

Taste & Smell Abnormalities in Advanced Cancer: Subjective & Objective Assessment

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Respite
Rehabilitation
Reassurance
Harold's Cross
& Blackrock

Background

- Taste and smell abnormalities (TSA)
 - common
 - distressing
 - not routinely assessed^{1,2}
- Impact
 - dietary intake
 - nutritional status
 - quality of life^{3,4}
- Mechanisms
 - poorly understood
 - understudied⁵
- Assessment: complex and challenging
 - subjective and objective measures

Aims & Objectives

Aim

Examine TSA subjectively & objectively in an advanced cancer hospice population

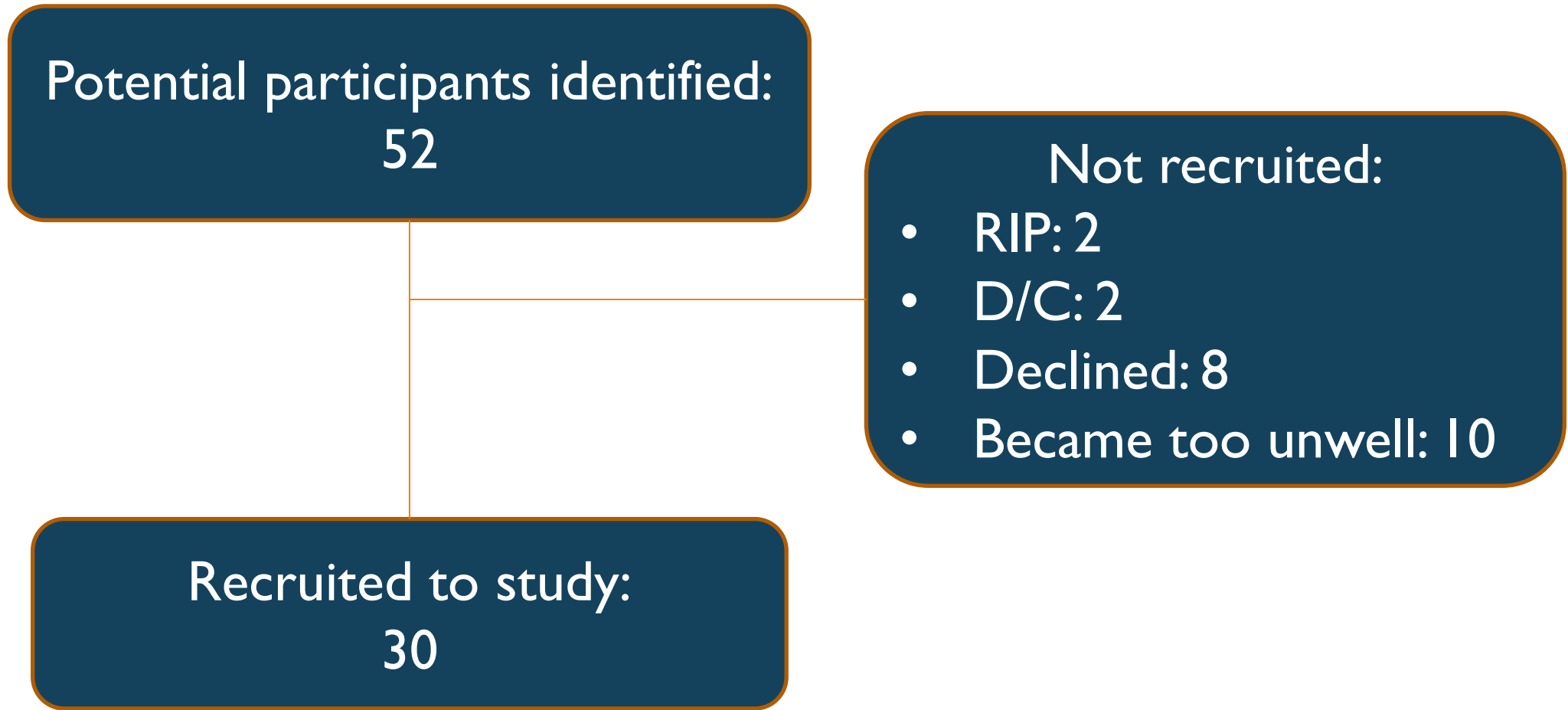
Objectives

- Determine prevalence, severity and characteristics of TSA
- Investigate the relationships between TSA and malnutrition risk

Methods

- Design: Prospective cross-sectional observational study
- Inclusion: Solid tumour; ECOG 0-3; Life expectancy > 7 days
- Data Collection: 7 consecutive weeks at 2 hospices

Recruitment



Methods: Data Collection

Subjective T&S Assessment:

- Taste & Smell Survey – modified (Heald et al. 1998)
 - Taste complaint score 0-9
 - Smell complaint score 0-5

Objective T&S Assessment:

- Burghart Taste Strips® (forced choice)
 - Four basic tastes (Bitter, Salty, Sour & Sweet)
 - Score 0-4
- “Sniffin’ Sticks®” (forced choice)
 - Twelve scented pens (common odours)
 - Score 0-12

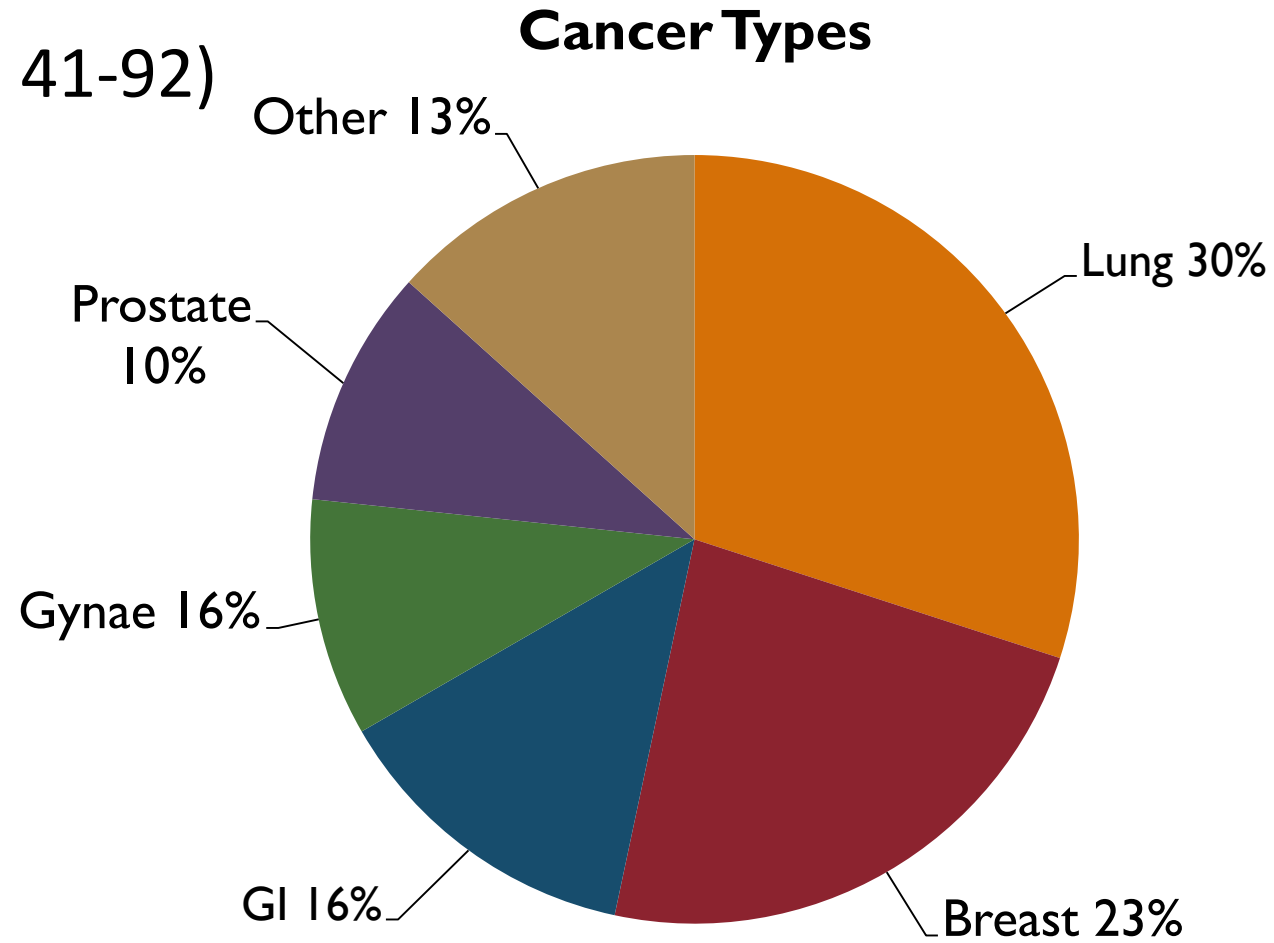
Nutritional Screening:

- abridged Patient Generated-Subjective Global Assessment (abPG-SGA)
 - Score: 0-36 (>5 risk of malnutrition)



Results:

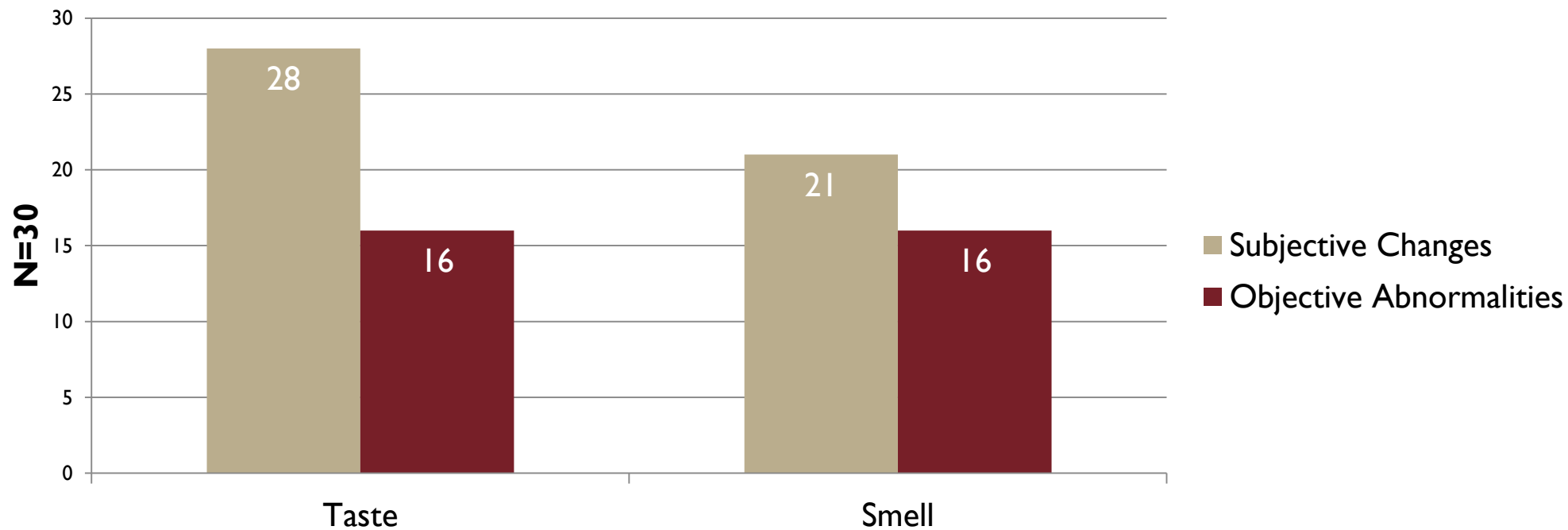
- 70% Female
- Median age: 68 years (range 41-92)
- Median ECOG: 3 (range 2-3)



Results: Prevalence

- 93% (28/30) had a TSA

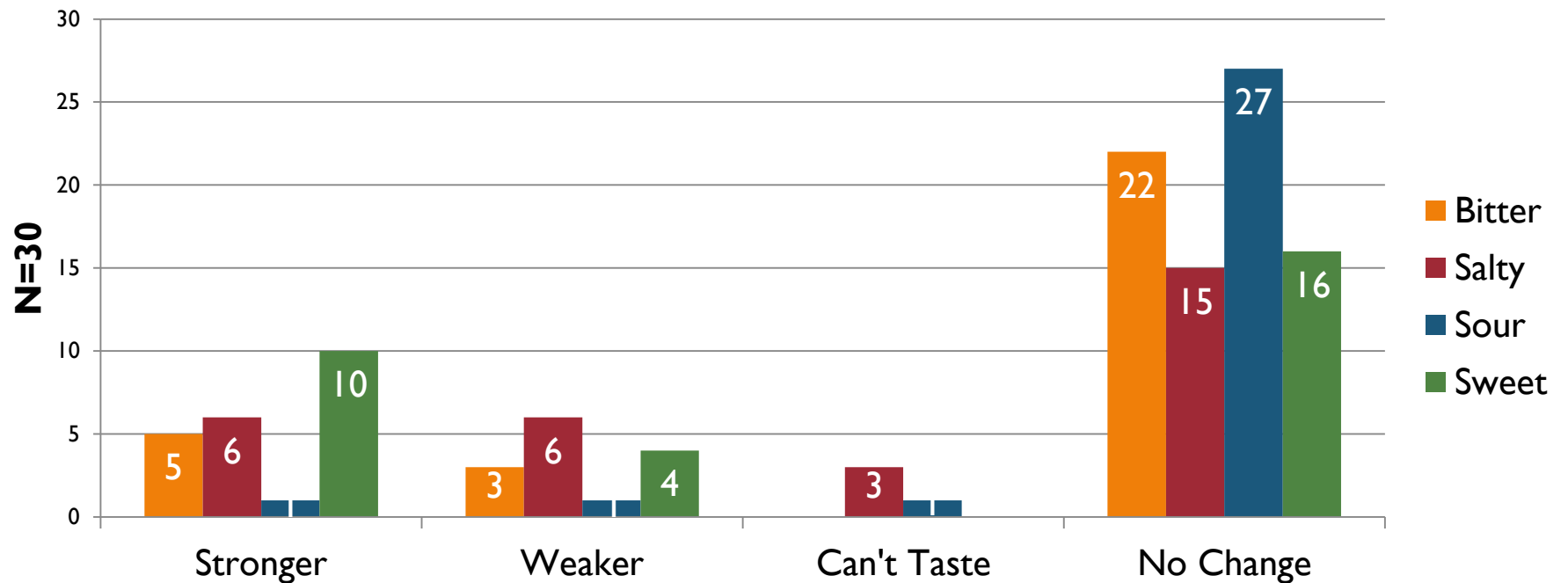
Taste & Smell Prevalence



Results: Taste Change Characteristics

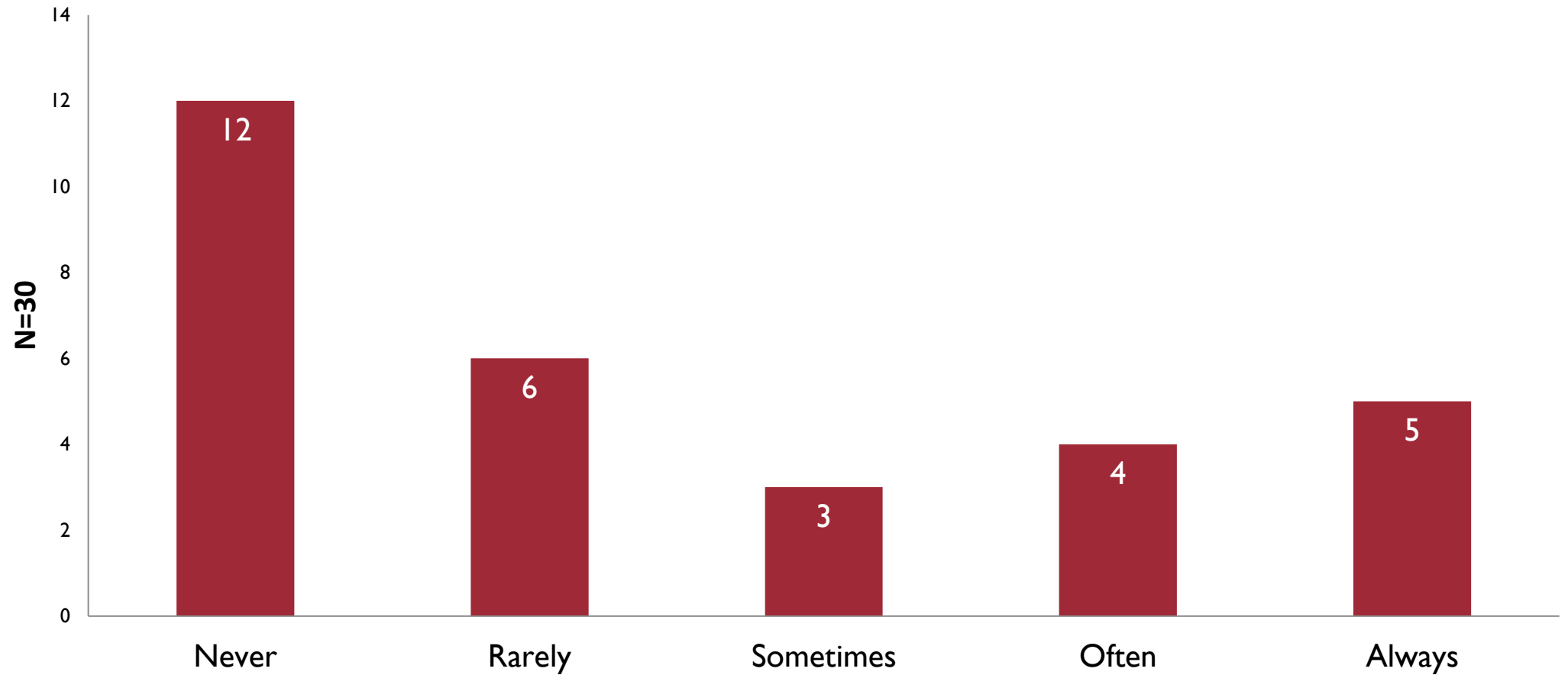
73% reported at least one change in taste perception

Subjective Changes in Taste Perception Since Diagnosis



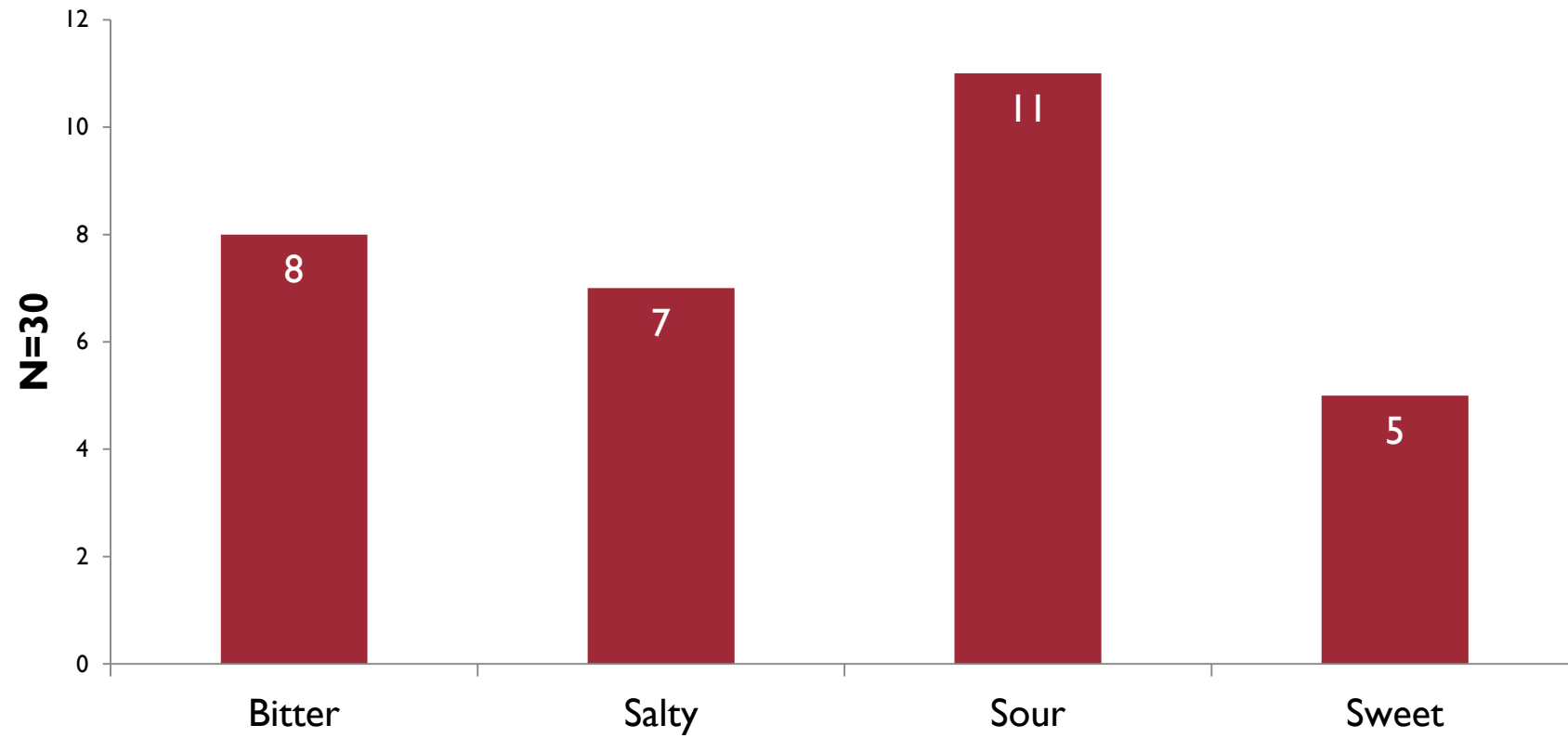
Results: Taste Change Characteristics

Subjective Persistent Bad Taste



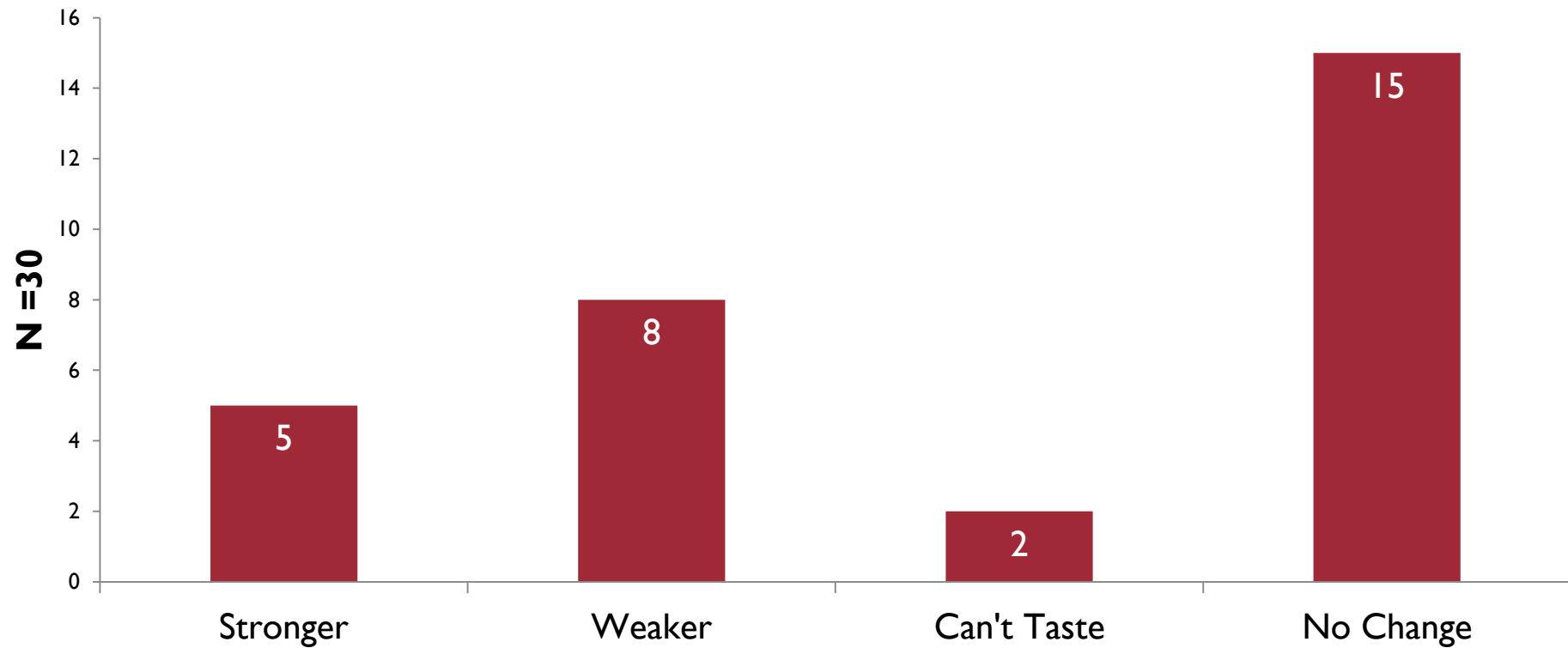
Results: Taste Abnormality Characteristics

Objective Taste Misidentification



Results: Smell Change Characteristics

Subjective Smell Perception



Results: Severity

Subjective Taste Complaints

- Mean score (0-9) = 5(+/-SD2)

Objective Taste Abnormalities

- Median Score = 3(range: 0-4)
 - Bitter & sour misidentified most frequently

Subjective Smell Complaints

- Mean score (0-5) = 2(+/-SD1)

Objective Smell Abnormalities

- Normosmic (10-12): 14
- Hyposmic (6-9): 13
- Anosmic (0-5): 3

Results: Severity

- Taste abnormalities - greater impact

“ Food is less enjoyable now”

“Turned off eating”

“Eating is not the same”

“Feels like a basic function taken away”

Results: Nutritional Status

- Median abPG-SGA score (0-36): 13.5 (range: 4-27)
- 29/30 at risk of malnutrition (Score: >5)

- Linear regression (TSA and abPG-SGA scores)
 - Non significant relationship ($p = 0.585$)
 - Objective abnormalities vs Subjective complaints
 - Univariate: ($p=0.271$ vs $p= 0.927$)
 - Multivariate: ($P = 0.253$ vs $P = 0.693$)

Strengths & Limitations



- Unique Study:
 - Taste & smell
 - Objective & subjective
- Representative sample
- Measures acceptable – 100% completion
- Objective tests validated



- Small sample size
- Data collection:
 - Time from treatment & Dietary intake not recorded
 - single time point
- Taste & Smell Survey needs validation

Recommendations:

Research:

- TSS validation needed
- Consider
 - longitudinal assessment
 - dietary intake
 - time since treatment
- Subjective and objective assessment needed

Clinical:

- Screening/awareness
- Individualised care

Conclusions:

1. TSA common in advanced cancer
 - Changes in taste perception (73%)
 - Persistent bad taste (60%)
 - Failure to identify all 4 basic tastes (53%)
 - Changes in smell perception (50%)
 - Hyposmic/anosmic (53%)
2. Taste abnormalities more severe than smell
3. Subjective & objective assessment needed
4. Tool validation required
5. Malnutrition risk: almost universal (97%)

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References:

1. Heckel M, Stiel S, Ostgathe C. Smell and taste in palliative care: a systematic analysis of literature. *Eur Arch Otorhinolaryngol*. 2015;272(2):279-88
2. Kirkova J, Walsh D, Rybicki L, Davis MP, Aktas A, Tao J, et al. Symptom severity and distress in advanced cancer. *Palliat Med*. 2010;24(3):330-9
3. Hutton JL, Baracos VE, Wismer WV. Chemosensory dysfunction is a primary factor in the evolution of declining nutritional status and quality of life in patients with advanced cancer. *J Pain Symptom Manage*. 2007;33(2):156-65
4. Brisbois TD, de Kock IH, Watanabe SM, Baracos VE, Wismer WV. Characterization of chemosensory alterations in advanced cancer reveals specific chemosensory phenotypes impacting dietary intake and quality of life. *J Pain Symptom Manage*. 2011;41(4):673-83
5. Spotten L, Corish C, Lorton C, Uí Dhuibhir P, O'Donoghue N, O'Connor B, et al. Subjective taste and smell changes in treatment-naive people with solid tumours. *Support Care Cancer*. 2016;24(7):3201-8