Correlation of Faculty Structure and Resident Experience in OBGYN Residency Programs

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Correlation of Faculty Structure and Resident Experience in OBGYN Residency Programs

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Abstract

Introduction: In the U.S., residency programs are accredited by the Accreditation Council for Graduate Medical Education based on their capacity to provide residents with the fundamental training required to advance their knowledge and skills in the core principles of obstetrics and gynecology. In this paper we study the relationship between faculty structure and basic training of residents in obstetrics and gynecology (OBGYN) residency programs.

Methods: Information on 244 OBGYN residency program were extracted from the Directory of Obstetrics and Gynecology Residency Programs on the website of the Association of Professors of Gynecology and Obstetrics. The training experience of OBGYN residents was provided in the Directory by the residency programs, specifically indicating the role of the resident as the main surgeon (S) or surgical assistant (A) for different procedures:

Results: In OBGYN programs, general OBGYNs have the highest average faculty number (12) followed by maternal-fetal specialists (5), gyn-oncology (3), reproductive endocrinology (3), urogynecology (2) and the least are reproductive genetics specialists (1). Spontaneous delivery (327 as surgeon and 65 as assistant) and cesarean sections (234 as surgeon and 61 as assistant) are the most common procedures performed by OBGYN residents during their 4 years of training. The least number of procedures performed by OBGYN residents are surgical interventions on antenatal patients (18 as surgeon and 5 as assistant). Significant correlation is detected between the number of reproductive genetics specialists and the number of surgical procedures on antenatal patients performed by OBGYN residents as a surgeon (r=.230, p=.018). Likewise, significant correlation is evident between the number of urogynecologists among faculty members and the number of surgical procedures for urinary incontinence performed by OBGYN residents as a surgeon (r=.157, p=.041) or assistant (r=.288, p=.001).

Conclusion: Faculty structure in OBGYN residency programs may have a significant impact on procedure experience of residents.

Introduction

Residency is a period of supervised clinical training in an accredited tertiary care center that is a prerequisite for medical licensing in the United States (U.S.). Residency lasts from three to six years depending on the specialty. Obstetrics and gynecology as a surgical specialty requires four years of residency training to acquire a license in the U.S. and most countries.

In the U.S., residency programs are accredited by the Accreditation Council for Graduate Medical Education based on their capacity to provide residents with the fundamental training required to advance their knowledge and skills in the core principles of obstetrics and gynecology. In this paper we study the relationship between faculty structure and basic training of residents in obstetrics and gynecology (OBGYN) residency programs.

Materials & Methods

Data Source:
Information on 244 OBGYN residency program were extracted from the Directory of Obstetrics and Gynecology Residency Programs on the website of the Association of Professors of Gynecology and Obstetrics [1]. Data were collected on the faculty size and structure of each residency program as follows:
1. Number of general obstetrician-gynecologists.
2. Number of maternal-fetal specialists.
3. Number of gyn-oncology specialists.
4. Number of urogynecology specialists.
5. Number of reproductive endocrinologists.
6. Number of reproductive genetics specialists.

The training experience of OBGYN residents was provided in the Directory by the residency programs, specifically indicating the role of the resident as the main surgeon (S) or surgical assistant (A) for the following types of intervention:
1. Spontaneous delivery
2. Operative vaginal delivery
3. Cesarean delivery
4. Surgical procedures on antenatal patients
5. Abdominal hysterectomy
6. Vaginal hysterectomy
7. Laparotomy without hysterectomy

Page 2 of 7
8. Surgery for urinary incontinence
9. Operative laparoscopy
10. Operative hysteroscopy
11. Conization
12. Vaginal probe ultrasonography (USG)

Statistical Analysis
Pearson correlation between the number of procedures in each category and faculty size per specialty was tested with the help of SPSS 16 (Statistical Package for the Social Sciences, Chicago, IL).

Study Limitation
Data of the Directory of Obstetrics and Gynecology Residency Programs is updated irregularly (from 1 year to 4 years), sporadically (some programs update their data more frequently) and many times incompletely (missing information on one or more variables). However, since applying radical changes in faculty structure and resident training experience in a short period of time is difficult to achieve; our study results are practically valid.

Results

Faculty Structure
In the directory of OB/GYN residency programs, not all programs provided full information on the number of their faculty staff. Table 1 shows that general OB/GYNs have the highest average number (12) followed by maternal-fetal specialists (5), gyn-oncology (3), reproductive endocrinology (3), urogynecology (2) and the least are reproductive genetics specialists (1).

Resident Experience
Similarly, not all OB/GYN residency programs provided data on their resident experience during the training period. Table 2 shows that spontaneous delivery (327 as surgeon and 65 as assistant) and cesarean sections (234 as surgeon and 61 as assistant) are the most common procedures performed by OB/GYN residents during their 4 years of training. The least number of procedures performed by OB/GYN residents are surgical interventions on antenatal patients (18 as surgeon and 5 as assistant).

The Relationship between Faculty Structure and Resident Experience
Significant correlation is detected between the number of reproductive genetics specialists and the number of surgical procedures on antenatal patients performed by OB/GYN residents as a surgeon \((r=.230, p=.018, \text{Figure 1})\). Likewise, significant correlation is evident between the number of urogynecologists among faculty members and the number of surgical procedures for urinary incontinence performed by OB/GYN residents as a surgeon \((r=.157, p=.041, \text{Figure 2})\) or assistant \((r=.288, p=.001, \text{Figure 2})\).

Commentary
This paper elicits the inhomogeneity of faculty structure in OB/GYN residency programs and the impact of subspeciality proportion on procedure allotment for residents. Not all programs have reproductive genetics specialists in their team; yet a significant correlation between the number of reproductive genetics specialists and the number of antenatal procedures performed by residents as primary surgeon is statistically proven. Antenatal procedures such as amniocentesis and chorionic villus sampling (CVS) are frequently ordered by reproductive genetics specialists in cases of high-risk pregnancies to screen for genetic disorders before birth. The above correlation is important since this type of procedures is the least practiced in OB/GYN residency programs. A three-year fellowship in maternal-fetal medicine is supposed to provide sufficient experience to offer high-quality antenatal care by a specialized OB/GYN practitioner.

Another example of the relationship between faculty structure and resident experience is the correlation between the number of urogynecologists and the number of surgical procedures for urinary incontinence performed by residents as primary surgeon or more significantly as surgical assistant. The field of urogynecology is dedicated to the treatment of women with pelvic floor disorders such as urinary incontinence with or without prolapse of pelvic organs. We, OB/GYNs, are supposed to be specialists in the special needs of women. Unfortunately we see OB/GYN becoming a “failed” specialty. With the limitation of specialist faculty numbers and training hours in residency programs, less qualified OB/GYN graduates are being released. These graduates may comparatively be no more specialists than family doctors, who happen to do some minor gynecological procedures and deliver babies at times. The truth that people have different abilities should have its application in OB/GYN training. Some people have better doctor-patient communication skills and would do better in the medical track of women care. Others have better hand-eye coordination and surgical skills and are posed to be surgeons by nature. Yet others may have superior didactic skills and have a teaching personality that would assumingly make them excellent instructors and professors. Thus, setting a residency program with tracks that consider peoples’ skills and orientations would, in our opinion, yield
higher quality training results and much better care for women. Interns may rotate through different OBGYN subspecialties during the first year, i.e. perinatal care, benign GYN surgery, oncology, operative interventional care of labor and delivery. Then at the end of the first year they can be tested as to their skills. If they do not have threedimensional skills they should better not go into the surgical track; instead they can go into the perinatology track or office gynecology track where they will learn to provide primary gynecological care and fertility assessment as well as good lower urological tract and pelvic floor evaluation services. On the other hand, surgically-oriented people can, after the first year, be divided according to their wishes to operative interventional obstetrics specialists, benign gynecological surgeons and GYN oncologists. Operative interventional obstetricians will have to attend complicated deliveries and perform c-sections. Benign GYN surgeons will have among their responsibilities the obligation to provide minimal invasive surgery and pelvic floor reconstructive surgery. With such a division we will wind up with the best of two worlds (office and surgical care) for women, because there is too much to learn in our area and too much knowledge for one person to do everything. In the meanwhile, residency applicants can orient their choice of residency programs based on their desired future fellowship subspecialty (maternal-fetal medicine, urogynecology ...etc.) or the category of patients they intend to serve when they open their own practice (general obstetrics, general gynecology, urogynecology ... etc.).

References

Illustrations

Illustration 1

Table 1: Number of OBGYN faculty members per specialty.

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal-fetal</td>
<td>184</td>
<td>0</td>
<td>20</td>
<td>5.33</td>
</tr>
<tr>
<td>Gyn Oncology</td>
<td>184</td>
<td>0</td>
<td>12</td>
<td>2.79</td>
</tr>
<tr>
<td>Reprod Endocrin</td>
<td>181</td>
<td>0</td>
<td>16</td>
<td>2.83</td>
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<tr>
<td>General Ob/Gyn</td>
<td>182</td>
<td>1</td>
<td>65</td>
<td>12.34</td>
</tr>
<tr>
<td>Reprod Genetics</td>
<td>150</td>
<td>0</td>
<td>6</td>
<td>0.85</td>
</tr>
<tr>
<td>Urogynecology</td>
<td>179</td>
<td>0</td>
<td>8</td>
<td>1.78</td>
</tr>
</tbody>
</table>

Illustration 2

Table 2: Number of OBGYN procedures performed by residents.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spongian del / S</td>
<td>178</td>
<td>31</td>
<td>25.48</td>
<td>26.54</td>
</tr>
<tr>
<td>Spongian del / A</td>
<td>146</td>
<td>0</td>
<td>36.9</td>
<td>59.25</td>
</tr>
<tr>
<td>Oder vag del / S</td>
<td>107</td>
<td>3</td>
<td>34.3</td>
<td>35.89</td>
</tr>
<tr>
<td>Oder vag del / A</td>
<td>77</td>
<td>1</td>
<td>50</td>
<td>11.82</td>
</tr>
<tr>
<td>Cesarean del / S</td>
<td>178</td>
<td>19</td>
<td>34.4</td>
<td>33.53</td>
</tr>
<tr>
<td>Cesarean del / A</td>
<td>146</td>
<td>0</td>
<td>238</td>
<td>61.26</td>
</tr>
<tr>
<td>Surg proc on antenatal pts / S</td>
<td>139</td>
<td>0</td>
<td>203</td>
<td>17.67</td>
</tr>
<tr>
<td>Surg proc on antenatal pts / A</td>
<td>105</td>
<td>9</td>
<td>50</td>
<td>5.30</td>
</tr>
<tr>
<td>Abdominal hysterectomy / S</td>
<td>178</td>
<td>25</td>
<td>89.43</td>
<td>41.25</td>
</tr>
<tr>
<td>Abdominal hysterectomy / A</td>
<td>146</td>
<td>1</td>
<td>26</td>
<td>15.75</td>
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<tr>
<td>Vaginal hysterectomy / S</td>
<td>178</td>
<td>7</td>
<td>189</td>
<td>34.41</td>
</tr>
<tr>
<td>Vaginal hysterectomy / A</td>
<td>146</td>
<td>1</td>
<td>75</td>
<td>12.87</td>
</tr>
<tr>
<td>Laparoscopy without hysterectomy / S</td>
<td>167</td>
<td>0</td>
<td>297</td>
<td>60.89</td>
</tr>
<tr>
<td>Laparoscopy without hysterectomy / A</td>
<td>137</td>
<td>0</td>
<td>65</td>
<td>17.90</td>
</tr>
<tr>
<td>Surg for att/infant / S</td>
<td>177</td>
<td>4</td>
<td>561</td>
<td>70.49</td>
</tr>
<tr>
<td>Surg for att/infant / A</td>
<td>144</td>
<td>0</td>
<td>195</td>
<td>23.19</td>
</tr>
<tr>
<td>Op lap / S</td>
<td>126</td>
<td>27</td>
<td>21.34</td>
<td>37.22</td>
</tr>
<tr>
<td>Op lap / A</td>
<td>95</td>
<td>1</td>
<td>05</td>
<td>16.07</td>
</tr>
<tr>
<td>Op hys / S</td>
<td>125</td>
<td>19</td>
<td>419</td>
<td>63.02</td>
</tr>
<tr>
<td>Op hys / A</td>
<td>21</td>
<td>1</td>
<td>44</td>
<td>12.87</td>
</tr>
<tr>
<td>Consults / S</td>
<td>161</td>
<td>8</td>
<td>182</td>
<td>29.95</td>
</tr>
<tr>
<td>Consults / A</td>
<td>139</td>
<td>0</td>
<td>33</td>
<td>5.84</td>
</tr>
<tr>
<td>Vag probe USG / S</td>
<td>152</td>
<td>19</td>
<td>905</td>
<td>147.33</td>
</tr>
<tr>
<td>Vag probe USG / A</td>
<td>59</td>
<td>0</td>
<td>65</td>
<td>10.39</td>
</tr>
</tbody>
</table>
Illustration 3

Figure 1: Significant correlation between the number of reproductive genetics specialists and the number of surgical procedures on antenatal patients performed by OBGYN residents as a surgeon ($r=.230$, $p=.018$).

Illustration 4

Figure 2: Significant correlation between the number of urogynecologists among faculty members and the number of surgical procedures for urinary incontinence performed by OBGYN residents as a surgeon ($r=.157$, $p=.041$) or assistant ($r=.288$, $p=.001$).
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