

Qualitative Research to Understand the Patient Experience in Non-Advanced Systemic Mastocytosis

Frank Siebenhaar, MD^{1,2}; Cem Akin, MD³; Jennifer Nicoloro SantaBarbara, PhD^{4*}; Jean Paty, PhD⁵; Chad Gwaltney, PhD⁵; Michelle Lim-Watson, PhD, MPH, MBA⁶; Jessica Sachs, MD⁶; Hina Jolin, PharmD⁶; Casey Judge⁶; Mariana C Castells, MD, PhD⁷

¹Institute of Allergology, Charité – Universitätsmedizin Berlin, corporate member of Freie Universität Berlin, Humboldt-Universität zu Berlin, and Berlin Institute of Health, Berlin, Germany; ²Immunology and Allergology IA, Fraunhofer Institute of Translational Medicine and Pharmacology ITMP, Berlin, Germany;

³University of Michigan, Ann Arbor, MI; ⁴Department of Psychiatry, Harvard Medical School, Boston, MA; ⁵IQVIA, New York, NY; ⁶Cogent Biosciences, Inc., Waltham, MA; ⁷Mastocytosis Center, Brigham and Women's Hospital, Harvard Medical School, Boston, MA

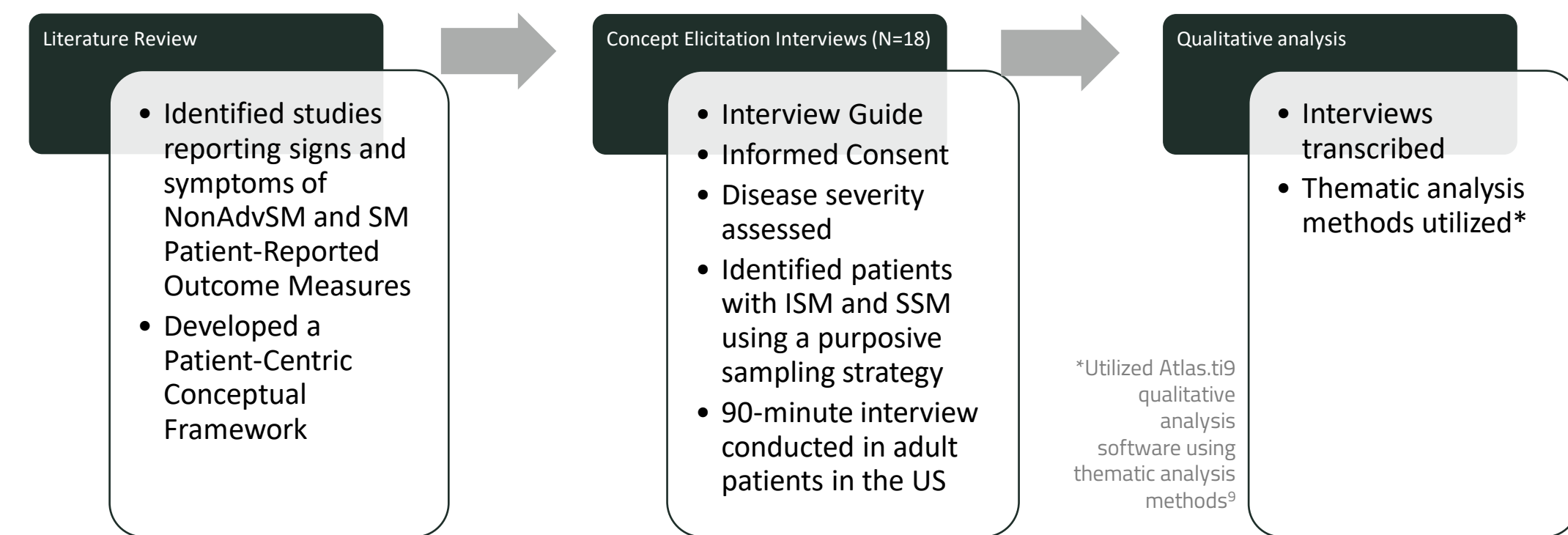
*Presenting author

Introduction

- Mastocytosis is a group of rare mast cell disorders characterized by clonal proliferation of abnormal mast cells and their accumulation in various organs, including the bone marrow, gastrointestinal tract, skin, liver and spleen.¹
- 2016 World Health Organization (WHO) classification identifies two distinct categories - cutaneous mastocytosis and systemic mastocytosis (SM).
 - SM is broadly divided into Advanced SM and Non-Advanced SM (NonAdvSM) based on diagnostic criteria.^{1,2}
- NonAdvSM includes two subvariants, indolent systemic mastocytosis (ISM) and smoldering systemic mastocytosis (SSM).³
- Patients with NonAdvSM experience a variety of debilitating, unpredictable, and potentially life-threatening symptoms, including anaphylaxis in over 40% of patients.^{1,4-6}
- NonAdvSM may impact patients' mental health, social interactions, physical functioning, and overall life satisfaction.^{1,7,8}
- The objective of this study was to further characterize and understand symptom burden and impact to health-related quality of life (HRQoL) in patients with NonAdvSM.

Methods

Fig. 1: Study Methodology Identifies Symptoms and Health-Related Quality of Life (HRQoL) Impacts in Patients



- Patients were diagnosed with NonAdvSM prior to signing informed consent.
- Four groups of patients with NonAdvSM underwent semi-structured elicitation interviews to determine the concepts of interest in this disease type between Aug and Sep 2021 (Fig. 1).
- Identification of new concepts in each interview group contributed to conceptual saturation.

Results

Patient demographics and characteristics (Table 1)

- 18 patients interviewed; median age: 46 years (range: 18-74)
- 18 (100%) were female and white
- 15 (83%) were ISM subtype
- 5 (28%) patients self-identified as disabled

Table 1: Demographics and Characteristics

Baseline Characteristics	Total (N=18)	Baseline Characteristics	Total (N=18)
Female, n (%)	18 (100)	Level of Education, n (%)	
NonAdvSM Subtype, n (%)		High School	2 (11)
ISM	15 (83)	Some College	6 (33)
SSM	3 (17)	Undergraduate Degree	6 (33)
Disease Severity, ISM, n (%)		Advanced	4 (22)
Mild	2 (11)	Work Status, % (range)	
Moderate	11 (61)	On disability	6 (33)
Severe	2 (11)	Unemployed	1 (0.5)
Disease Severity, SSM, n (%)		Part-Time	2 (11)
Mild	0 (0)	Full-time	4 (22)
Moderate	1 (1)	Retired	5 (28)
Severe	2 (11)		

Results

Patient-reported Symptoms in Patients with NonAdvSM

- 32 relevant symptoms were identified across multiple domains (Fig. 2).
- Most Common Patient-Reported Symptoms**
 - The most frequently acknowledged symptoms were skin-related (Fig. 2, 3).
 - 100% of patients reported redness, flushing, and difficulty concentrating.
- Anaphylaxis versus Mast Cell Reactions (Fig. 4)**
 - Patients experienced NonAdvSM symptoms that were either a mast cell reaction or an anaphylaxis reaction; they were able to differentiate between the two events.
 - Anaphylaxis was reported by 10 (56%) patients who used various treatments (e.g., EpiPen, antihistamines) to alleviate symptoms.
- Substantial Life Changes (Fig. 5)**
 - Patients reported considerable impacts on mental well-being, social interactions, appearance, and employment.
- HRQoL Impacts (Fig. 6)**
 - Most patients reported an impact to 'physical functioning' (56%), 'overall life satisfaction' (61%) and mental well-being (67%) contributing to 'barriers to daily life'.
- Conceptual Saturation Achieved for NonAdvSM Symptoms and HRQoL Impacts (Tables 2, 3)**
 - Conceptual saturation is achieved when new data collection and/or additional analyses adds no new concept-relevant information.
 - Participant interviews demonstrated symptoms and HRQoL impacts conceptual saturation.
 - Conceptual saturation was achieved by Group 3 for symptoms and by Group 4 for HRQoL impacts.
- Heterogeneity in Symptoms and HRQoL (Fig. 7)**
 - Data gathered from literature reviews and participant interviews highlight the variability of symptoms and HRQoL impacts and limitations in current treatment options.

Fig. 2: Patient Reported Symptoms Identified Across Multiple Domains

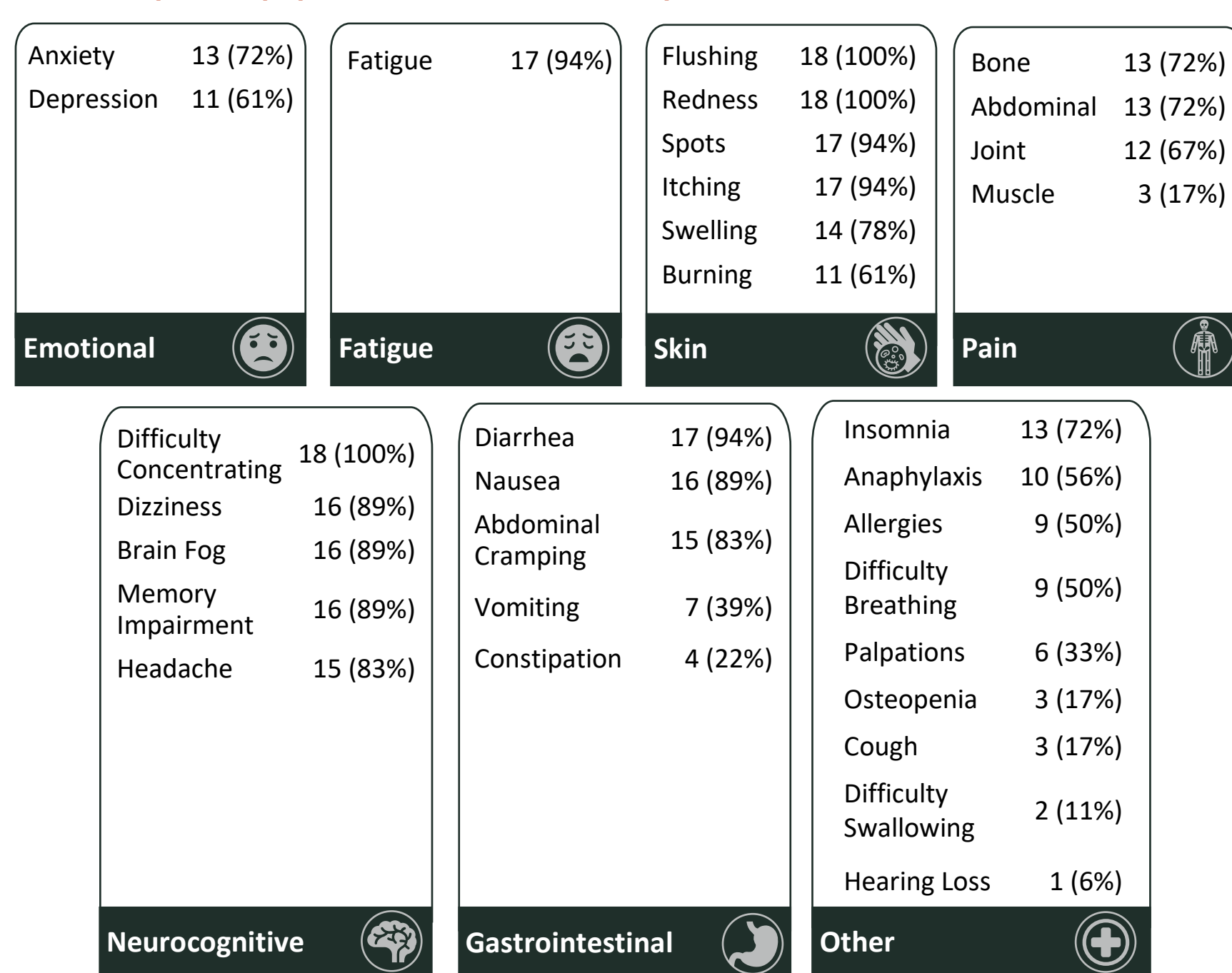


Fig. 3: Testimonials Related to Common Patient Reported Symptoms



Fig. 4: Testimonials Related to Anaphylaxis and Mast Cell Reactions

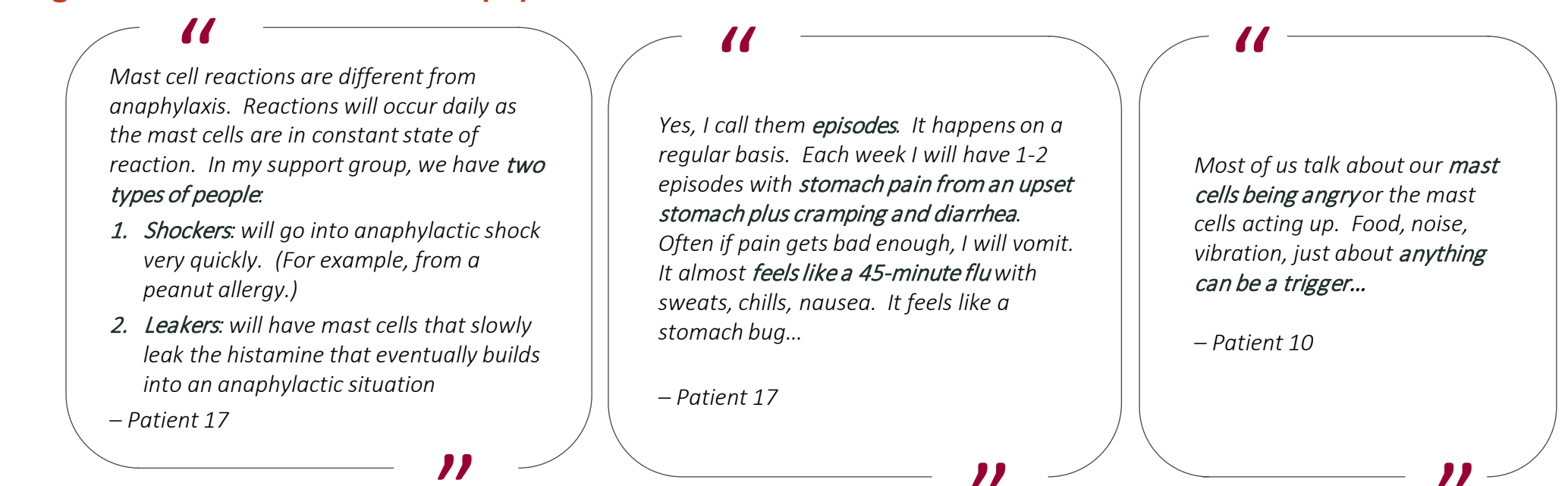


Fig. 5: Substantial Life Changes Result from NonAdvSM

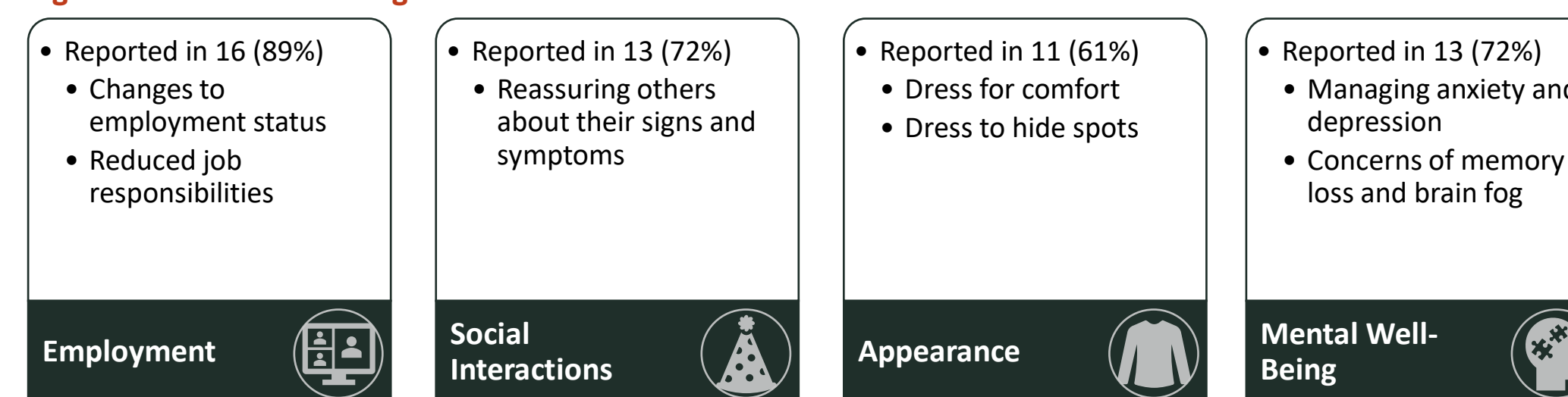


Fig. 6: Testimonials Related to Physical Functioning, Overall Life Satisfaction, and Mental Well-Being

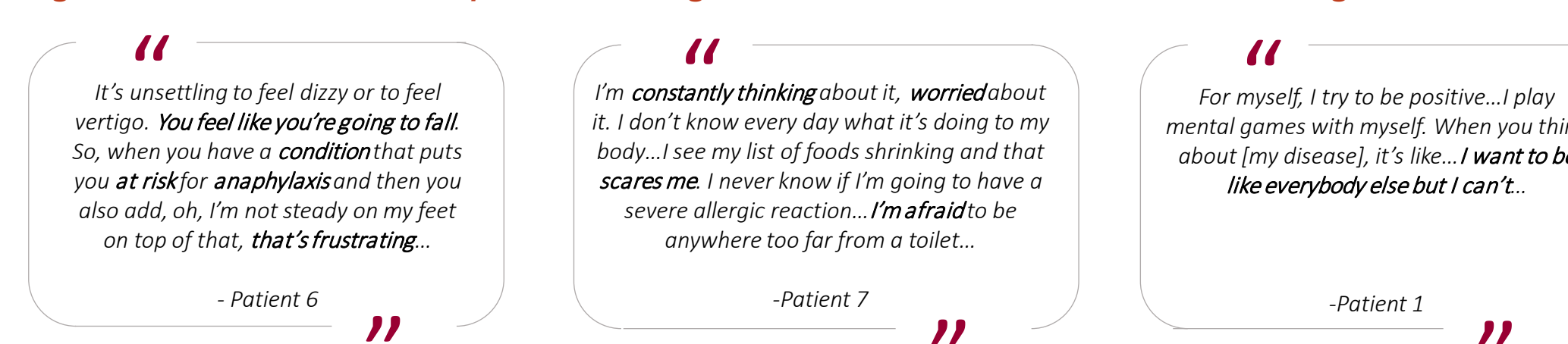


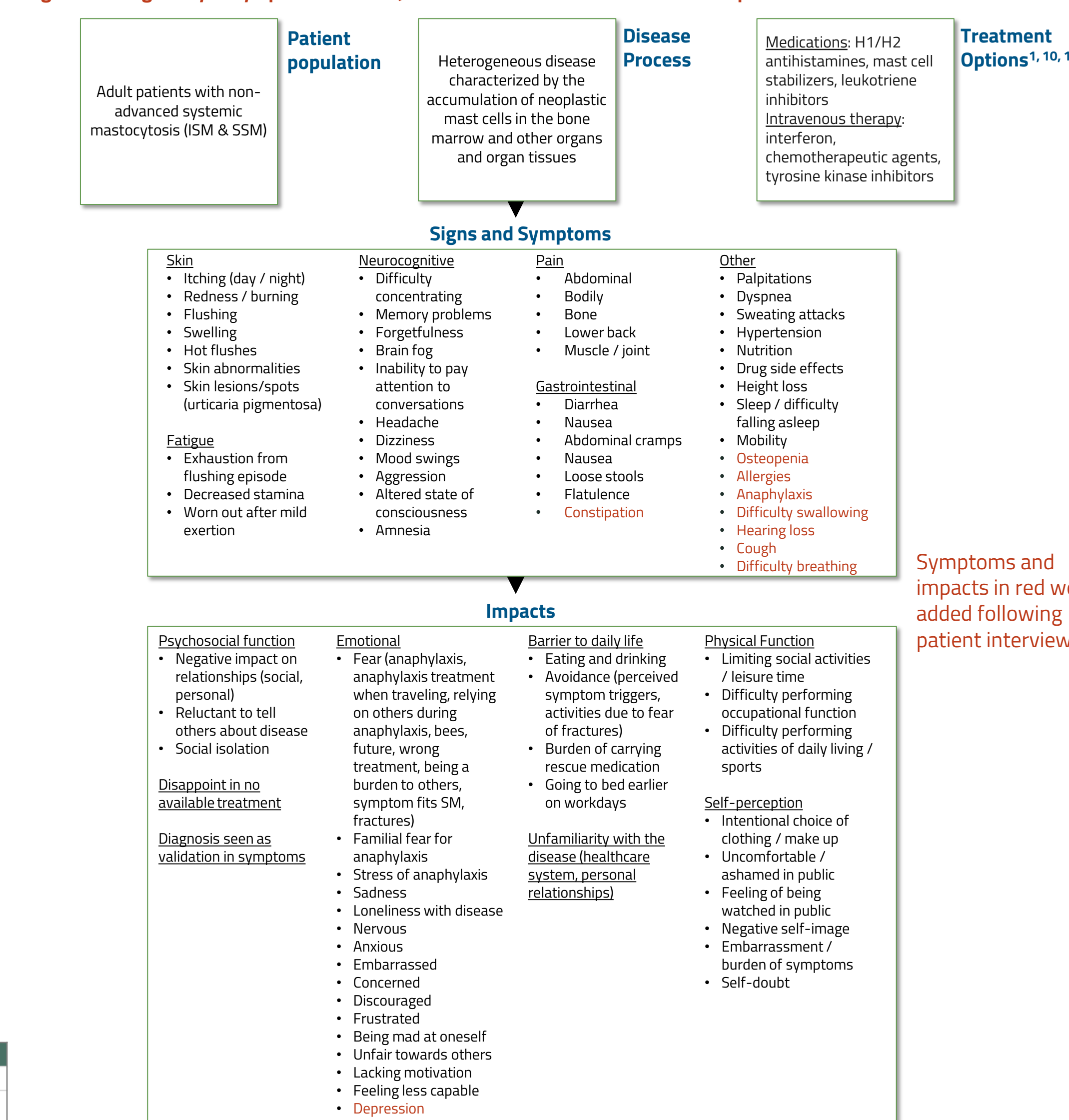
Table 2: Saturation by Participant Interview Group: Symptoms

	Group 1 (N=5)	Group 2 (N=5)	Group 3 (N=5)	Group 4 (N=3)
Number of New Concepts Identified, (n)	30	2	0	0
Mention of New Concepts, (% of total mentioned concepts)	94	6	0	0

Table 3: Saturation by Participant Interview Group: HRQoL Impacts

	Group 1 (N=5)	Group 2 (N=5)	Group 3 (N=5)	Group 4 (N=3)
Number of New Concepts Identified, (n)	10	3	1	0
Mention of New Concept (% of total mentioned concepts)	67	20	7	0

Fig. 7: Heterogeneity in Symptoms and HRQoL Observed in a Patient-Centric Conceptual Model for NonAdvSM



Summary

- Patients with NonAdvSM, including ISM and SSM, experience substantial and debilitating symptom burden and HRQoL impact.
- Skin and neurocognitive impairments were the most frequently reported symptoms by patients.
 - Symptoms had the potential to be "severe, unpredictable, and negatively impact quality of life."
- Patient perspectives aid in the development of a more comprehensive clinical approach for treatment and management of NonAdvSM.
- Patients in the study were predominantly white, female, college-educated, and based in the United States. As a result, there may be limitations to conclusions that are drawn about symptoms and HRQoL impacts experienced by all NonAdvSM patients globally.
- Including diverse populations in qualitative research in rare diseases is challenging. Steps toward better understanding and characterizing the symptom heterogeneity and HRQoL impact in NonAdvSM is under further evaluation in the Summit Clinical Trial (NCT05186753).

