visual option that could be a low-cost alternative to the numeric rating scale. Limitations of the study are the lack of a diverse population and use of a convenience sample rather than a random or purposive sample. Further work is needed to validate the emoji-based scale in diverse populations and with different types of scales.

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Author Contributions: Ms Renne and Dr Argandykov had full access to all of the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis.

Concept and design: He, Renne, Argandykov, Lee.

Acquisition, analysis, or interpretation of data: All authors.

Drafting of the manuscript: He, Renne, Argandykov, Lee.

Critical revision of the manuscript for important intellectual content: Renne, Argandykov, Convissar, Lee.

Statistical analysis: Renne, Argandykov, Lee.

Administrative, technical, or material support: He, Renne, Lee.

Supervision: He, Lee.

Conflict of Interest Disclosures: Dr He reported being on the advisory board for Covid Act Now; being co-founder of ConductScience Inc; serving on the American College of Emergency Physicians Supply Chain Task Force; receiving research funding from the Foundation for Opioid Response Efforts (FORE); personal fees from Withings Inc; the Boston Globe; the American College of Emergency Physicians, Maze Engineers Inc, ConductScience Inc, Cursive Medical Associates, and VIO Med Spa New England; and volunteering at Emergency Physicians, Maze Engineers Inc, ConductScience Inc, Curative personal fees from Withings Inc, the Foundation for Opioid Response Efforts (FORE), American College of Emergency Physicians Supply Chain Task Force; receiving personal fees from Covid Act Now; being co-founder of ConductScience Inc; serving on the National Basketball Association (NBA) who did vs those who did not receive a booster dose.

Methods | Players and staff who were tested more than once between December 1, 2021, and January 15, 2022, were included. Individuals were tested via the nucleic acid amplification test when symptomatic, after a known exposure, or during daily enhanced surveillance testing triggered by multiple cases on 1 team. Player vaccinations were not mandated. Staff were required to be fully vaccinated by October 1, 2021, and to have received a booster dose by January 5, 2022, if eligible. Masking requirements were similar between players and staff, with the exceptions of players unmasking on court and head coaches unmasking during games.

Genome sequencing was performed for all infections to determine the SARS-CoV-2 variant, but some sequencing failed due to inadequate sample volume, viral load, or genome coverage. Vaccination status was considered as a time-varying exposure; individuals could dynamically move through multiple categories during the study and contribute person-days accordingly. Fully vaccinated was defined as 2 doses of a 2-dose vaccination course (Pfizer-BioNTech BNT162b2 or Moderna mRNA-1273) or 1 dose of the 1-dose vaccination course (Johnson & Johnson JNJ-78436735)\(^4\) and fully boosted was defined as 14 days after receiving any booster dose.

Hazard ratios (HRs) from an Andersen-Gill Cox proportional hazards model\(^5\) compared time to infection for individuals who were fully vaccinated vs those who were fully boosted. Infections occurring after vaccination but prior to 14 days after vaccination were censored. The outcomes included

### Table. Patient Ratings of Reported Pain Between the Emoji-Based Visual Analog Scale and Numeric Rating Scale

<table>
<thead>
<tr>
<th>Numeric rating scale</th>
<th>Emoji-based visual analog scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
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<td>4</td>
<td>4</td>
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<td>6</td>
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<td>10</td>
<td>10</td>
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</tbody>
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confirmed SARS-CoV-2 infections, symptomatic infections, COVID-19 hospitalizations, and COVID-19 deaths.

The models were adjusted for age and prior SARS-CoV-2 infection and the analyses were performed using SAS version 8.2 (SAS Institute Inc) and R version 4.1.1 (R Foundation for Statistical Computing). Statistical significance was defined as a 2-sided P < .05. The Advarra institutional review board determined the study met criteria for exemption status. Individuals signed health information authorizations allowing collection, storage, and use of health information by the NBA for monitoring purposes, including disclosure to medical experts.

Results | Of 2613 players and staff, 67% were followed up the entire 45-day study period, with 74 165 person-days contributed by fully boosted individuals and 10 890 person-days by those who were fully vaccinated but not boosted though eligible to receive a booster dose. From the start to the end of the study period, the percentage of individuals who were fully vaccinated and eligible for a booster dose decreased from 26% (n = 682) to 8% (n = 205) and the percentage of individuals who were fully boosted increased from 49% (n = 1282) to 85% (n = 2215); the remainder were in other categories, such as fully vaccinated but not yet eligible for a booster or within 14 days of their booster dose. In the over-all cohort, 88% were male with a median age of 33.7 years (IQR, 27.3-45.2 years; Table 1).

Individuals who were fully boosted experienced 608 confirmed SARS-CoV-2 infections and were significantly less likely to be infected than fully vaccinated individuals who
Table 2. Association Between Booster Vaccination and SARS-CoV-2 Infection, December 1, 2021-January 15, 2022

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Adjusted HR (95% CI)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any confirmed SARS-CoV-2 infection</td>
<td>0.43 (0.35-0.53)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Symptomatic SARS-CoV-2 infection</td>
<td>0.39 (0.30-0.50)</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

Abbreviation: HR, hazard ratio.

* The analyses were adjusted for age and prior SARS-CoV-2 infection. Comparison of individuals who were fully boosted vs those who were fully vaccinated, not boosted, and booster eligible (referent).

Critical revision of the manuscript for important intellectual content: All authors. Statistical analysis: Tai, Connolly, Administrative, technical, or material support: Tai, Connolly, Mack. Supervision: Tai, Maragakis, DiFiori, Grad, Mack.

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