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## Need to improve gender reporting in radiology human subjects research



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A new analysis shows that gender is a poorly controlled, and frequently neglected, variable in human subjects research published in the most cited general radiology journals. In an emerging era of personalised medicine, initiatives to ensure transparent reporting of gender-specific results may help catalyse otherwise overlooked discoveries to advance the health of all, according to the study published online in *Journal of the American College of Radiology*.

As in nonradiology research, controlling for gender in radiology human subjects research is important because many medical conditions present differently in women than men. Additionally, sociodemographic characteristics such as gender, ethnicity, and age are associated with certain medical conditions and thus ideally should all be considered during study recruitment and reported in study results.

"And, often unique to medical imaging, characteristics associated with the female gender (e.g., size, age, comorbidities, past pregnancies) may be responsible for differences in the quality or accuracy of examinations. For instance, women undergoing nuclear medicine cardiac stress testing more frequently require attenuation correction to prevent false-positive results from breast tissue attenuation artefact," explain study authors, who are from the Department of Radiology and Imaging Sciences, Emory University School of Medicine.

Despite increasing attention to gender reporting in human subjects research more broadly, the topic has received little attention in the radiology literature. The current study assessed the presence and extent of gender bias and reporting in radiology human subjects research.

For this bibliometric analysis, Patricia Balthazar, MD, and colleagues reviewed all articles published between 1 January 2016 and 30 June 2016, in seven of the most cited general radiology journals. From each original research article studying human subjects, the number and gender of participants and whether gender-based results were reported were manually extracted. Articles evaluating gender-specific body parts were excluded. Article-level subject gender matching percentages were calculated and descriptive statistics reported.

In all, 522 journal articles were included in the analysis. Of these, 48 (9.2%) made no mention at all of research subjects' gender. Of the 473 articles mentioning gender, 147 (31.1%) had more female and 308 (65.1%) more male subjects. But in aggregate, 105,763 of 254,102 (41.6%) of all subjects were male and 142,069 (55.9%) were female. By quartile distribution, subject gender matching was very variable (12.9% of articles with <25% match, 23.7% with 25%-50%, 29.4% with 50%-75%, and 34.0% with  $\geq$ 75%).

Notably, of articles including subjects of both genders, only 27.5% (126 of 458) reported any gender-based results.

"Our findings thus comport with those of authors outside of radiology suggesting that researchers often exhibit gender bias and/or gender neglect in their published works," say Dr. Balthazar and co-authors, adding that journal reviewers and editors could help address this issue by giving more rigorous attention to subject gender reporting.

"Because clinical research serves as the basis of evidence-based medicine and the further advancement of scientific discovery, initiatives to improve the reporting of gender-specific results may help catalyse otherwise overlooked discoveries," the research team points out.

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