

# In patients with **CHRONIC DISEASES**, how does the use of **Artificial Intelligence (AI)** by **NURSES** improve **DISEASE MANAGEMENT**?: A systematic review.

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## Introduction

**Chronic diseases** → 43 million deaths annually<sup>1</sup> → **leading cause of morbidity and mortality worldwide**<sup>2</sup>. **Spain** → **2050, 35%** of the population will be over 65, increasing the burden of chronic conditions<sup>3</sup>.



**Nursing Role** → Central to long-term care, patient education, and emotional guidance<sup>4 5</sup>.



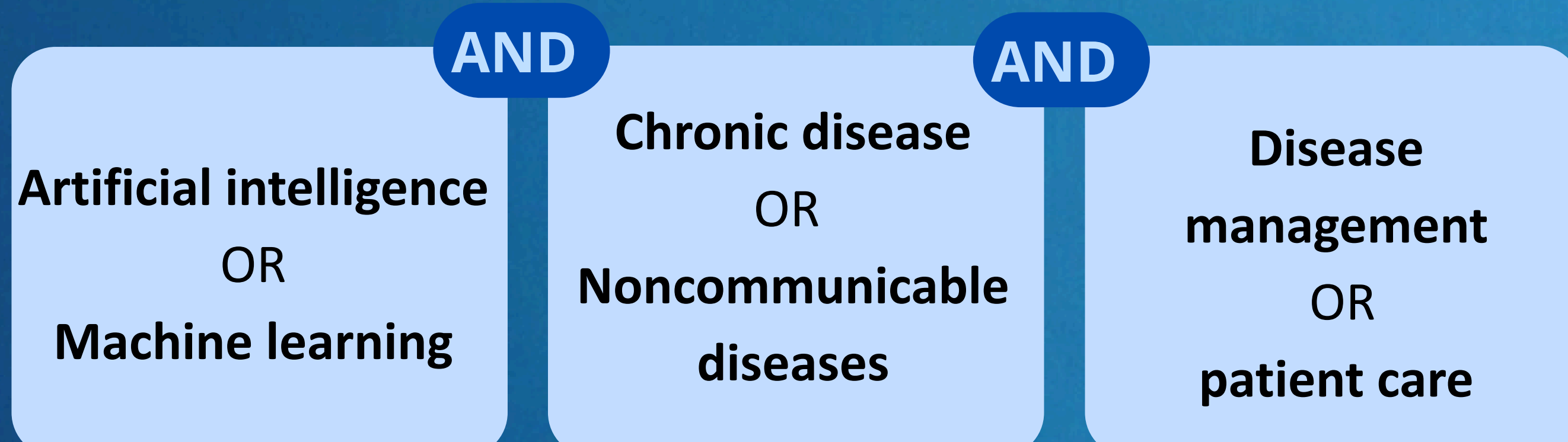
**AI** → a key driver **reshaping healthcare systems** → optimizing clinical decisions and patient safety while reducing administrative burden<sup>6 7</sup>.

## Objective

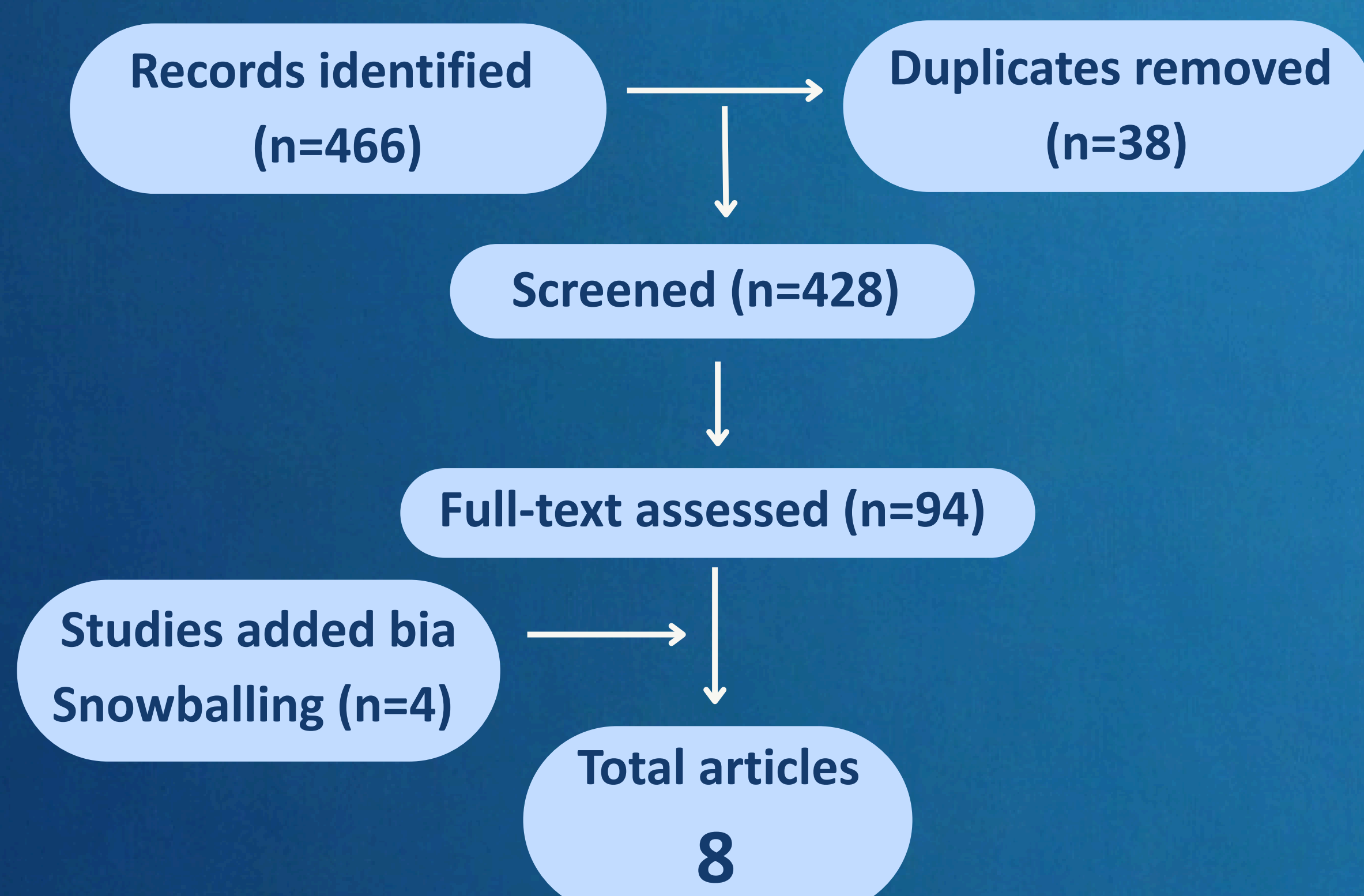
To explore how the use of **artificial intelligence** by nurses improves the **management** of patients with **chronic diseases**.

## Methodology

A literature search was conducted using the **PIO** framework in the **PubMed** and **CINAHL** databases, combining key terms with the Boolean operators **AND** and **OR**.



- **Included:** Recent studies (**≤10 years**) in **English/Spanish** on AI use in nursing interventions/management for chronic diseases.
- **Excluded:** Studies focused only on medical procedures, AI development, self-management without nursing, COVID-19, or grey literature.



## Results

### Nurses' perceptions and roles regarding AI

<b>ROLE</b> Interprets data & delivers personalized care → <b>essential intermediaries</b> <sup>8-11</sup> .	<b>PERCEPTION</b> 75% <b>Inevitable</b> <sup>12</sup> 55% <b>Don't understand</b> <sup>12</sup>	<b>LIMITATION</b> • <b>Limited involvement</b> in design <sup>8</sup> . • Restricted to <b>validation and application</b> <sup>8</sup> .
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### Clinical Decision Support Systems (CDSS)

<b>DSCP-CA</b> in oncology use "fuzzy logic" to classify pain and provide color-coded feedback (Green/Red) based on the WHO analgesic ladder to guide nurses <sup>13</sup> . 	High consensus that <b>final decisions must remind under human touch</b> <sup>12</sup> . 
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### AI for monitoring and follow-up

AI-Supported Remote Follow-up (COPD) <sup>14</sup> .	<ul style="list-style-type: none"> <li>• QoL Score: <b>9.6</b> (vs. 8.6)</li> <li>• Stay: ↓ 7.4 to &lt;6.0 days</li> </ul>
Neural Networks / SHAP (Hypertension) <sup>9</sup> .	<ul style="list-style-type: none"> <li>• Hypertension detection in 2–3 mins with precision (<b>AUC 0.853</b>)</li> <li>• Impact: ↓ 5–10 mmHg (SBP)</li> </ul>
AI-H2H Nutrition Platform (CKD) <sup>15</sup> .	<ul style="list-style-type: none"> <li>• ↓ Nursing <b>Workload</b></li> <li>• Automated vital sign management.</li> </ul>
Virtual Assistant: Nurse AMIE (Oncology) <sup>11</sup> .	<ul style="list-style-type: none"> <li>• Usability: <b>86.14 SUS</b></li> <li>• Triage: <b>Auto-alerts</b> if symptoms ≥7/10</li> </ul>

### Training, Ethical Considerations, and Implementation Challenges

<b>TRAINING</b> AI literacy, data governance & digital reasoning in curricula <sup>8 12</sup> .	<b>ETHICS</b> Algorithmic bias mitigation & human-in-the-loop accountability <sup>10 12</sup> .	<b>BARRIERS</b> High costs, workflow disruption & connectivity gaps <sup>8 10 14</sup> .
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**Gap** → 80.9 % familiarity with wearables vs. 30% integration<sup>10</sup>.

## Conclusion

**AI improves chronic care outcomes.**

- **Practice** → AI as support → validated, regulated implementation + adequate infrastructure.
- **Teaching** → integrate AI literacy & digital skills in curricula + educator training.
- **Research** → Shift to longitudinal trials + Nursing-led technological design.

References:

