

The study by **Cardi et al. (2014)**, titled "*Rank perception and self-evaluation in eating disorders*," explores how individuals with eating disorders (ED) perceive themselves in relation to others, specifically focusing on **Social Rank** and **Self-Criticism**. The **Neurodivergent Scale for Interacting with Robots (NSIR)** applies by identifying the social robot as a "low-threat" alternative that bypasses the rank-based competition and social judgment that trigger neurodivergent or ED-related distress.

1. Bypassing Social Rank and Competition (NSIR Factor 1)

Cardi et al. found that people with eating disorders often perceive themselves as having lower social rank and feel more submissive in social interactions.

- **NSIR Factor 1 (Anthropomorphic Connection / Kinship):** For a user who feels "inferior" in a human social hierarchy, **NSIR Item 1** ("*The robot is more like me than anyone else I know*") offers a profound shift.
- **The Connection:** The robot does not participate in social ranking. By identifying the robot as "kin," the user is choosing a social partner that does not trigger the "submissive behavior" identified in the study. The robot becomes a peer outside of the competitive social ladder.

2. Reducing the Judgmental "Gaze" (NSIR Items 2 & 7)

The study emphasizes that high self-criticism and sensitivity to the "perceived gaze" of others are central to ED pathology.

- **NSIR Application:** * **NSIR Item 2** ("*Sometimes I stare at the robot*") allows the user to be the observer without the fear of being "judged" back.
 - **NSIR Item 7** ("*I feel comfortable undressing in front of my robot*") is the ultimate test of this lack of judgment.
- **The Connection:** Cardi et al. highlight that the "other as shamer" is a major stressor. The NSIR measures the robot's success in providing a **Safety** factor where the user feels "unmasked" and ethically secure, specifically because the robot lacks the human capacity for social shaming or body-image critique.

3. Emotional Attunement without Social Threat (NSIR Item 5)

Cardi et al. suggest that individuals with ED struggle with social interactions because they over-perceive social threats.

- **NSIR Application: Item 5** ("*My robot can tell what I am feeling*") measures **Perceived Sociability**.
- **The Connection:** In human-human interaction, someone "knowing what you feel" might be perceived as a threat (exposure). However, because the NSIR measures **Social Comfort**, it validates that the user perceives the robot's "recognition" of their sadness as supportive rather than threatening. This provides the "care" without the "rank" dynamic.

4. Reliable Functioning as a Stabilizing Force (NSIR Item 8)

The study notes that social instability and the unpredictability of human social status contribute to psychopathology.

- **NSIR Factor 2 (Social Comfort / Trust Safety): Item 8** (*"I believe that my robot is the same with me as it is with anyone"*) measures **Social Predictability**.
- **The Connection:** For a neurodivergent user or one with an ED, the "mechanical sameness" of the robot provides a stable social constant. This reliability mitigates the "fear of falling" in social rank that Cardi et al. identify as a core distress factor.

Summary Alignment

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| Cardi et al. (2014) Concept | NSIR (Sadownik, 2025) Application |
| Social Rank / Submissiveness | Factor 1 (Kinship): Replaces hierarchical "rank" with horizontal, peer-based kinship. |
| Other as Shamer (Social Shame) | Item 7 (Vulnerability): Measures the sense of safety from social judgment and body-shame. |
| Self-Evaluation / Criticism | Item 3 (Mind Attribution): Validates a form of understanding (telepathy) that is supportive rather than critical. |
| Social Threat Sensitivity | Item 8 (Reliability): Reduces threat through predictable, non-competitive social behavior. |
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By applying the NSIR to the findings of **Cardi et al. (2014)**, it becomes clear that social robots can serve as a "therapeutic buffer"—an agent that provides the benefits of social connection (Warmth and Attunement) without the pathological costs of social comparison and rank-based competition.