hospital	1	0.9
Total	113	100
% of not first authors	113/188 = 60.1	

while the numbers of residents by institute varied from three to 133 (Table 1). Of the 188 publications found, residents were the first authors of 75 publications (39.9%), and not the first authors in 113 publications (60.1%) (Table 2, 3). The most popular journal (26%) was the Journal of the Medical Association of Thailand (JMAT), (Table 4). Seventy-two out of 75 publications (96%) in which the resident was the first author were published in a local journal (Table 5). Forty-two out of 113 publications (37.2%) in which residents were not the first author were published in the JMAT and 23 publications (20.3%) were published in international journals (Table 6). The number of residents per year varied from 56 to 87, with a mean of 75.9. The frequency and percentage of publications varied from 9 (4.8%) to 32 (17.0%), with a maximum of 32 publications in 1997 (Fig. 1). There were 51 (68%) publications with a resident as the first author from 1994 to1998, and 24 (32%) during 1999-2003 which peaked in 1997 (Fig. 2). Among publications in which the resident was not the first author, the number of publications was 45 (39.8%) during 1994-1998 and increased to 68 (60.2%) during 1999-2003 (Fig. 3).

Table 4. Total publications by journals

Journal	Frequency	Percent
J Med Assoc Thai	49	26.0
Vajira Med J	19	10.1
Siriraj Hosp Gaz	18	9.5
Chonburi Hosp J	14	7.4
R Thai Air Force Med Gaz	13	6.9
Songkla Med J	13	6.9
Srinagarind Med J	9	4.8
Bull Dept Med Serv	6	3.2
Int J Gynecol Obstet	6	3.2
Aust N Z J Obstet Gynaecol	5	2.7
J Obstet Gynaecol Res	5	2.7
J Rajavithi	5	2.7
Chula Med J	3	1.6
Khon Kaen Hosp Med J	3	1.6
Chiang Mai Med Bull	2	1.1
Contraception	2	1.1
J Clin Ultrasound	2	1.1
Obstet Gynecol	2	1.1
Ramathibodi Med J	2	1.1
Anticancer Res	1	0.5
Diabetologia	1	0.5
Eur J Obstet Gynecol Reprod Biol	1	0.5
J Obstet Gynaecol	1	0.5
Med J Srinakharinwirot	1	0.5
Med J Srisaket Surin Buriram Hosp	1	0.5
Med J Ubon Hosp	1	0.5
R Thai Army Med J	1	0.5
Thammasat Med J	1	0.5
Uttaradit Hosp Med Bull	1	0.5
Total	188	100

Discussion

The results show that, during the decade between 1994 and 2003, only 24.8% of research projects conducted in the RTCOG residency training program were published. Residents were the first author in 39.9% of these publications. After introducing the manuscript requirement policy in 1999, only the publications with a resident not as the first author had increased.

In both Europe and North America, it is thought that research training benefits residents, but methods and results of the training process need to be re-evaluated[2-5]. Residency training programs in most specialties have incorporated research training to improve scientific thinking and skills necessary to evaluate scientific publications[6,7]. Rivera et al reported

Table 5. Publication with residents as the first author by journals

Journal	Frequency	Percent
Chonburi Hosp J	14	18.7
R Thai Air Force Med Gaz	13	17.3
Songkla Med J	13	17.3
J Med Assoc Thai	7	9.3
Srinagarind Med J	5	6.6
Chula Med J	3	4.0
Khon Kaen Hosp Med J	3	4.0
Vajira Med J	3	4.0
Chiang Mai Med Bull	2	2.7
Ramathibodi Med J	2	2.7
Anticancer Res	1	1.3
Int J Gynecol Obstet	1	1.3
J Rajavithi	1	1.3
Med J Srinakharinwirot	1	1.3
Med J Srisaket Surin Buriram Hosp	1	1.3
Med J Ubon Hosp	1	1.3
Obstet Gynecol	1	1.3
R Thai Army Med J	1	1.3
Thammasat Med J	1	1.3
Uttaradit Hosp Med Bull	1	1.3
Total	75	100

Table 6. Publications with residents not as the first author by journals

Journal	Frequency	Percent
J Med Assoc Thai	42	37.2
Siriraj Hosp Gaz	18	15.9
Vajira Med J	16	14.2
Bull Dept Med Serv	6	5.3
J Obstet Gynaecol	6	5.3
Aust N Z J Obstet Gynaecol	5	4.4
Int J Gynecol Obstet	5	4.4
J Rajavithi Hosp	4	3.5
Srinagarind Med J	4	3.5
Contraception	2	1.8
J Clin Ultrasound	2	1.8
Diabetologia	1	0.9
Eur J Obstet Gynecol Reprod Biol	1	0.9
Obstet Gynecol	1	0.9
Total	113	100

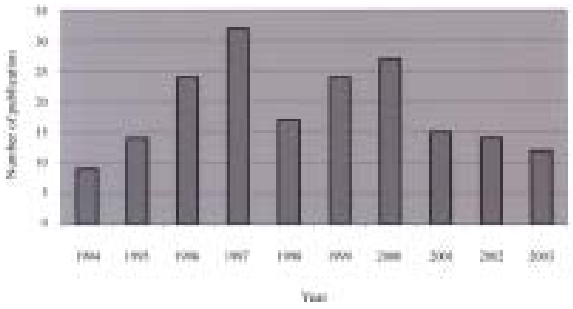

Fig. 1 Number of publications by year 1994-2003

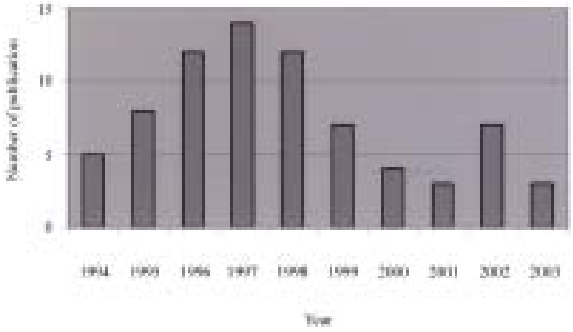

Fig. 2 Number of publications with resident as first author by year 1994-2003

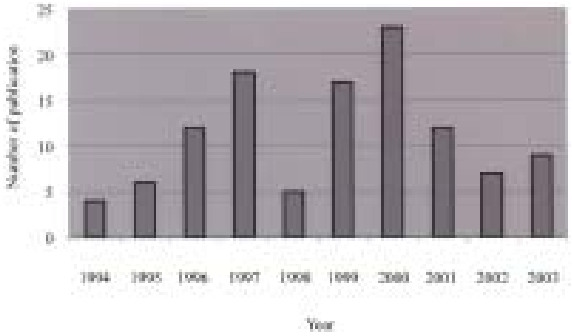

Fig. 3 Number of publications in which residents are not first author by year 1994-2003

that 69% of residents thought research should be a requirement for training, and the most common barrier to success of resident research was insufficient time[8]. Durning et al reported that a Resident Research Director increased the number of publications of the internal medicine residency training[9]. Obstetrics and Gynecology residency training in Thailand has included research training for a long time, but the present study

represents the first time that publication rates were evaluated.

The issue of who should be the first author is controversial. Some institutes have a very strict policy that only the residents should be the first author. Some institutes give their residents a period of six months to submit their manuscripts for publication. If their residents did not finish their manuscript within that period, faculty members who were their advisors are allowed to be the first author. Some institutes allow faculty members who were advisors of the research projects to be the first author. The justification for the last two policies was that most residents did not write manuscripts of their research work after they finished their training. The reasons for not writing manuscripts include; 1) residents were too exhausted from their intensive training, 2) residents did not know how to write manuscript for publishing in peer-reviewed journals, 3) papers published from residents' research work, even in the international journals, could not be used for their promotion in the future. The RTCOG executive committee realized and was concerned about the low publication rate from residents' research work. One potential strategy to increase the publication rate is to put manuscript writing as one of the requirements to complete residency training programs. This would also force advisors to train their residents on how to write a manuscript for publication in peer-reviewed journals. However, it was a surprise to see that after the manuscript requirement policy was introduced in 1999, the overall number of publications did not increase, only the number of publications with a resident not as the first author increased. The factors influencing publication rate of resident research should be further evaluated to improve the publication rate.

In conclusion, about a quarter of residents' research works were published. The manuscript requirement policy can maintain the number of publications from the Obstetrics and Gynecology residency training program and promote international publication. Other mechanisms are needed to increase both the rate of publication and number of publications in which residents are the first authors.

Acknowledgements

The authors wish to thank the Thailand Research Fund for giving a Senior Research Scholar, and assisting in the analysis of the data.

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การตีพิมพ์ผลงานวิจัยจากการฝึกอบรมแพทย์ประจำบ้านสูติศาสตร์และนรีเวชวิทยาระหว่างปีการศึกษา 2537-2546

หเทิญ ถิ่นธารา, ภิเศก ลุมพิกานนท์, แสงชัย พฤทธิพันธ์, เยื้อน ตันนิรันดร

วัตถุประสงค์: *เพื่อประเมินผลของนโยบายส่งเสริมการตีพิมพ์ผลงานวิจัยระหว่างการฝึกอบรมของแพทย์ประจำบ้านราชวิทยาลัยสูตินรีแพทย์แห่งประเทศไทย*

วัสดุและวิธีการ: *สืบค้นผลงานตีพิมพ์จากระบบ Medline และ Thai Index Medicus โดยใช้ชื่อของแพทย์ประจำบ้านหรือแพทย์ใช้ทุน และชื่องานวิจัยที่เสนอต่อคณะอนุกรรมการฝึกอบรมและสอบฯ ราชวิทยาลัยสูตินรีแพทย์แห่งประเทศไทย ระหว่างปีการศึกษา พ.ศ. 2537 - พ.ศ. 2546*

ผลการศึกษา: *มีแพทย์ประจำบ้านหรือแพทย์ใช้ทุนจำนวนทั้งสิ้น 759 คน มีผลงานตีพิมพ์ทั้งหมด 188 เรื่อง (ร้อยละ 24.8) อัตราการตีพิมพ์ผลงานวิจัยต่อปีอยู่ในช่วงร้อยละ 4.8 ถึงร้อยละ 17.0 มีแพทย์ประจำบ้านหรือแพทย์ใช้ทุนเป็นชื่อแรก 75 เรื่อง (ร้อยละ 39.9) ตีพิมพ์ในวารสารการแพทย์ท้องถิ่น 113 เรื่อง (ร้อยละ 60.11) ผลงานวิจัยที่ตีพิมพ์ในวารสารนานาชาติส่วนใหญ่ (ร้อยละ 65.3) ตีพิมพ์ในวารสารจดหมายเหตุทางแพทย์ หลังจากมีนโยบายส่งเสริมให้แพทย์ประจำบ้านหรือแพทย์ใช้ทุนส่งผลงานวิจัยตีพิมพ์เมื่อปีการศึกษา พ.ศ. 2542 พบว่าผลงานวิจัยตีพิมพ์ที่แพทย์ประจำบ้าน หรือแพทย์ใช้ทุนไม่ได้เป็นชื่อแรกเพิ่มขึ้นจากร้อยละ 39.8 เป็นร้อยละ 60.2*

สรุป: *นโยบายให้แพทย์ประจำบ้านหรือแพทย์ใช้ทุนเตรียมต้นฉบับพร้อมส่งตีพิมพ์ช่วยรักษาอัตราการตีพิมพ์ผลงานวิจัยระหว่างการฝึกอบรม*