# Simsurveys

## CCF IBD Healthcare Access Survey (2023)

### Validation Study: Simulated Data vs. Published Results

Reference: Crohn's & Colitis Foundation Healthcare Access Survey (Feb–Jun 2023)

Published: n = 2,281 IBD patients & caregivers (CCF network, US) | Simulated: n = 2,281 simulated respondents (patient model)

November 06, 2026

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# Executive Summary

This report presents a validation study comparing simulated survey data generated by Simsurveys against published results from the Crohn's & Colitis Foundation's 2023 Healthcare Access Survey. The original survey collected 2,281 responses from IBD patients and caregivers in the United States, conducted online from February–June 2023 via the CCF network. Results were published in Inflammatory Bowel Diseases (Oxford Academic, 2024; PMC12235136). The study examines healthcare access barriers, medication access and insurance challenges, step therapy mandates, health consequences, and financial burden for people living with inflammatory bowel disease.

A subset of 20 questions was selected across five thematic clusters: Disease Profile (3 questions), Current Treatment (4 questions), Medication Access Barriers (4 questions), Health Consequences (3 questions), and Financial Impact (6 questions). All questions are single-select. Five questions use filtered bases: Q8–Q11 are asked only of those prescribed medication (Q4 = Yes); Q12 is asked only of those with access problems (Q8 = Yes); Q13 is asked only of those with adverse outcomes (Q12 = Yes); Q20 is asked only of copay program users (Q7 = Yes).

Simsurveys generated 2,281 synthetic respondents using its patient model with targeting criteria (diagnosed IBD, US, age 18+) and demographic quotas (gender: 68% female / 32% male; age: 78% under 65 / 22% 65+). The age quota is critical because it proxies for insurance type — under-65 patients are primarily on employer/commercial insurance requiring prior authorization for biologics, while 65+ patients are on Medicare Part B which covers infusions without prior auth.

Alignment is assessed using Kullback–Leibler (KL) Divergence, which measures distributional similarity between published and simulated response distributions. KL values below 0.05 indicate strong alignment; 0.05–0.15 moderate alignment; above 0.15 warrants review. The model achieves strong or good alignment on 85% of questions (17/20), with a mean KL of 0.074 and median of 0.055.

Three questions require review: Q5 (biologic use, KL=0.390), Q7 (copay program use, KL=0.178), and Q13 (work/daily impact, KL=0.173). The Q5 and Q7 gaps reflect a known sample bias — the CCF convenience sample is composed of highly engaged Foundation members, 75% of whom are on advanced specialty medications and 54% use copay programs, rates significantly higher than the broader IBD population. The model's lower estimates likely reflect more representative IBD population rates. Financial impact questions show excellent alignment, with Q16 (financial sacrifices) achieving a near-perfect KL of 0.000 and Q19 (credit card debt) at 0.001.

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# KL Divergence Summary

| ID | Question | Cluster | KL Div | Status |
|---|---|---|---|---|
| Q1 | What type of inflammatory bowel disease have you been dia... | Disease Profile | 0.092 | ✓ Good |
| Q2 | How would you describe your IBD activity over the past 6 ... | Disease Profile | 0.048 | ✓ Strong |
| Q3 | Do you receive your IBD care at an academic medical center? | Disease Profile | 0.062 | ✓ Good |
| Q4 | Have you been prescribed medication for your IBD in the p... | Current Treatment | 0.037 | ✓ Strong |
| Q5 | Are you currently taking an advanced specialty medication... | Current Treatment | 0.390 | Review |
| Q6 | Have you taken corticosteroids for your IBD in the past 1... | Current Treatment | 0.002 | ✓ Strong |
| Q7 | Have you used a copay assistance program, coupon, copay c... | Current Treatment | 0.178 | Review |
| Q8 | In the past 12 months, have you experienced problems acce... | Medication Access Barr... | 0.124 | ✓ Good |
| Q9 | Were you able to get all of your prescribed IBD medicatio... | Medication Access Barr... | 0.013 | ✓ Strong |
| Q10 | Have you experienced an insurance approval delay of one m... | Medication Access Barr... | 0.024 | ✓ Strong |
| Q11 | Has your insurance required you to try a different medica... | Medication Access Barr... | 0.039 | ✓ Strong |
| Q12 | Did you experience adverse health outcomes (flare-up or w... | Health Consequences | 0.011 | ✓ Strong |
| Q13 | Did your medication access problems affect your ability t... | Health Consequences | 0.173 | Review |
| Q14 | In the past 12 months, has your insurance never or only s... | Health Consequences | 0.076 | ✓ Good |
| Q15 | In the past 12 months, have you had trouble paying or bee... | Financial Impact | 0.003 | ✓ Strong |
| Q16 | In the past 12 months, have you or someone in your househ... | Financial Impact | 0.000 | ✓ Strong |
| Q17 | In order to pay for your IBD healthcare costs, have you p... | Financial Impact | 0.067 | ✓ Good |
| Q18 | In order to pay for your IBD healthcare costs, have you c... | Financial Impact | 0.074 | ✓ Good |
| Q19 | In order to pay for your IBD healthcare costs, have you i... | Financial Impact | 0.001 | ✓ Strong |
| Q20 | If you used a copay assistance program, did you run out o... | Financial Impact | 0.071 | ✓ Good |

**Average KL Divergence: 0.074 | Median: 0.055**

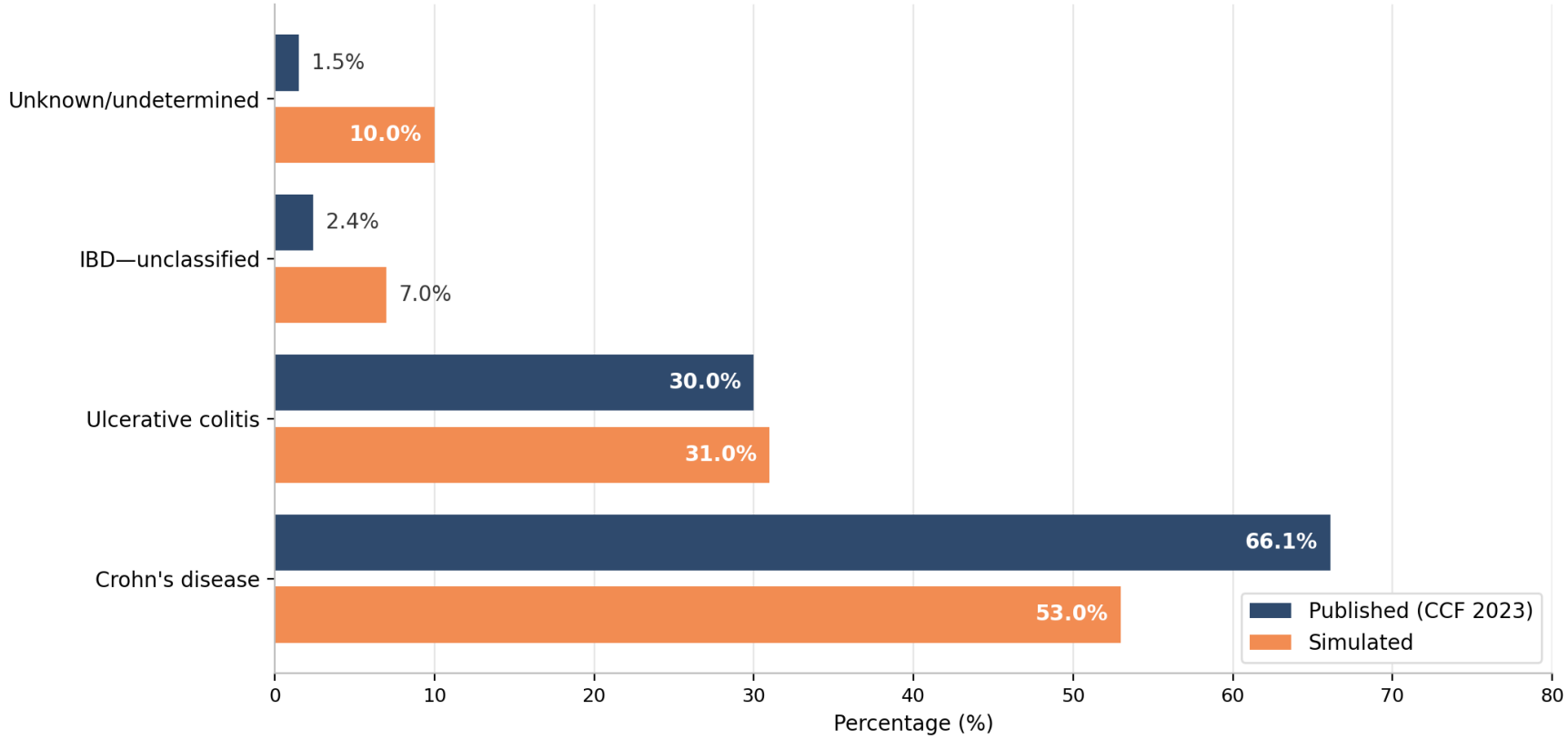
KL Divergence < 0.05 = strong | 0.05–0.15 = good | > 0.15 = review needed

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## Q1

# What type of inflammatory bowel disease have you been diagnosed with?

KL Divergence = 0.092

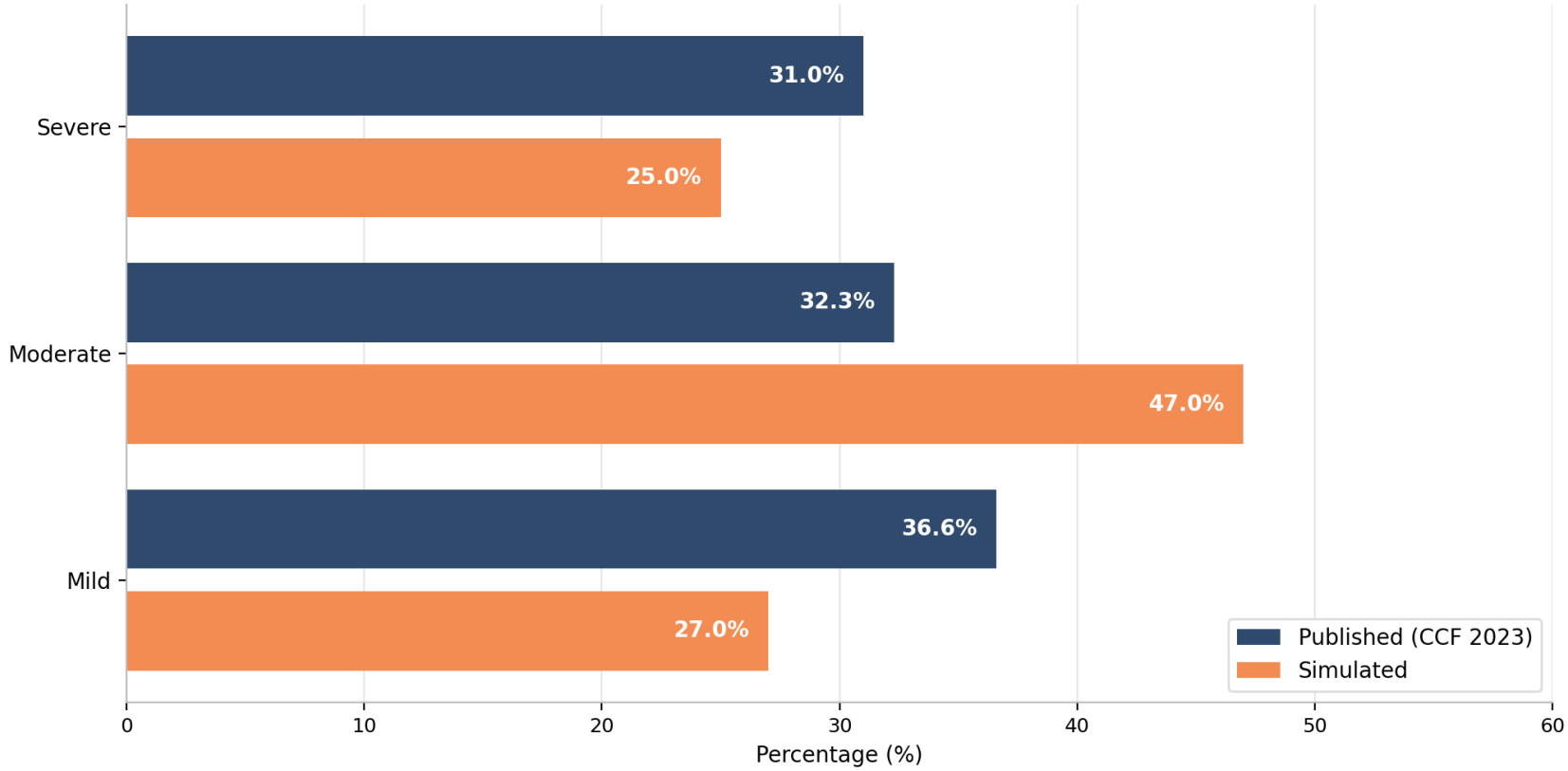



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## Q2

# How would you describe your IBD activity over the past 6 months?

KL Divergence = 0.048

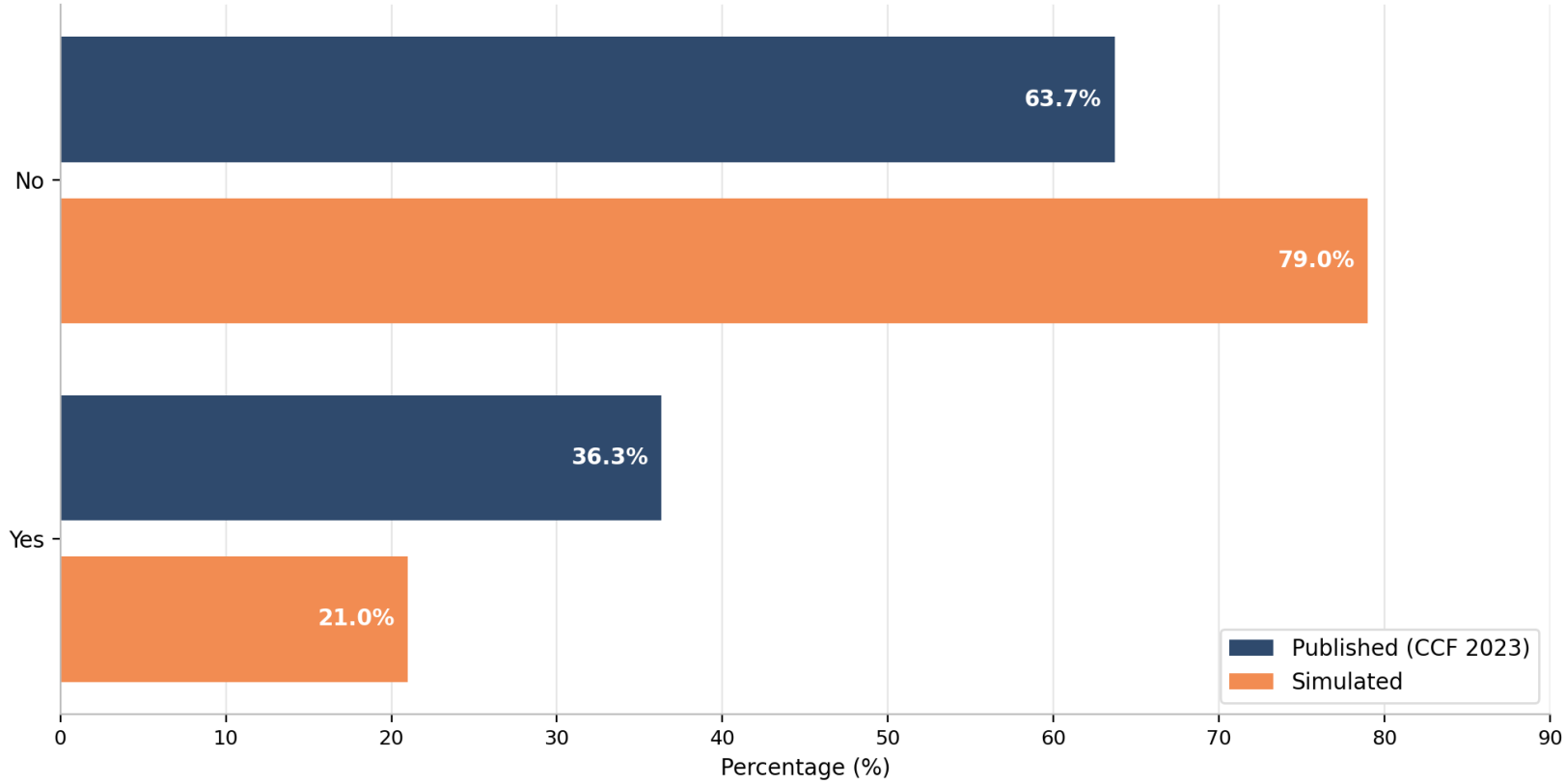



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## Q3

# Do you receive your IBD care at an academic medical center?

KL Divergence = 0.062

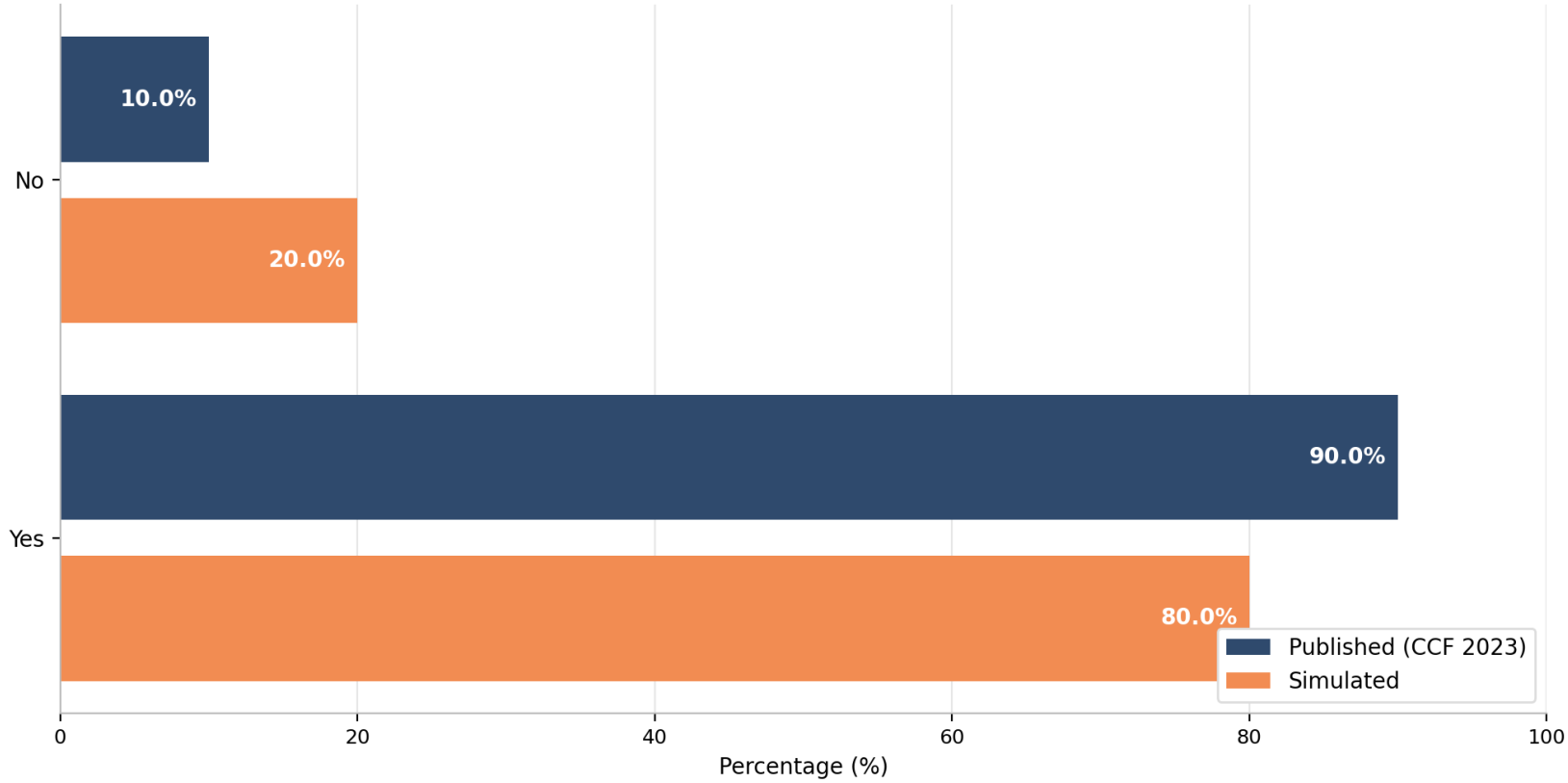



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## Q4

# Have you been prescribed medication for your IBD in the past 12 months?

KL Divergence = 0.037

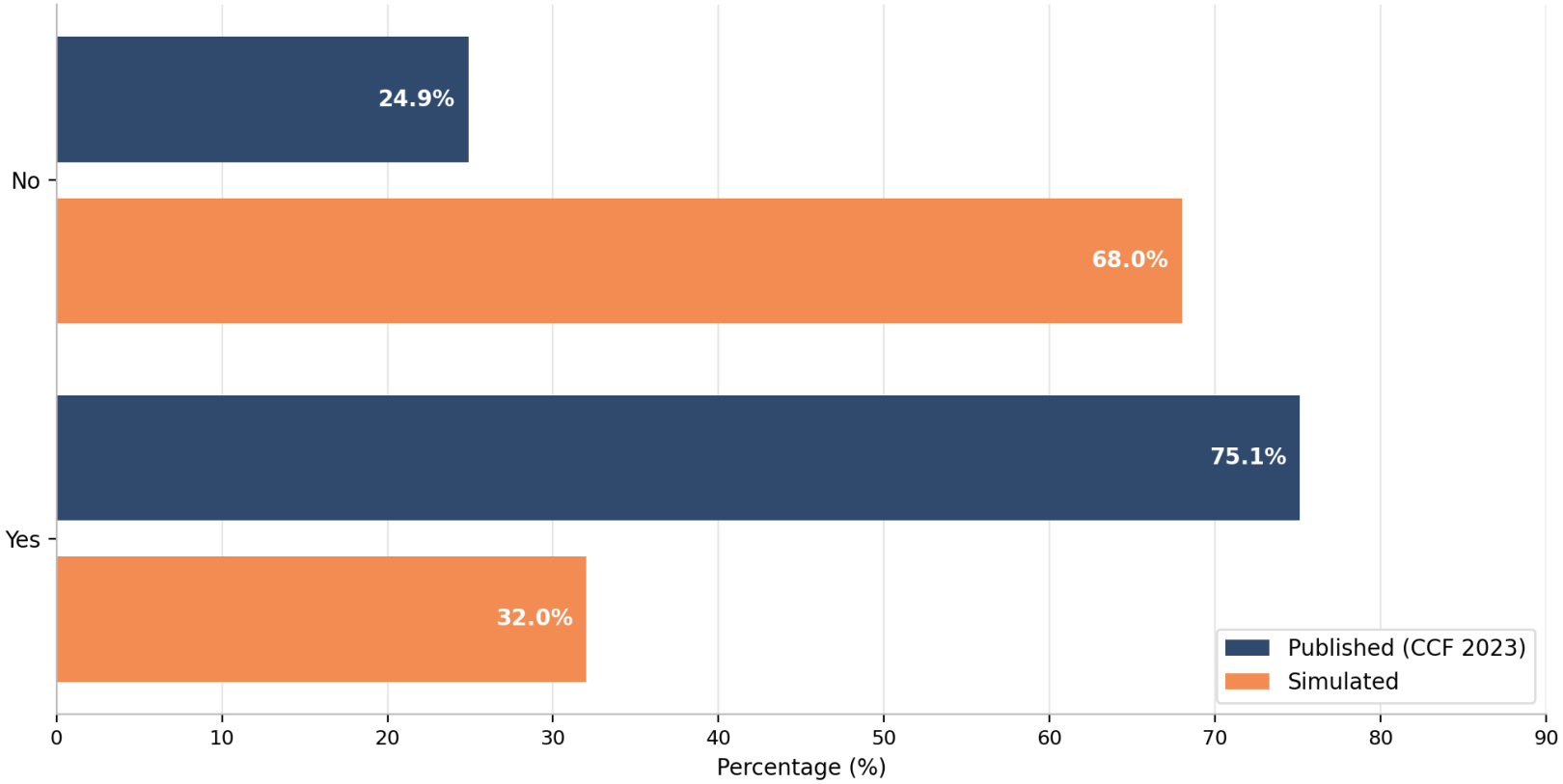



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## Q5

# Are you currently taking an advanced specialty medication (biologic or biosimilar) for your IBD?

KL Divergence = 0.390

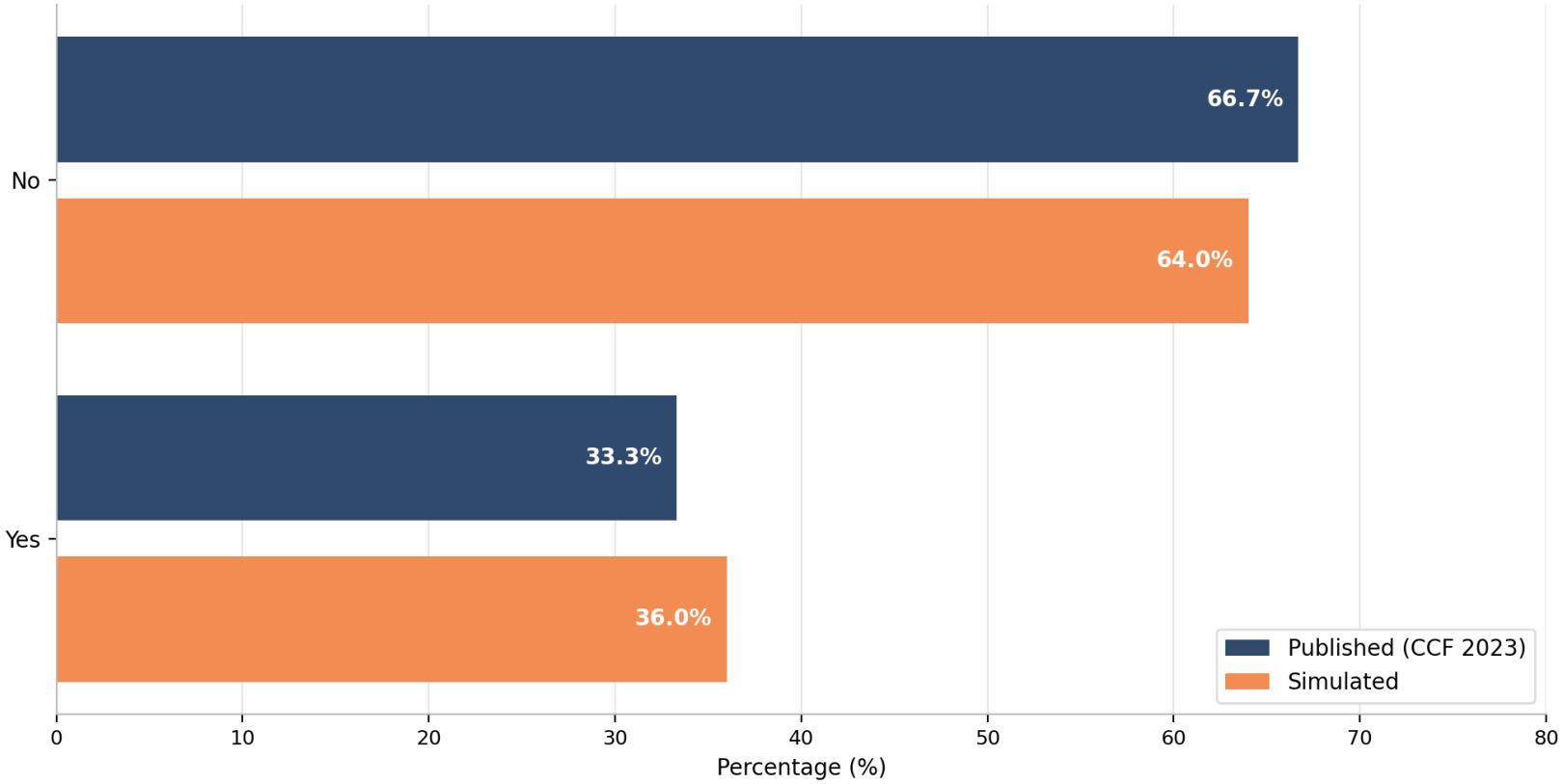



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## Q6

# Have you taken corticosteroids for your IBD in the past 12 months?

KL Divergence = 0.002

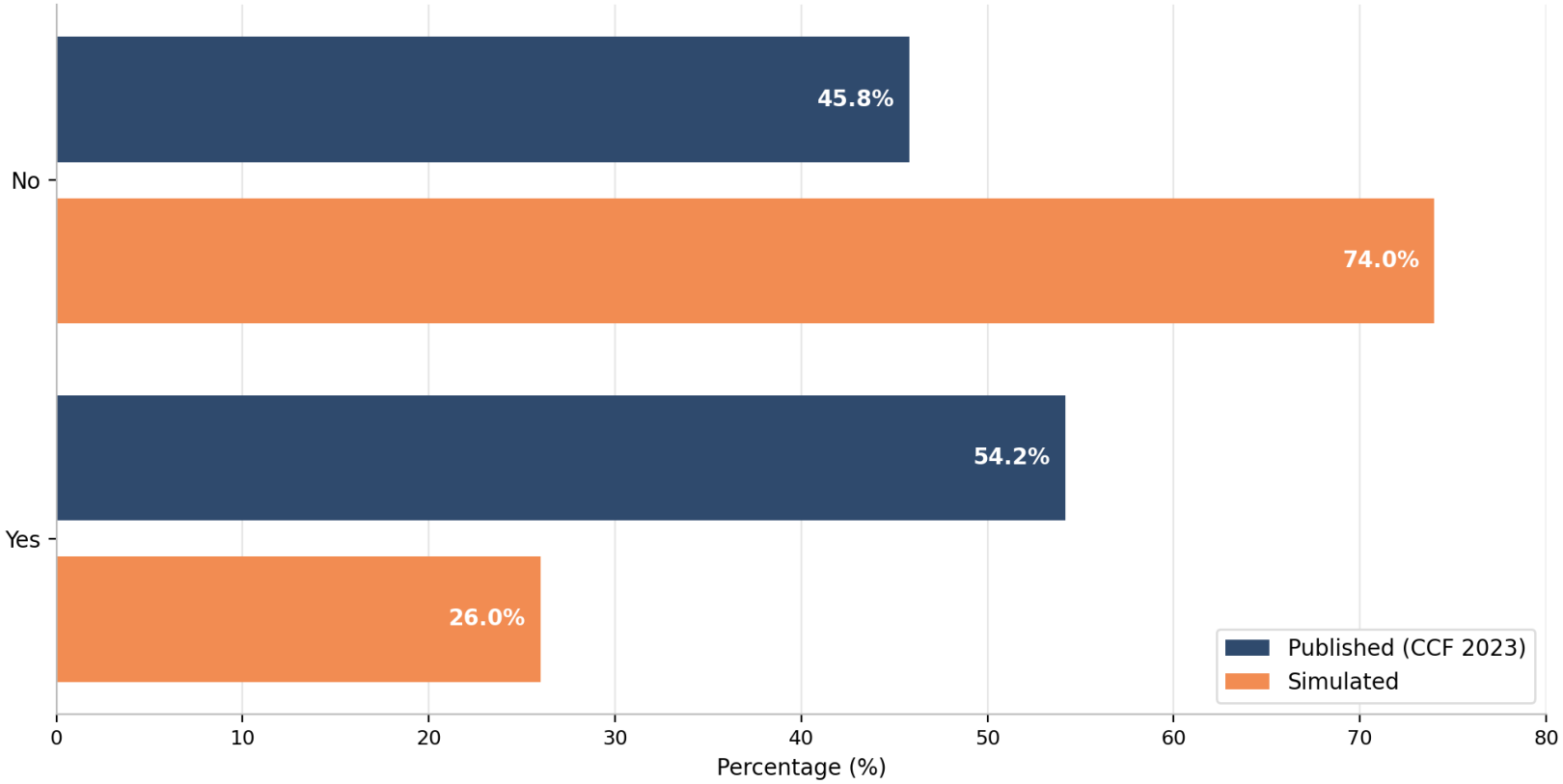



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## Q7

### Have you used a copay assistance program, coupon, copay card, or patient assistance program for your IBD medications in the past 12 months?

KL Divergence = 0.178



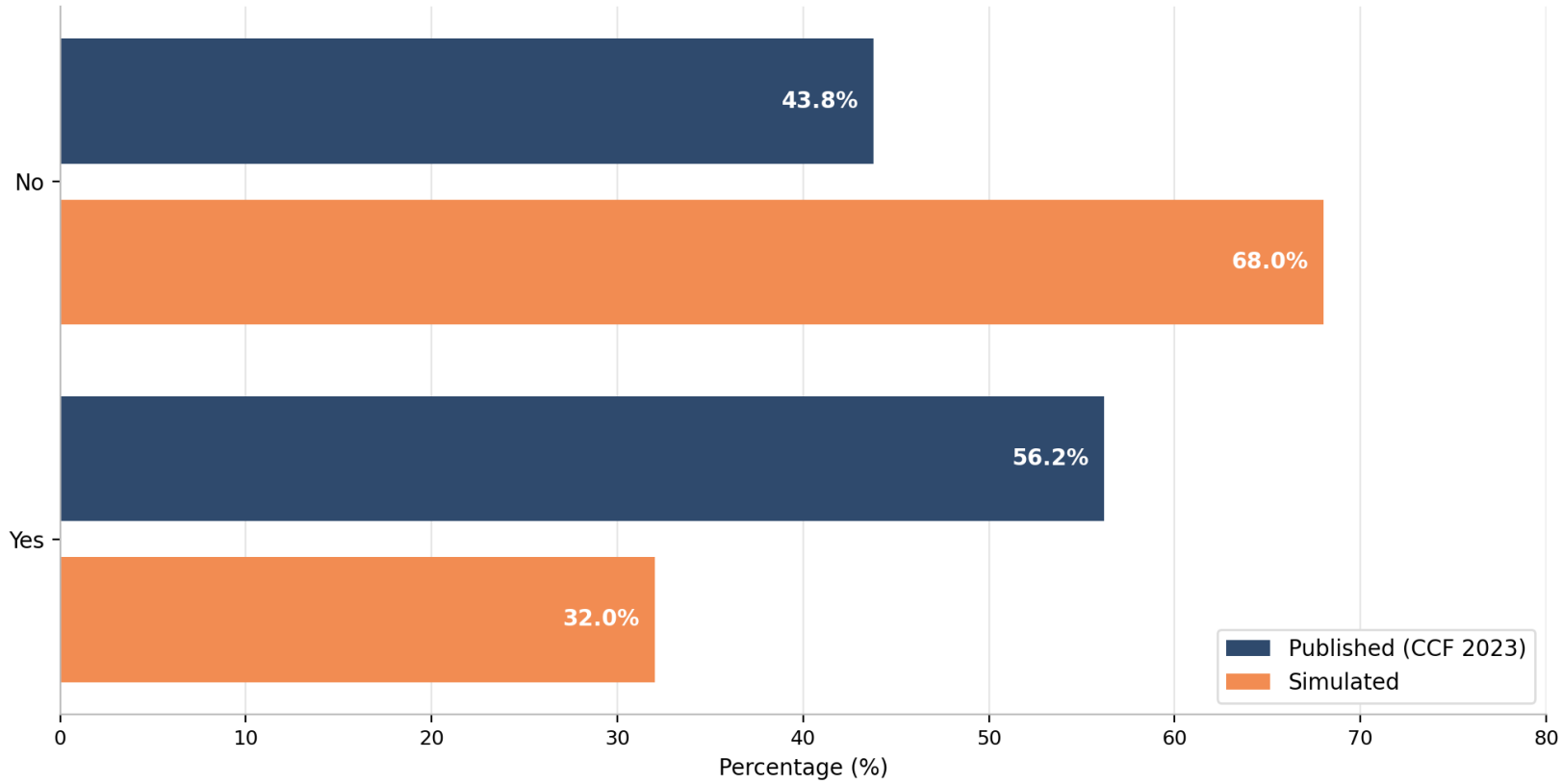

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## Q8

# In the past 12 months, have you experienced problems accessing your IBD prescriptions due to health insurance?

*Base: prescribed medication, Q4 = Yes (live n=2,051; sim n=1,821)*

KL Divergence = 0.124



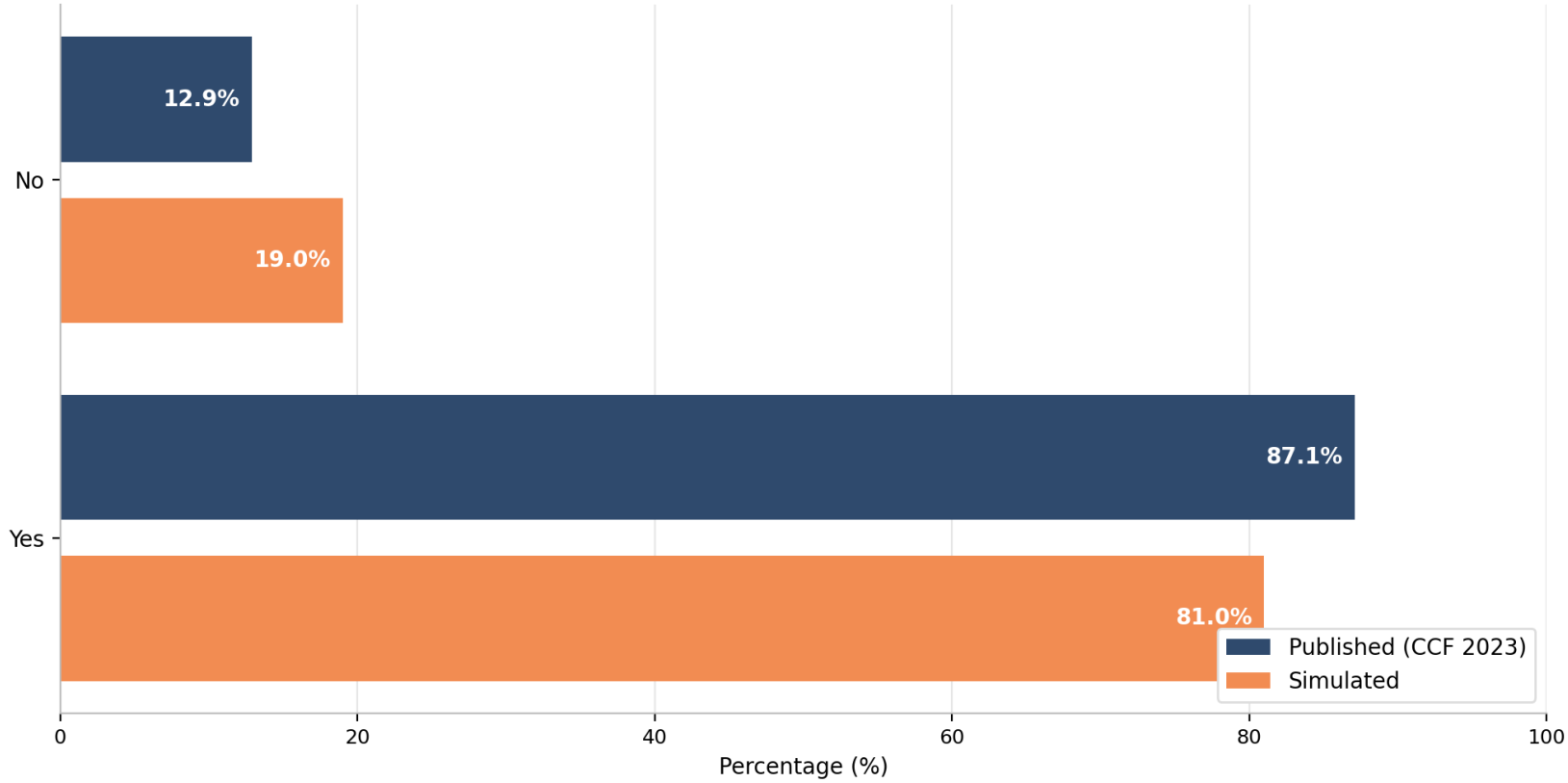

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## Q9

# Were you able to get all of your prescribed IBD medications in the past 12 months?

*Base: prescribed medication, Q4 = Yes (live n=2,051; sim n=1,821)*

KL Divergence = 0.013



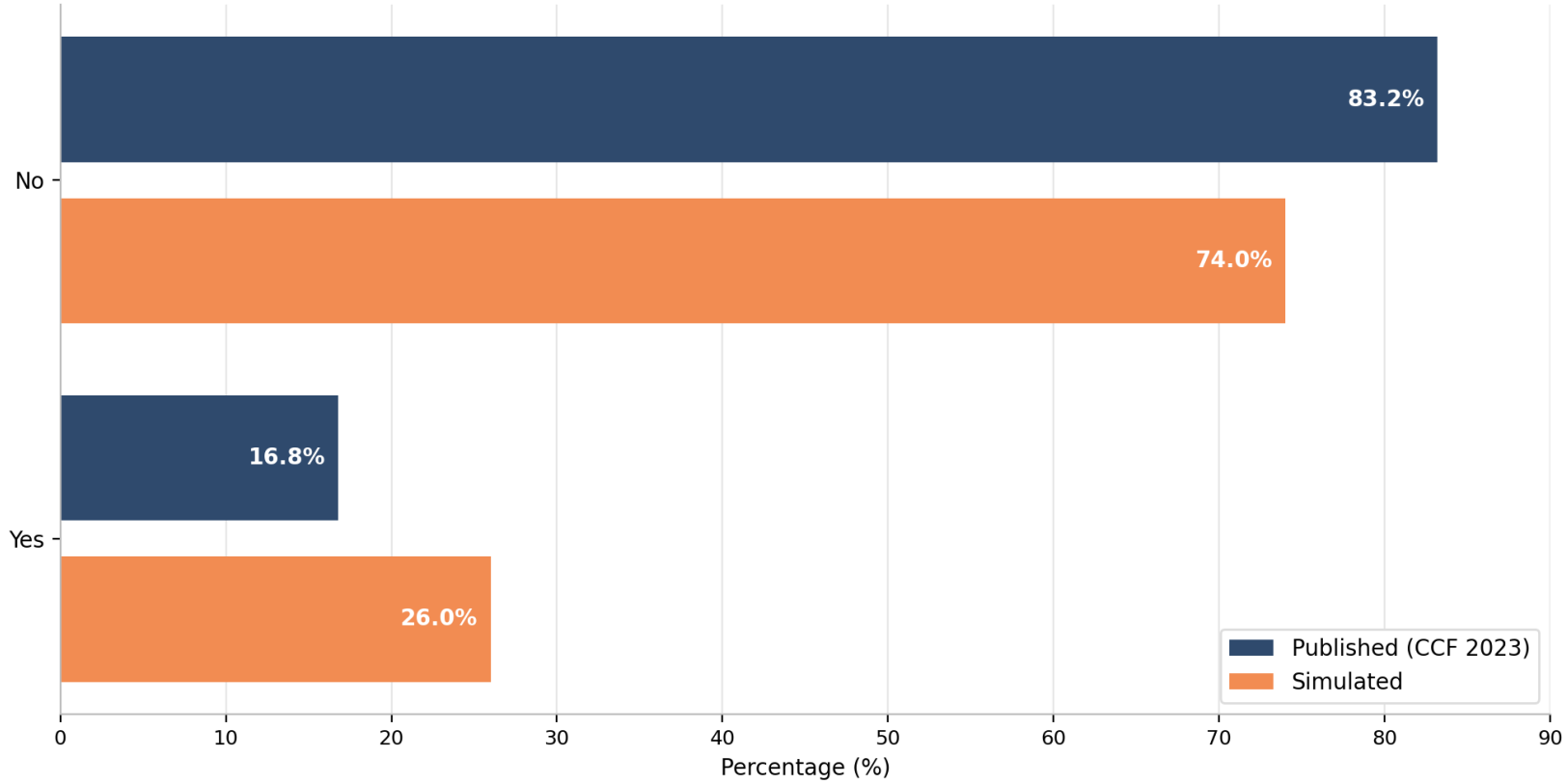

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## Q10

# Have you experienced an insurance approval delay of one month or longer for your IBD medications in the past 12 months?

*Base: prescribed medication, Q4 = Yes (live n=2,029; sim n=1,821)*

KL Divergence = 0.024



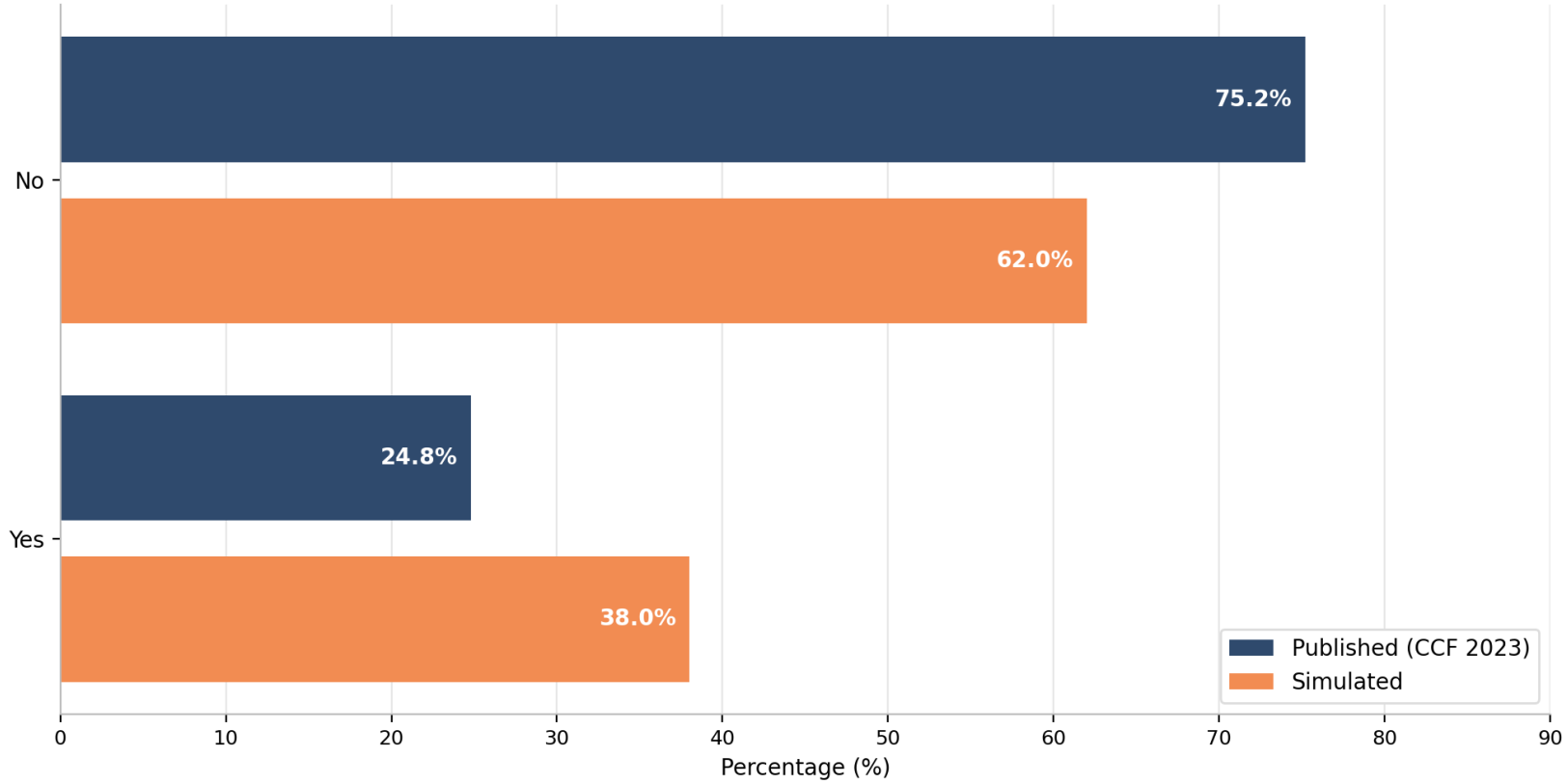

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## Q11

# Has your insurance required you to try a different medication before covering the one your doctor prescribed (step therapy)?

*Base: prescribed medication, Q4 = Yes (live n=1,936; sim n=1,821)*

KL Divergence = 0.039



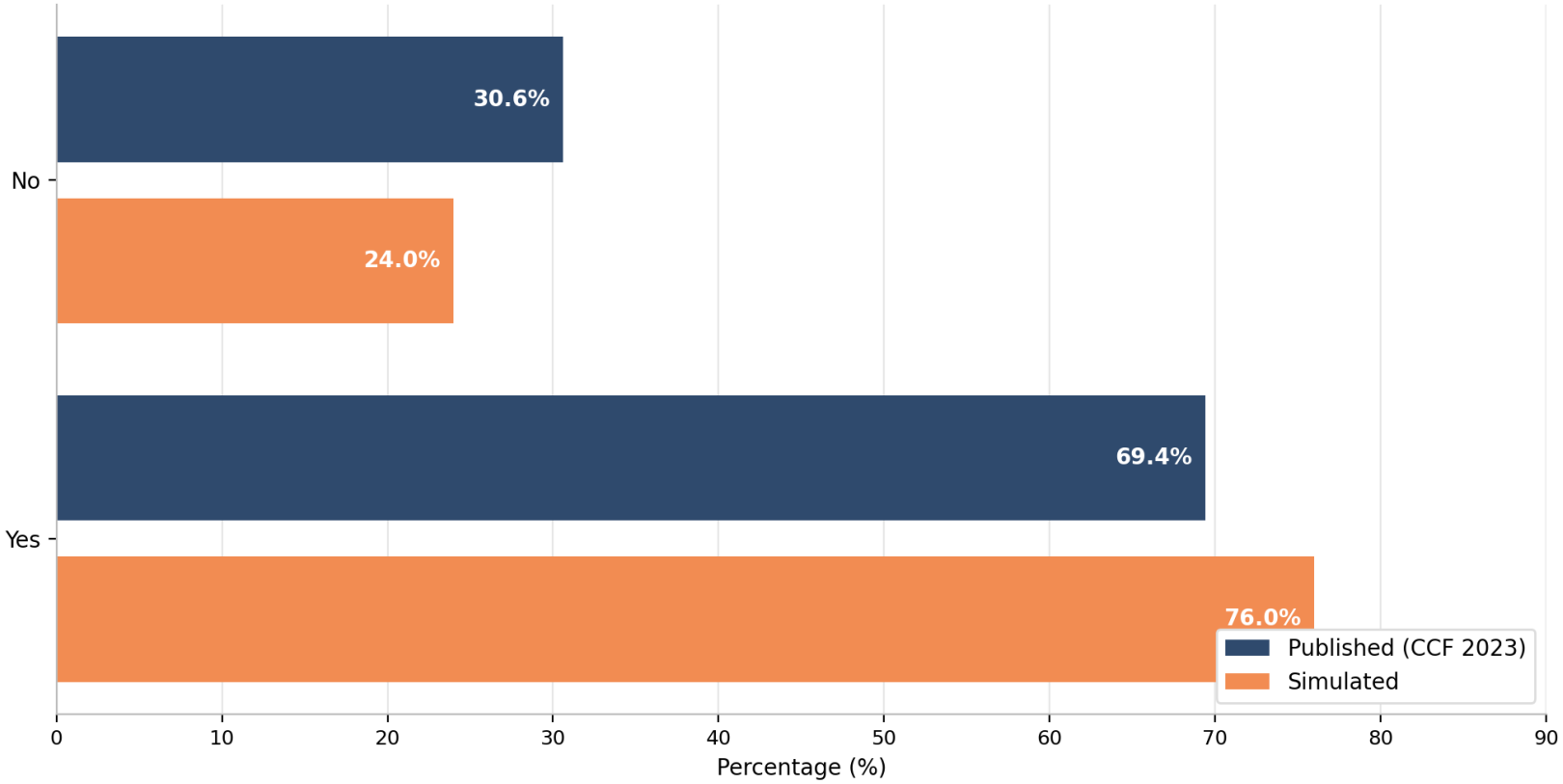

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## Q12

# Did you experience adverse health outcomes (flare-up or worsening symptoms) when unable to get or delayed in getting your prescribed IBD medications?

*Base: had access problems, Q8 = Yes (live n=1,084; sim n=586)*

KL Divergence = 0.011



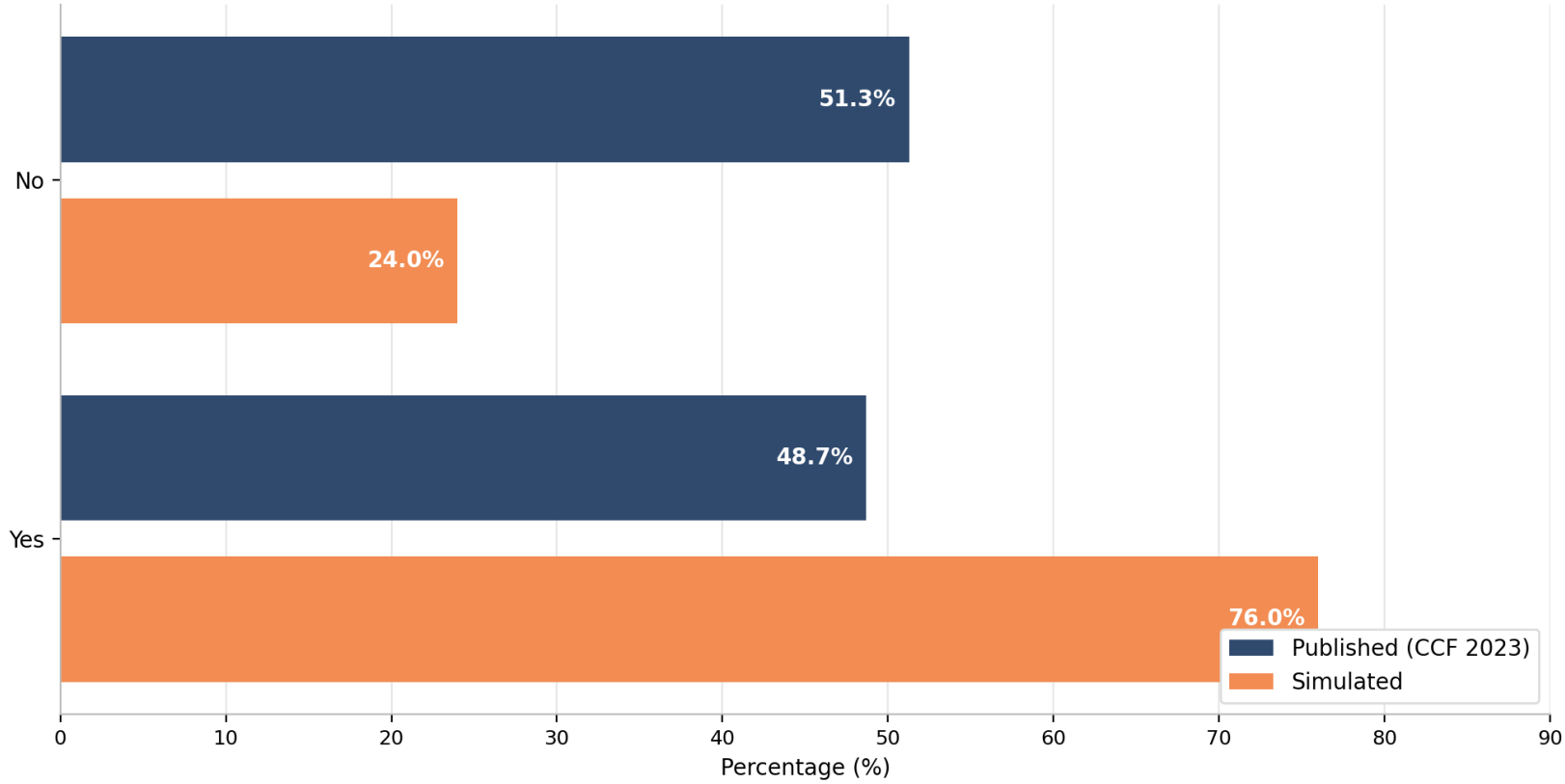

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## Q13

# Did your medication access problems affect your ability to work, attend school, or carry out daily activities?

*Base: had adverse outcomes, Q12 = Yes (live n=647; sim n=446)*

KL Divergence = 0.173



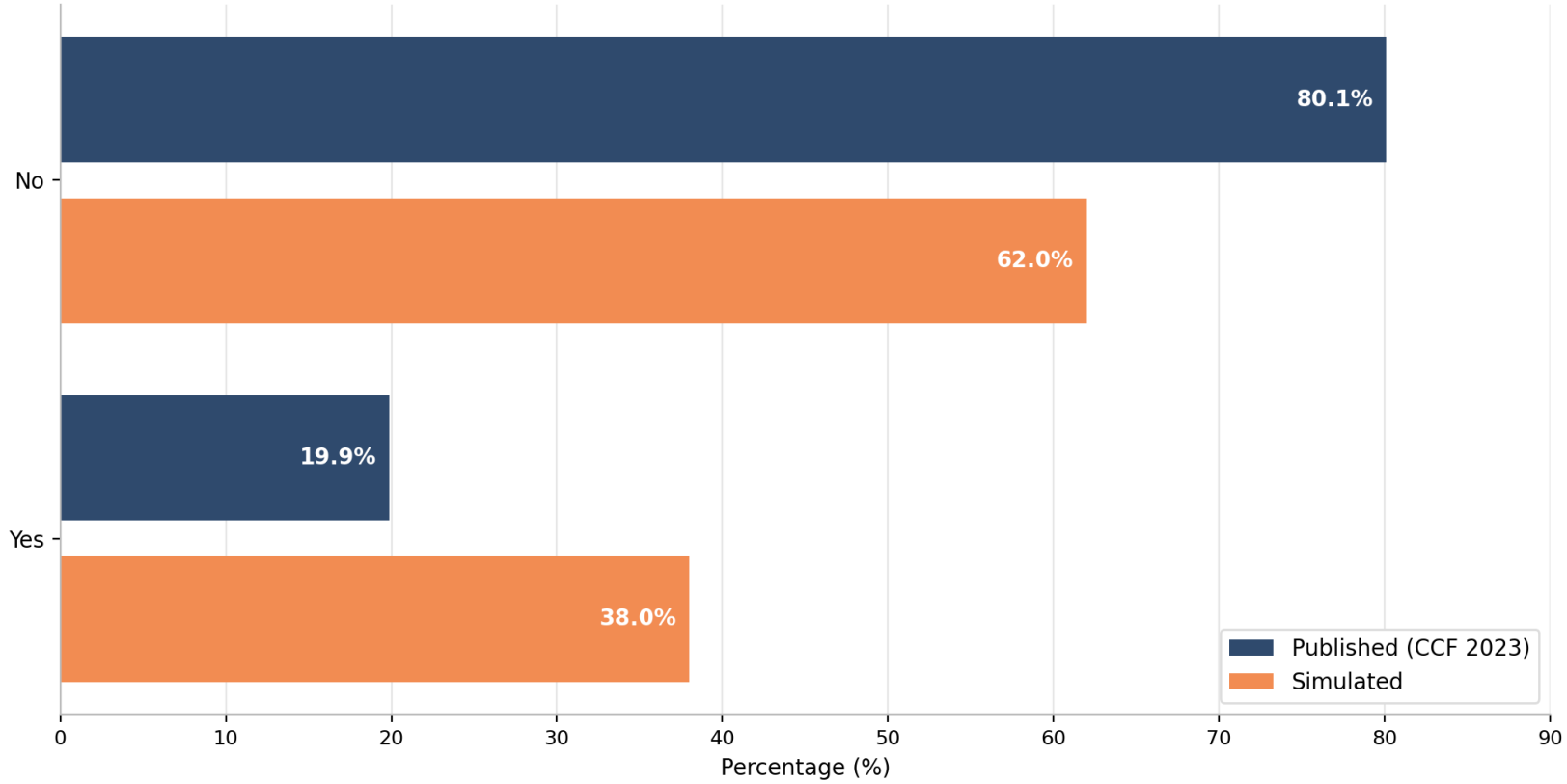

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## Q14

# In the past 12 months, has your insurance never or only sometimes covered a test or treatment your doctor ordered for your IBD?

*Base: needed test/treatment in past 12 months (live n=2,015; sim n=2,281)*

KL Divergence = 0.076

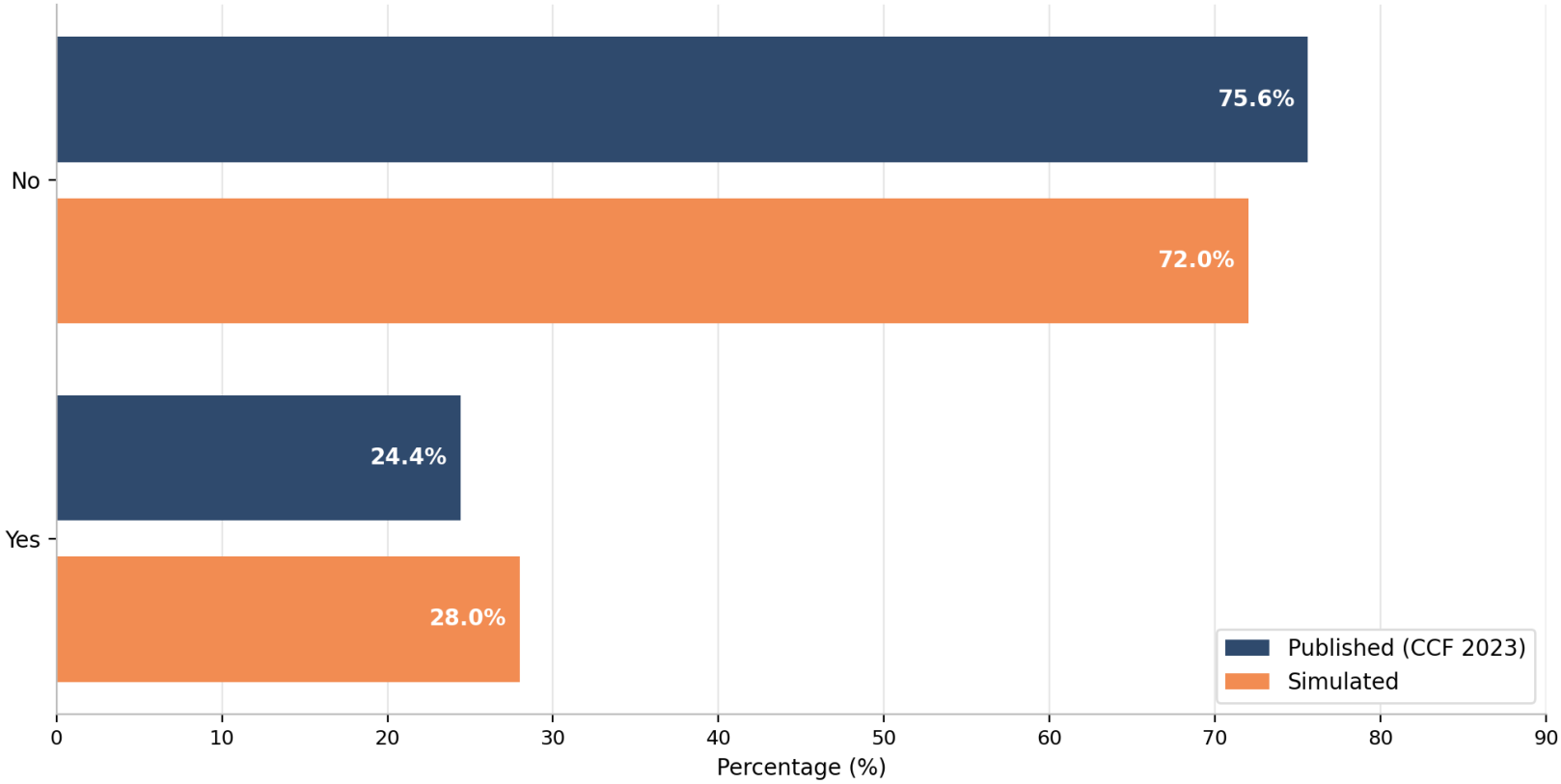



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## Q15

### In the past 12 months, have you had trouble paying or been unable to pay your IBD-related medical bills?

KL Divergence = 0.003

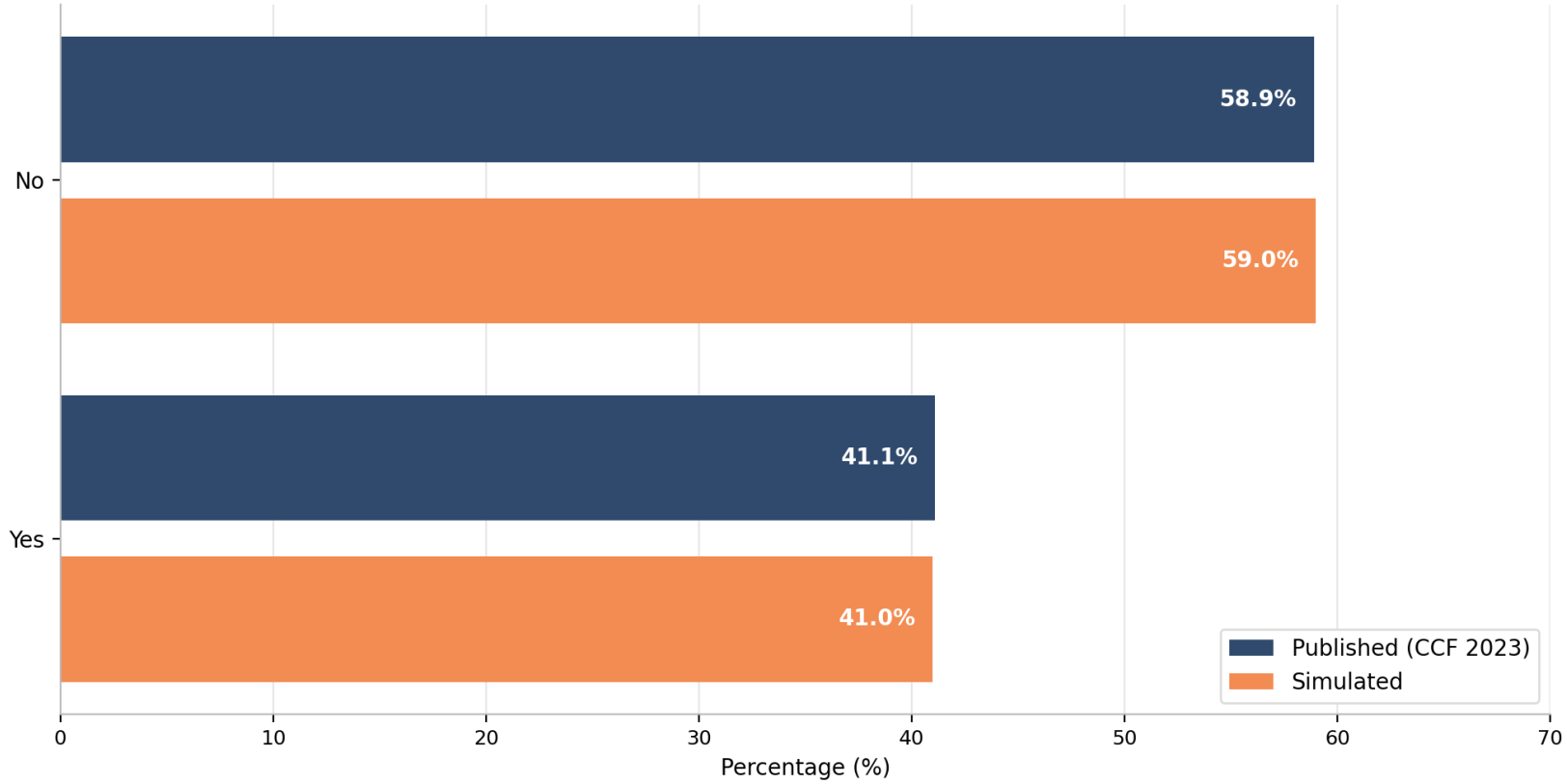



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## Q16

### In the past 12 months, have you or someone in your household made any financial sacrifices or trade-offs to pay for your IBD healthcare or insurance costs?

KL Divergence = 0.000

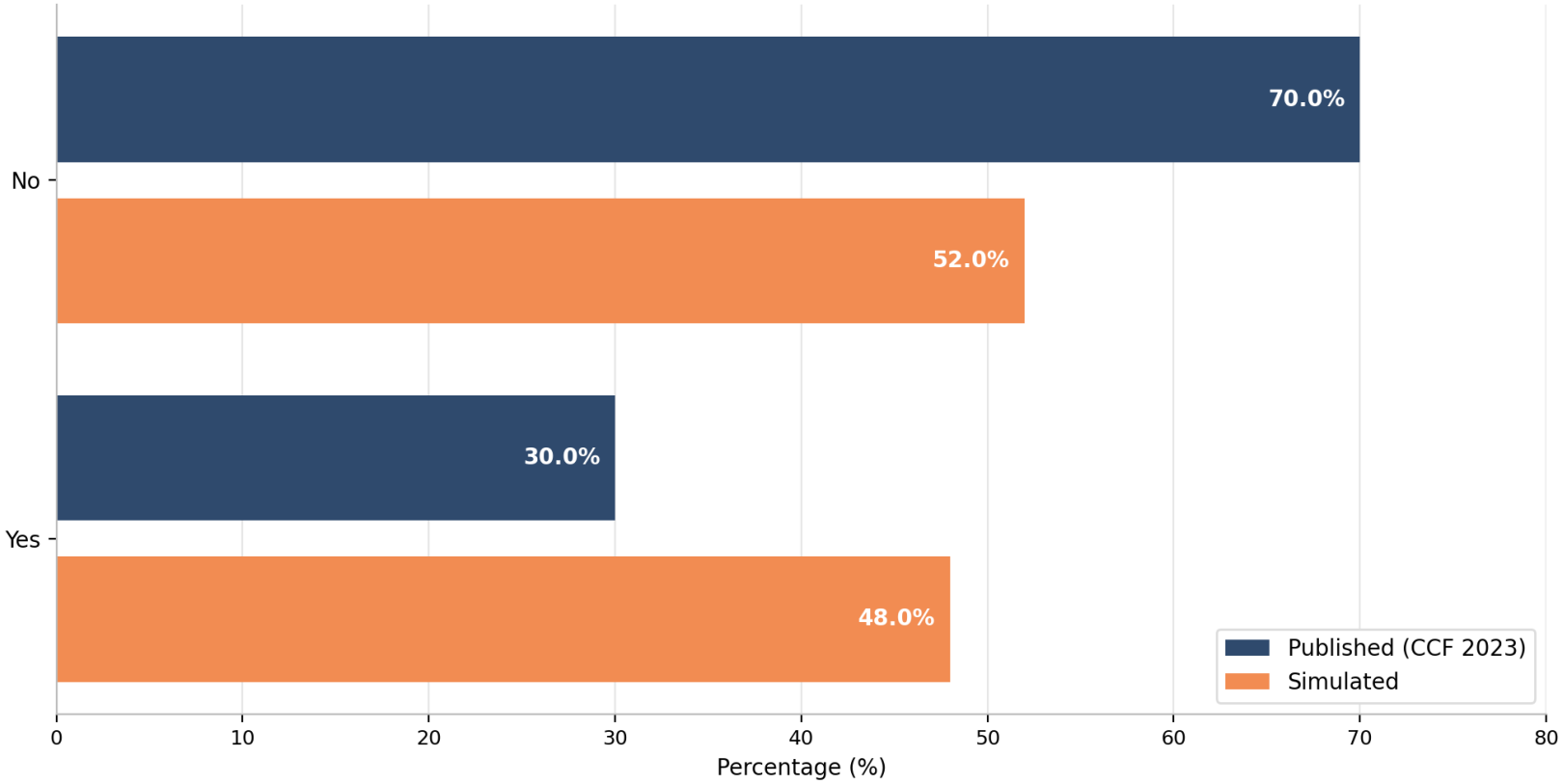



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## Q17

### In order to pay for your IBD healthcare costs, have you postponed vacations or given up major household purchases in the past 12 months?

KL Divergence = 0.067

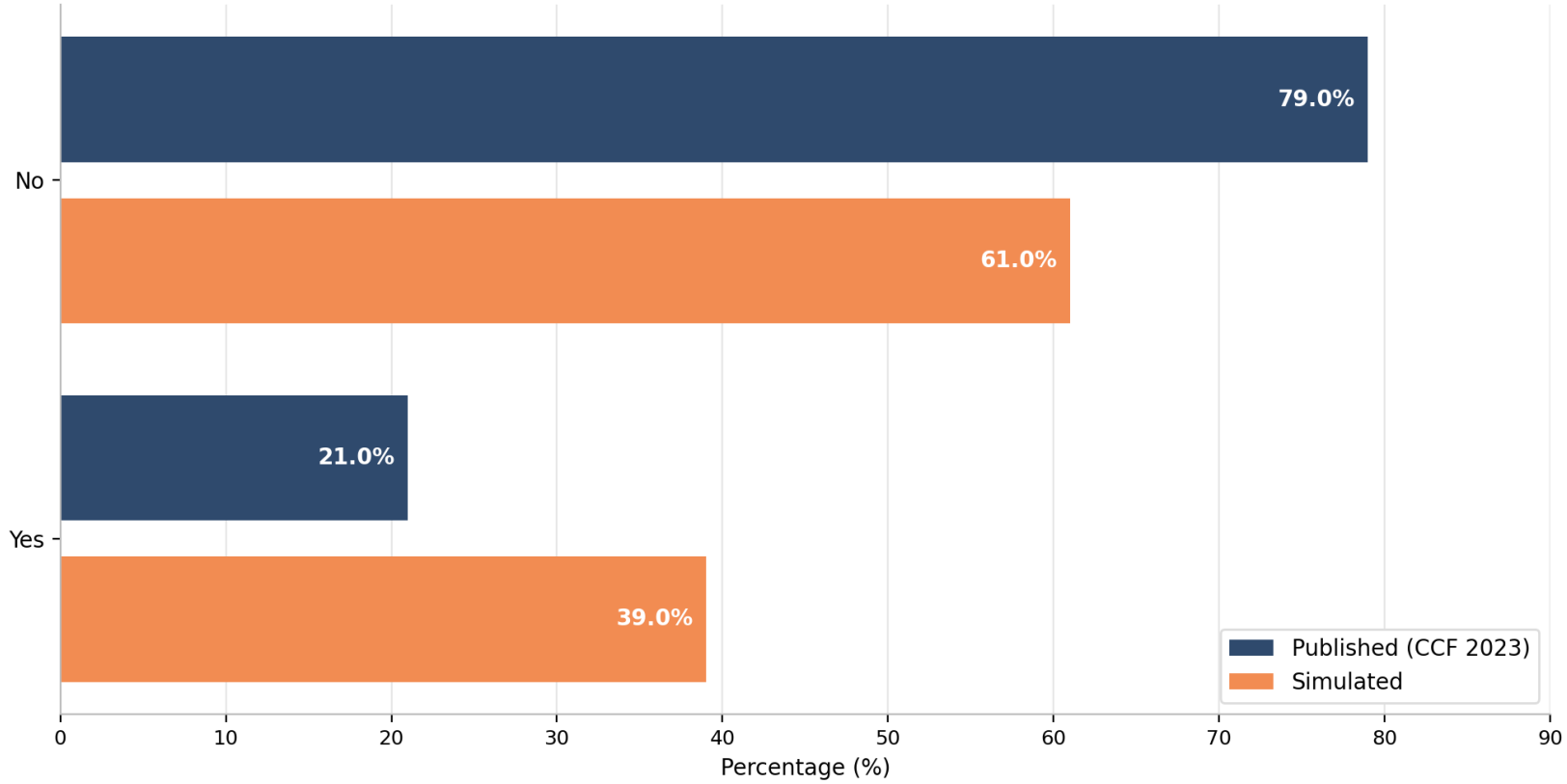



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## Q18

### In order to pay for your IBD healthcare costs, have you cut back on essential items such as food, clothing, or basic household items in the past 12 months?

KL Divergence = 0.074

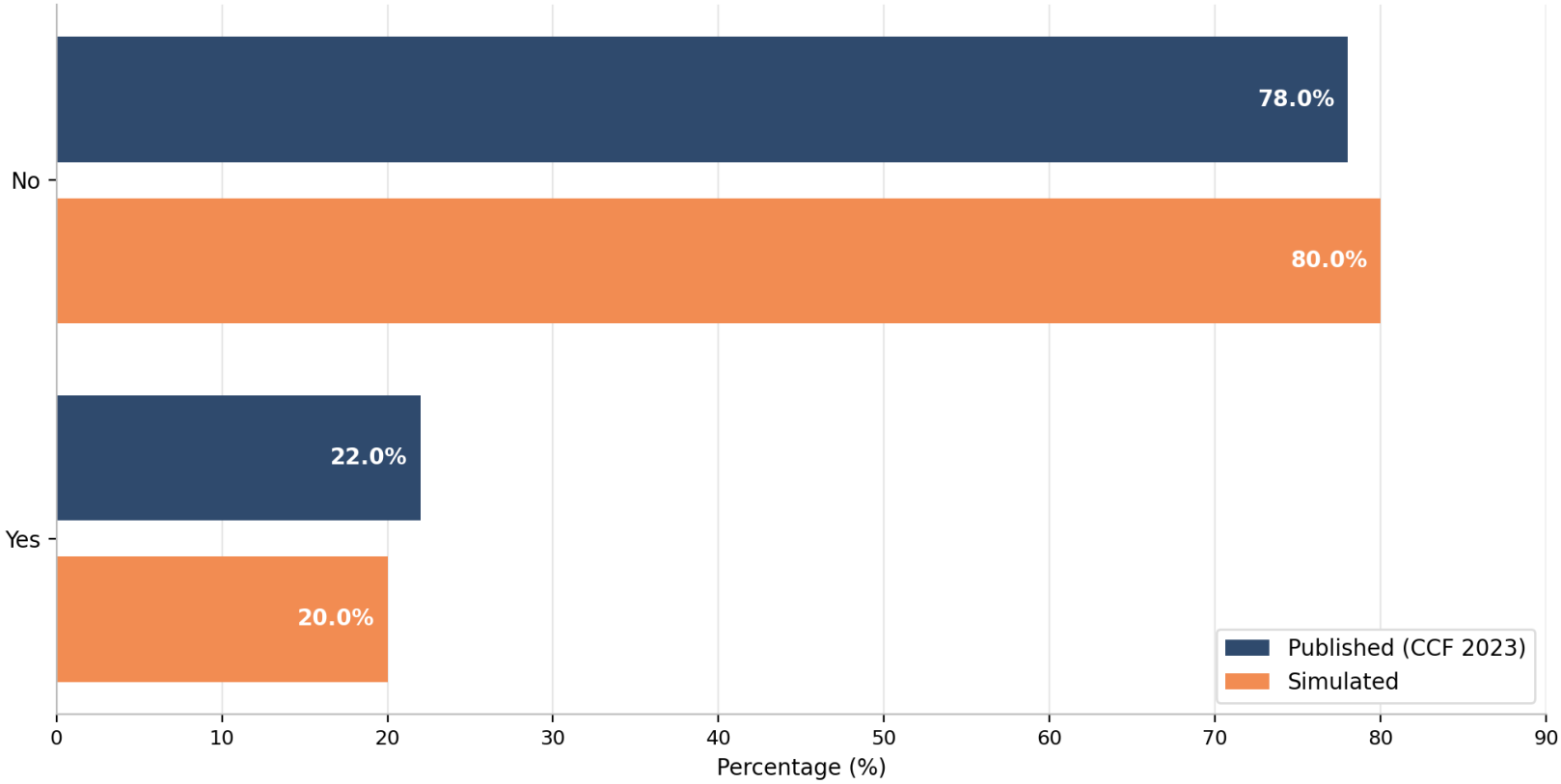



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## Q19

### In order to pay for your IBD healthcare costs, have you increased your credit card debt in the past 12 months?

KL Divergence = 0.001



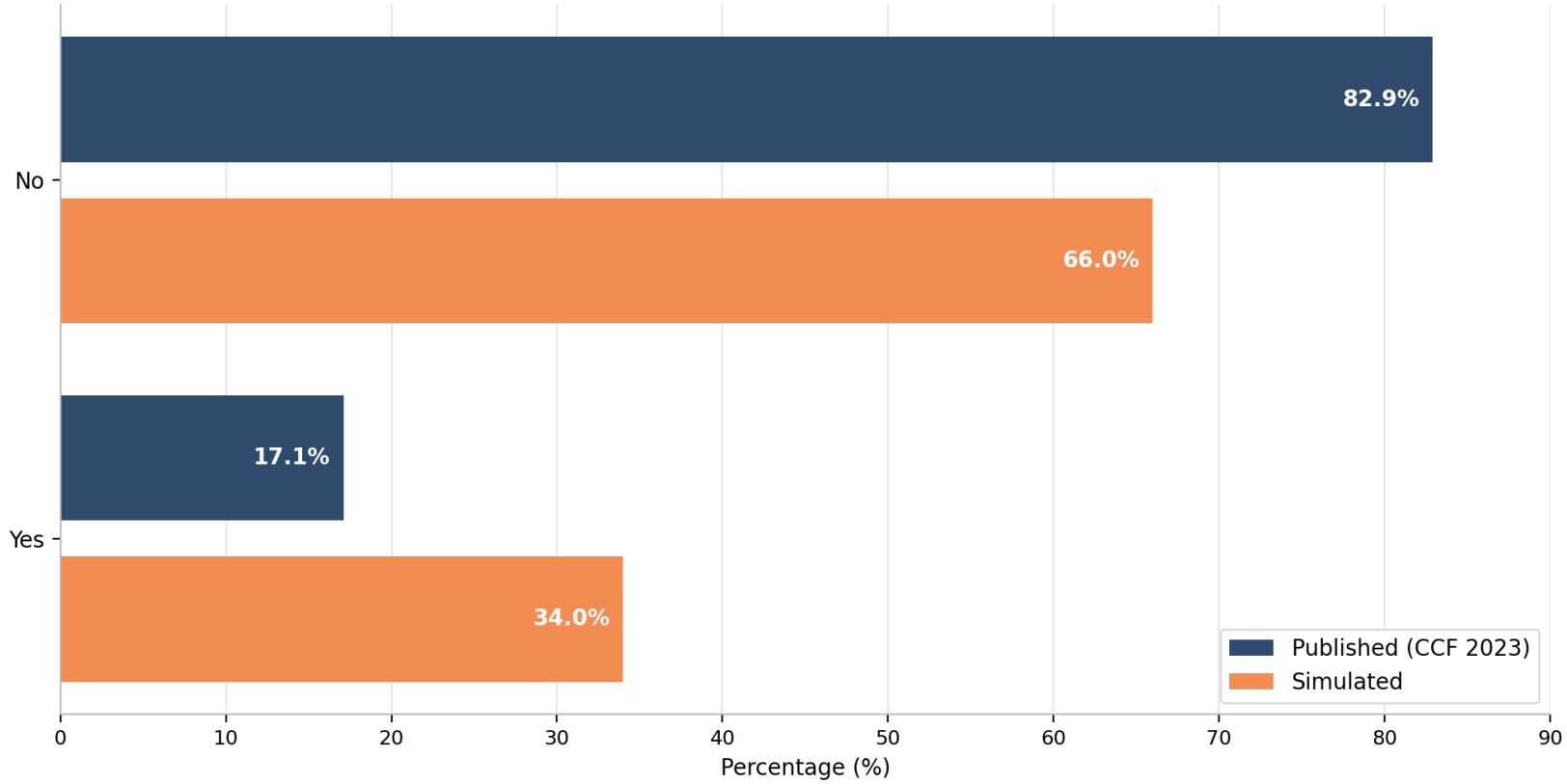

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## Q20

# If you used a copay assistance program, did you run out of copay assistance funds before the end of the year?

*Base: used copay program, Q7 = Yes (live n=1,232; sim n=588)*

KL Divergence = 0.071




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# Appendix: Survey Questions

**Q1: What type of inflammatory bowel disease have you been diagnosed with?**

*Responses: Crohn's disease | Ulcerative colitis | IBD—unclassified | Unknown/undetermined*

**Q2: How would you describe your IBD activity over the past 6 months?**

*Responses: Mild | Moderate | Severe*

**Q3: Do you receive your IBD care at an academic medical center?**

*Responses: Yes | No*

**Q4: Have you been prescribed medication for your IBD in the past 12 months?**

*Responses: Yes | No*

**Q5: Are you currently taking an advanced specialty medication (biologic or biosimilar) for your IBD?**

*Responses: Yes | No*

**Q6: Have you taken corticosteroids for your IBD in the past 12 months?**

*Responses: Yes | No*

**Q7: Have you used a copay assistance program, coupon, copay card, or patient assistance program for your IBD medications in the past 12 months?**

*Responses: Yes | No*

**Q8: In the past 12 months, have you experienced problems accessing your IBD prescriptions due to health insurance? [Base: prescribed medication, Q4 = Yes (live n=2,051; sim n=1,821)]**

*Responses: Yes | No*

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# Appendix: Survey Questions (continued)

**Q9: Were you able to get all of your prescribed IBD medications in the past 12 months? [Base: prescribed medication, Q4 = Yes (live n=2,051; sim n=1,821)]**

*Responses: Yes | No*

**Q10: Have you experienced an insurance approval delay of one month or longer for your IBD medications in the past 12 months? [Base: prescribed medication, Q4 = Yes (live n=2,029; sim n=1,821)]**

*Responses: Yes | No*

**Q11: Has your insurance required you to try a different medication before covering the one your doctor prescribed (step therapy)? [Base: prescribed medication, Q4 = Yes (live n=1,936; sim n=1,821)]**

*Responses: Yes | No*

**Q12: Did you experience adverse health outcomes (flare-up or worsening symptoms) when unable to get or delayed in getting your prescribed IBD medications? [Base: had access problems, Q8 = Yes (live n=1,084; sim n=586)]**

*Responses: Yes | No*

**Q13: Did your medication access problems affect your ability to work, attend school, or carry out daily activities? [Base: had adverse outcomes, Q12 = Yes (live n=647; sim n=446)]**

*Responses: Yes | No*

**Q14: In the past 12 months, has your insurance never or only sometimes covered a test or treatment your doctor ordered for your IBD? [Base: needed test/treatment in past 12 months (live n=2,015; sim n=2,281)]**

*Responses: Yes | No*

**Q15: In the past 12 months, have you had trouble paying or been unable to pay your IBD-related medical bills?**

*Responses: Yes | No*

**Q16: In the past 12 months, have you or someone in your household made any financial sacrifices or trade-offs to pay for your IBD healthcare or insurance costs?**

*Responses: Yes | No*

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# Appendix: Survey Questions (continued)

**Q17: In order to pay for your IBD healthcare costs, have you postponed vacations or given up major household purchases in the past 12 months?**

*Responses: Yes | No*

**Q18: In order to pay for your IBD healthcare costs, have you cut back on essential items such as food, clothing, or basic household items in the past 12 months?**

*Responses: Yes | No*

**Q19: In order to pay for your IBD healthcare costs, have you increased your credit card debt in the past 12 months?**

*Responses: Yes | No*

**Q20: If you used a copay assistance program, did you run out of copay assistance funds before the end of the year? [Base: used copay program, Q7 = Yes (live n=1,232; sim n=588)]**

*Responses: Yes | No*

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