



MUSCULOSKELETAL & RHEUMATIC SYMPTOMATOLOGY AFTER COVID-19 VACCINATION REPORTED IN A PUERTO RICAN POPULATION

Gerardo E. Sánchez-Navarro BS¹, Humberto R. Nieves-Jiménez BS¹, Christian C. Colón-Vega BS¹, Kristina M. Medina-Agramonte BS¹, Juan D. Mercado-Potes BS¹, Giancarlo Piovanetti-Crespo BS¹, Frances Ramírez de Arellano-Canetti BS¹, Ricardo Rodríguez-Infanzón BS¹, Ariana N. Vélez-Santiago BS¹, Bárbara Riestra-Candelaria, Ph.D²

¹Universidad Central del Caribe School of Medicine, Bayamón, Puerto Rico

²Universidad Central del Caribe Department of Anatomy, Bayamón, Puerto Rico

120gsanchez@uccaribe.edu

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ABSTRACT

This study highlights the musculoskeletal and rheumatic symptomatology intensities experienced between the first and second doses of mRNA vaccines in the Puerto Rican population. A questionnaire assessing musculoskeletal & rheumatic variables after COVID-19 vaccination was provided at the Universidad Central del Caribe vaccination clinics and distributed via social media between July 2021 and October 2021. We performed bivariate analyses. This study is IRB approved. Out of 247 participants, 143 identified as female and 104 as male. Ages ranged from 21-30 (42.1%), 31-60 (34.4%), and 61+ (23.5%). At least three to four days after the first dose, 57.3% had no musculoskeletal/rheumatic pain/stiffness during the day, 28.5% reported mild pain/stiffness, 12.6% moderate pain/stiffness, and 1.6% serious pain/stiffness. During the night: 60.2% reported having no pain, 24.8% mild pain, 12.6% moderate pain, and 2.4% serious pain. After the second dose, 47.3% of participants had no muscular/rheumatic pain/stiffness during the day, 27.3% had mild pain/stiffness, 21.1% had moderate pain/stiffness and 4.1% had serious pain/stiffness. During the night, 51.4% of participants reported having no pain/rigidity in muscles/joints, 24.9% reported mild pain, 19.2% moderate pain, and 4.5% severe pain. The second dose was significantly associated with increased moderately to severe pain during the day ($p=0.002051$) compared to the first dose and during the night ($p=0.015468$). Data showed increased intensity in musculoskeletal/rheumatic symptomatology after the second dose. This data could be useful for vaccination administration guidelines and public health matters.

BACKGROUND

The development of COVID-19 vaccines prefaced an interest of the scientific community to study their adverse effects. We assessed musculoskeletal (MSK) and/or rheumatic (RHU) symptomatology 3-4 days after administration of mRNA COVID-19 vaccines in different age groups and sex identification in a Puerto Rican cohort.

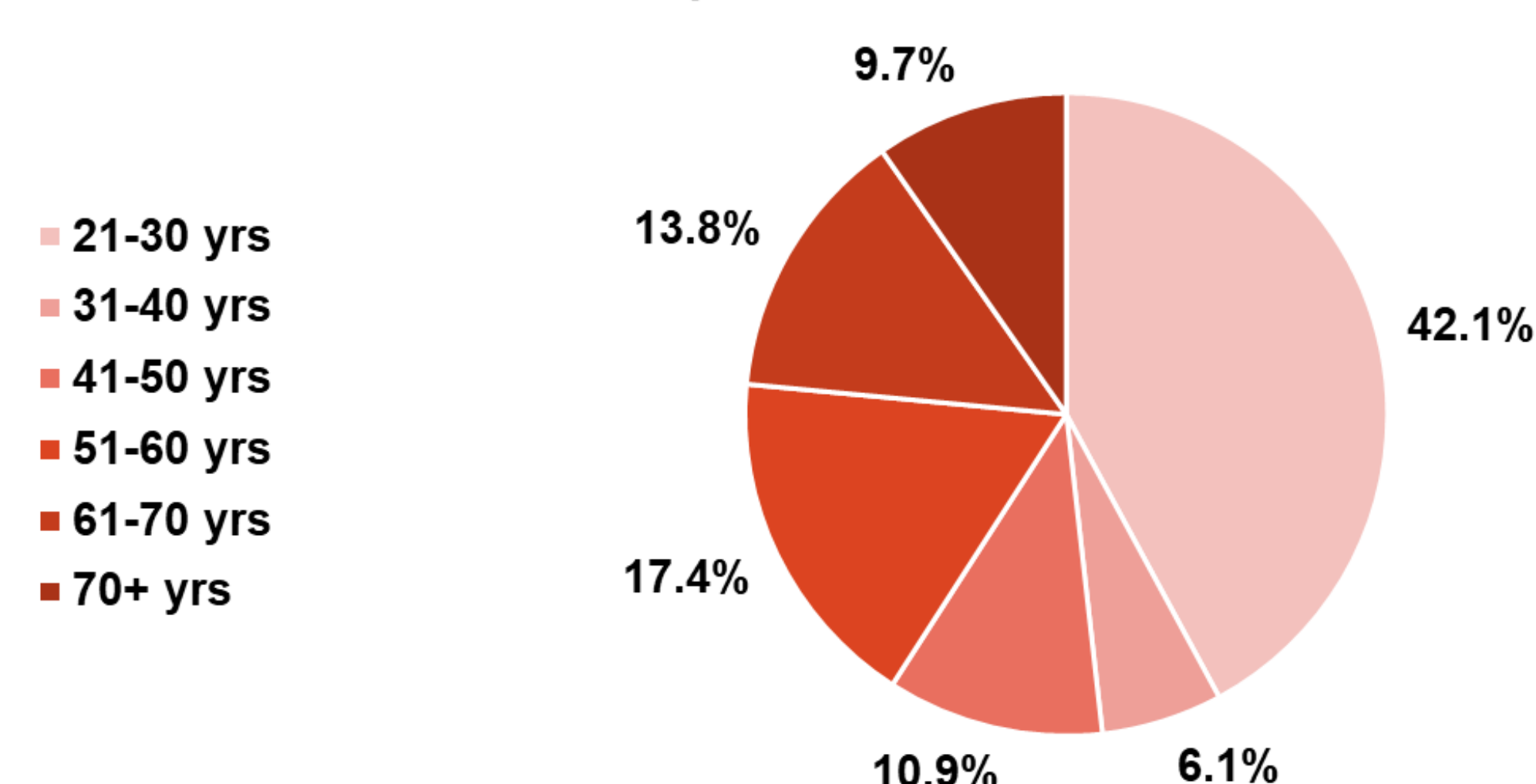
METHODOLOGY

An online survey with MSK/RHU variables was distributed in a COVID-19 vaccination clinic and social media between January 2022 and October 2022. Multivariate analyses were carried out. This study is IRB-approved (2021-22).

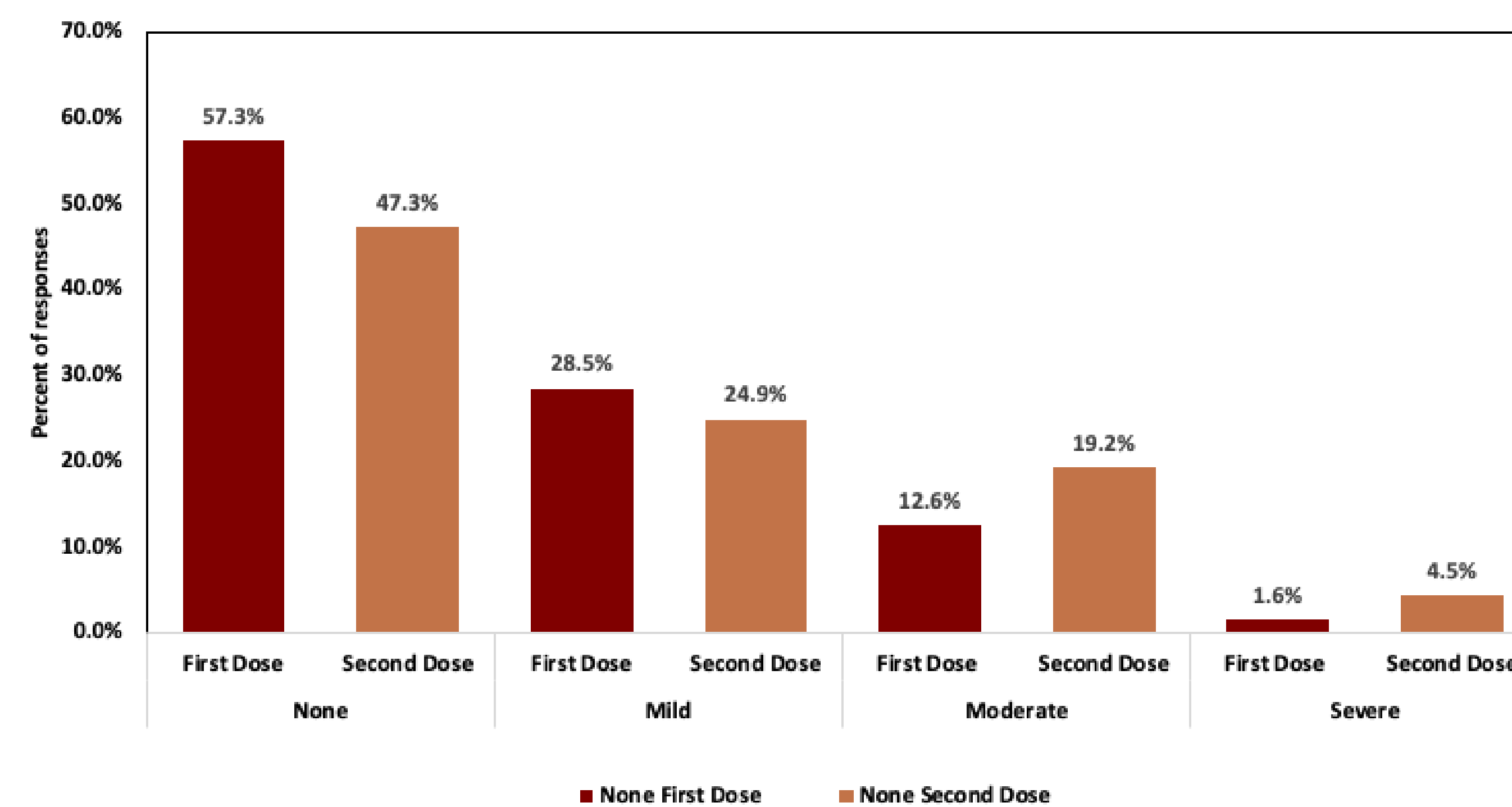
RESULTS

A total of 247 participants were recruited: 143 females and 104 males.

Graph 1. Age Distribution of Participants

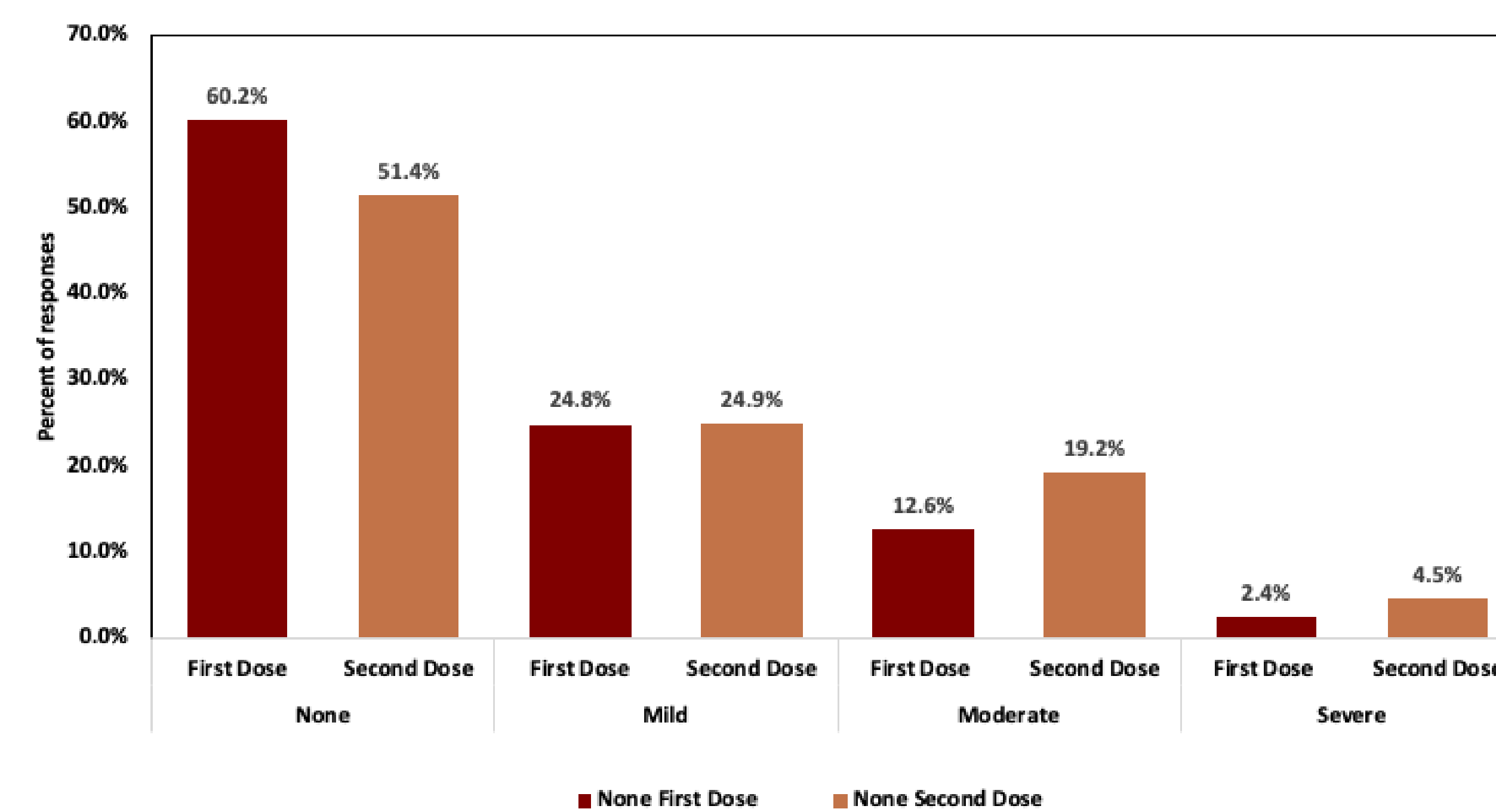


Graph 2. Severity of MSK and Rheumatologic Symptoms After First and Second Vaccine Dose During the Day



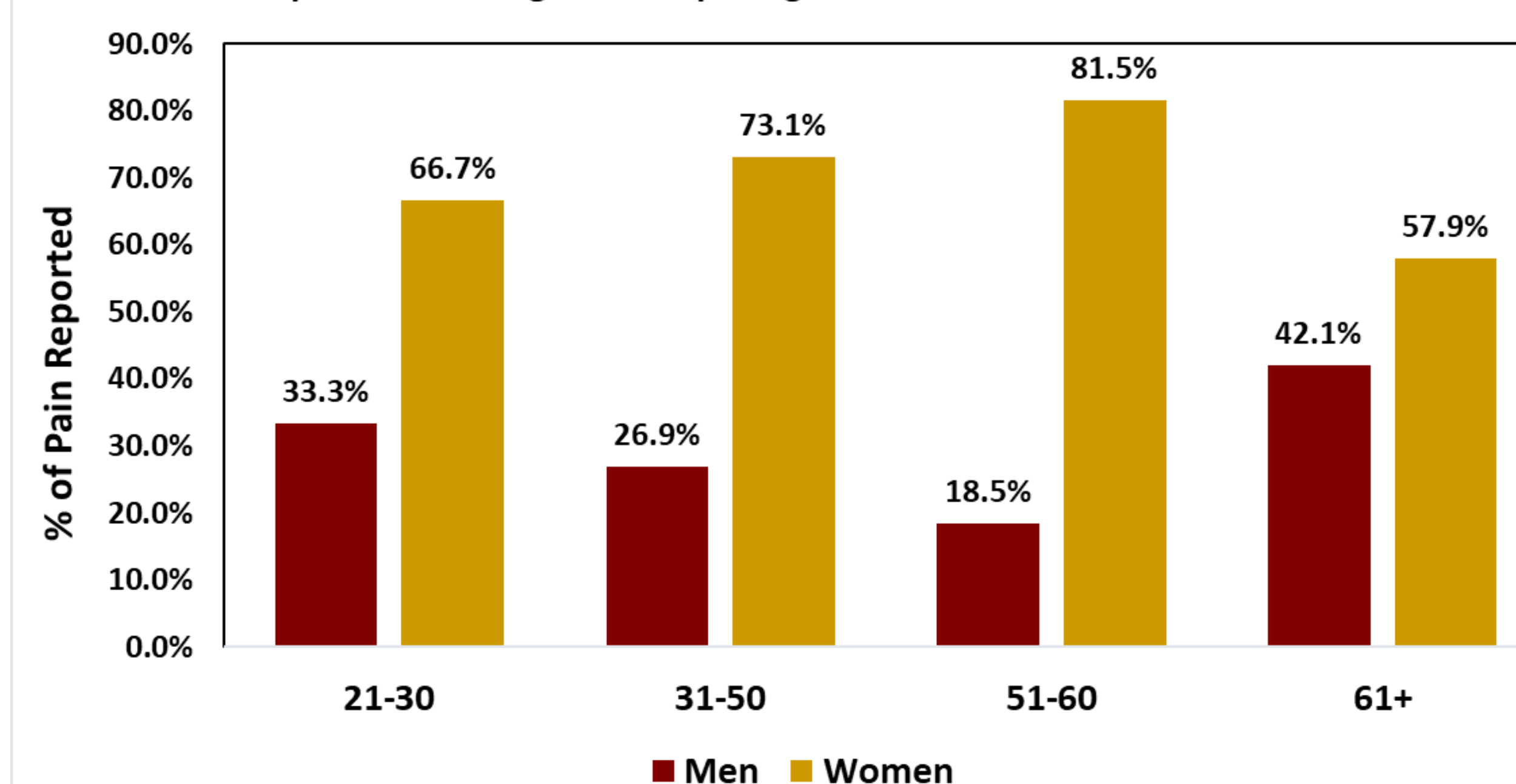
Most participants reported no MSK/RHU symptomatology after each dose. However, there was a statistically significant increase in symptomatology after the 2nd dose in those reporting moderate-severe pain ($p=0.002051$).

Graph 3. Severity of MSK and Rheumatologic Symptoms After First and Second Vaccine Dose During the Night



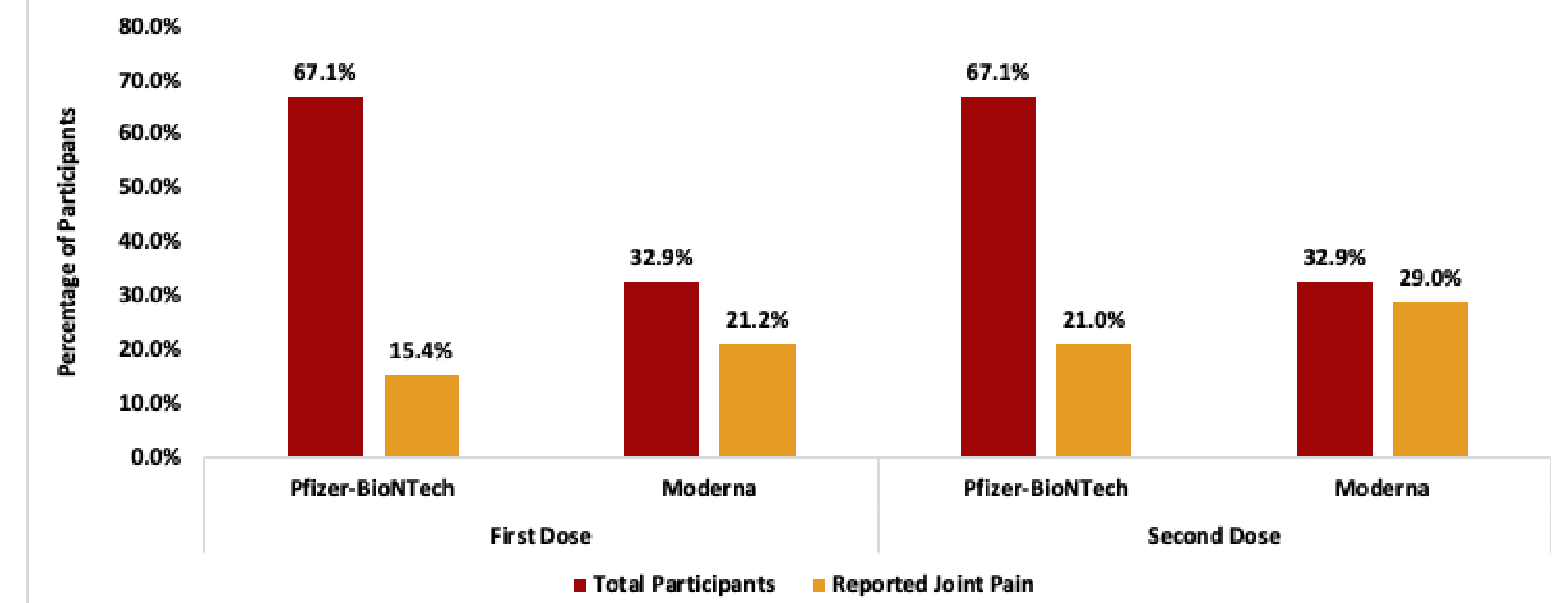
Most participants reported no MSK/RHU symptomatology after each dose. However, there was a statistically significant increase in symptomatology after the 2nd dose in those reporting moderate-severe pain ($p=0.015468$).

Graph 4. Percentage of Pain per Age Cohort between Men & Women



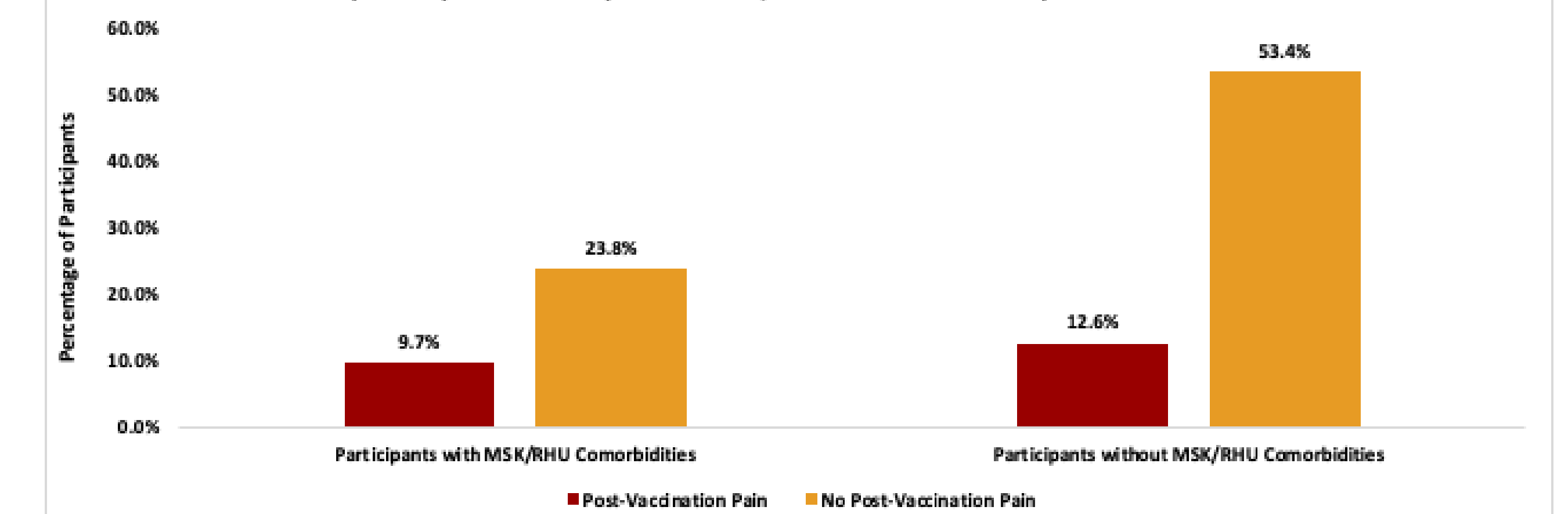
We observed a trend in which the women participants reported more MSK/RHU symptomatology across all age cohorts.

Graph 5. Percentage of Participants that Reported Joint Pain after First and Second Dose



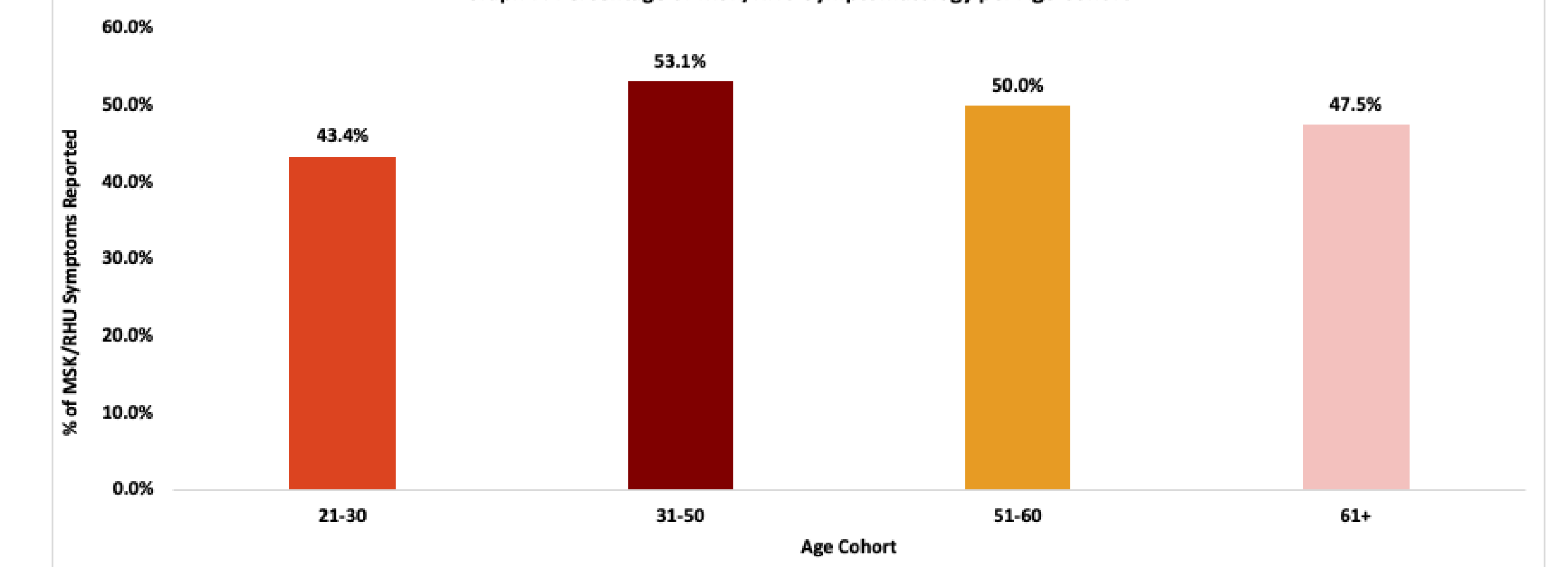
We found no difference in reported MSK/RHU symptomatology between Pfizer-BioNTech and Moderna vaccines. This suggests that both brands similarly affect the Puerto Rican population.

Graph 6. Proportion of Participants with MSK/RHU Comorbidities that Reported Pain after Vaccination



Vaccine adverse effects were not particular to a specific cohort, regardless of preexisting musculoskeletal/rheumatic condition status.

Graph 7. Percentage of MSK/RHU Symptomatology per Age Cohort



We observed no difference in reported MSK/RHU symptomatology across age cohorts, suggesting that the population suffers similar symptomatology regardless of age group.

CONCLUSION

Data showed increased intensity in musculoskeletal/rheumatic symptomatology after the second dose. This data could be useful for vaccination administration guidelines and public health matters.

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