



## Editorial

## Does a male operator increase the pain perception of women undergoing hysterosalpingography examination?



In this issue, Tokmak et al<sup>1</sup> publish an interesting article entitled *The effect of preprocedure anxiety levels on post-procedure pain scores in women undergoing hysterosalpingography*. This prospective randomized study enrolled 109 women who underwent hysterosalpingography (HSG).<sup>1</sup> All patients had their anxiety levels assessed and scored using the Beck anxiety inventory. The authors investigated the effect of various clinical factors and preprocedural anxiety levels on pain perception in these women after the HSG procedure and found that high preprocedure anxiety levels and male operators contributed to increased postprocedure pain in women who received HSG examination.<sup>1</sup> We congratulate the authors on the success of this publication.

Pain is a complicated mechanism, and not easily investigated.<sup>2</sup> Many factors, for example, endocrine, the nervous system, psychosocial relationships, personality, and other elements might be interwoven into an often very subjective determination of pain level.<sup>2</sup> There is no doubt that pre-procedure anxiety could be partly responsible for patient personality, and the characteristics of the patient personality might be much more complicated than we expected in that it also involved genetic and environmental interactions.<sup>3</sup>

In the *Chinese Journal of Medical Association*, the same group of authors previously published a similar study and obtained similar results.<sup>4</sup> The end results of their study showed that there were significantly positive correlations between preprocedural trait–stat levels and procedure-related pain [as assessed by the visual analogue scale (VAS)] during office hysteroscopy.<sup>4</sup> In addition, the authors also found that in-hospital waiting time was the most important factor contributing to high VAS during office hysteroscopy,<sup>4</sup> suggesting that further consideration should be devoted to improving patient care. Effectively finding avenues to decrease patient anxiety might also be a key factor in improving patient compliance and satisfaction when patients are being prepped to undergo any intensive procedure and therapy. Therefore, it would appear that all managers and/or superintendents should consider how to provide a much warmer, kinder, and more humanized environment, and a well-trained team of workers, which could impact a patient's search for health care providers. Evidence has shown that the presence of a cold and unfriendly

environment is significantly correlated with patient anxiety and hostility.<sup>5</sup> We believe that friendly and humanized hospital space is as important as highly qualified professionals and high technology achievement, since all contribute to the best care of the patients.<sup>6</sup>

In Dr. Tokmak et al's study,<sup>1</sup> one interesting finding attracted our attention. The authors found there were significantly higher VAS scores in women undergoing HSG when a male operator was used.<sup>1</sup> Since this study was a prospective, randomized trial, and the patients were unaware of the operator's sex before completing the Beck anxiety inventory (1 tool used for investigation of anxiety scores) at the preprocedural period, the authors claimed that this finding seemed to be “real”.<sup>1</sup> The authors also tried to explain this unusual observation, which has not been previously published in the literature, and hypothesized that the female operators might use the instruments and perform procedures more gently. The authors seemed to be quite convinced of their results, since operator sex had an effect on VAS score independent of anxiety levels. However, this result should be interpreted cautiously. Unlike a previous study from the same group, only one operator (M.K.K.) performed all of the procedures (office hysteroscopy) during the study period.<sup>4</sup> Therefore, operator bias was minimized. By contrast, the current study in this issue involved many operators who performed the HSG procedure. However, the authors did not mention who performed HSG in this study. The background of the operators were not recorded and analyzed. So without further information about the individual operators, it is dangerous to reach such a conclusion.

In Taiwan, medical students become familiar with the technology and procedure of HSG during their residency training. That is to say, they are exposed to and learn about HSG relatively early in their medical education. In addition, a shortage of obstetricians and gynecologists has become apparent in Taiwan.<sup>7</sup> Increasingly, more female medical students have selected obstetrics and gynecology as their career choice. If a similar situation was noted in Turkey, as an example, this factor should be analyzed because HSG operators used in their study might have different experiences and techniques; such experiences are highly correlated with outcomes of the patients.<sup>8,9</sup>

Furthermore, since the women were awake during the entire procedure of the HSG, it is credible that male operators might increase the unusual anxiety status of the women, especially in an Oriental society or a markedly conservative population. There is no doubt that elevated anxiety scores contribute to higher pain perception (VAS scores). In fact, Dr. Tokmak et al<sup>1</sup> also agreed that patients examined by a female doctor might feel more comfortable and less embarrassed. Therefore, it is highly likely that patient anxiety levels could fluctuate and increase significantly if male operators perform the HSG procedure.

In addition, the preprocedure anxiety levels reported<sup>1</sup> might not be totally representative of the “real” anxiety scores of the patients. The “real” preprocedure anxiety scores could have been underestimated and/or overestimated when the patients saw the different-sex operators. Therefore, it is necessary to immediately record the preprocedure anxiety levels when the patients first come in contact with and meet the male or female operators. If the results showed that a male operator was still an independent factor contributing to the postprocedure pain perception without significantly increasing anxiety scores, such evidence might be deemed more direct. Additionally, it would be recommended that the authors use electrochemical machines to aid recording of anxiety and pain scores. For example, blood pressure, heart rate, respiratory rate, and other vital signs could provide valuable scientific data showing the patients' response (anxiety and/or pain). In addition, anxiety level records should be separated by patients seeing the male or female operators before, after, and during the entire procedure. With this additional information, the role of operator sex on the pain perception of HSG could be better elucidated.

In our opinion, it could be premature to claim that female operators compared with male operators might decrease the pain of HSG. However, this article was important, because we never really know whether the therapeutic outcome and satisfaction of the patients are different due to different-sex physicians. Generally, competition for different occupations based on sex status is typically not considered to be fair or appropriate.<sup>10,11</sup> However, there is substantial merit in studying the influence of disease outcome and compliance of patients when different-sex physicians take care of the patients. If female physicians really do create patient advantages in reduced anxiety or even improved outcomes in some specialists, such as obstetricians and gynecologists, we welcome the expanding pool of female medical students to consider these specialties as their final career choice.

### Conflicts of interest

The authors declare that there are no conflicts of interest related to the subject matter or materials discussed in this article.

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