Propensity Scores and Palliative Care

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Dear Editor:

Understanding nuances of the opportunities for palliative care to improve quality of care while reducing costs is an important topic, and I was glad to see Starks and colleagues approach this issue in their recent article on cost savings of palliative care by different hospital lengths of stay.¹ I had several concerns, however, about the construction and use of propensity scores in the presented analyses. Given the field's interest in using propensity scores in palliative care outcomes analyses,² it is imperative that we pay careful attention to the rationale for using this statistical tool.

Propensity scores are intended to account for observable differences between individuals receiving a treatment (here, palliative care) and individuals receiving usual care. By accounting for these differences, a researcher can feel more confident that differences in observed outcomes (such as costs of care) are due to the treatment and not to a systematic difference between patients in the treatment and usual care groups. Variables included in propensity scores and for matching should therefore be restricted to those that occur prior to the treatment or that cannot be influenced by the treatment. By matching patient groups on length of stay and discharge disposition as Starks and colleagues did, the true effect of palliative care on costs of care is masked.

Secondly, propensity scores rely on the concept of a counterfactual. That is, a treated individual with a given propensity score needs to be matched to an individual in the comparison group with a similar propensity score in order to isolate the treatment effect among individuals with a similar likelihood of receiving treatment. The 25 palliative care cases with no matches in the comparison group should have been excluded from further analyses, as these individuals had no counterparts in the comparison group from which to draw conclusions.

In addition, inclusion of covariates in the propensity score that are related to treatment only and not to outcome increases the variance of treatment effect estimates.³ Variables that are related to treatment only and not to outcome (such as

physician characteristics)⁴ are not confounders and by definition do not need to be included in the propensity score.

Methods such as propensity scores are very useful to researchers in the field of palliative care who rely on observational data. By keeping in mind the rationale for using propensity scores, we can better isolate the effects of palliative care on patient outcomes.

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