Mixed Methods: Using survey data and qualitative interviews to support content validity for Spinocerebellar Ataxia (SCA) patients

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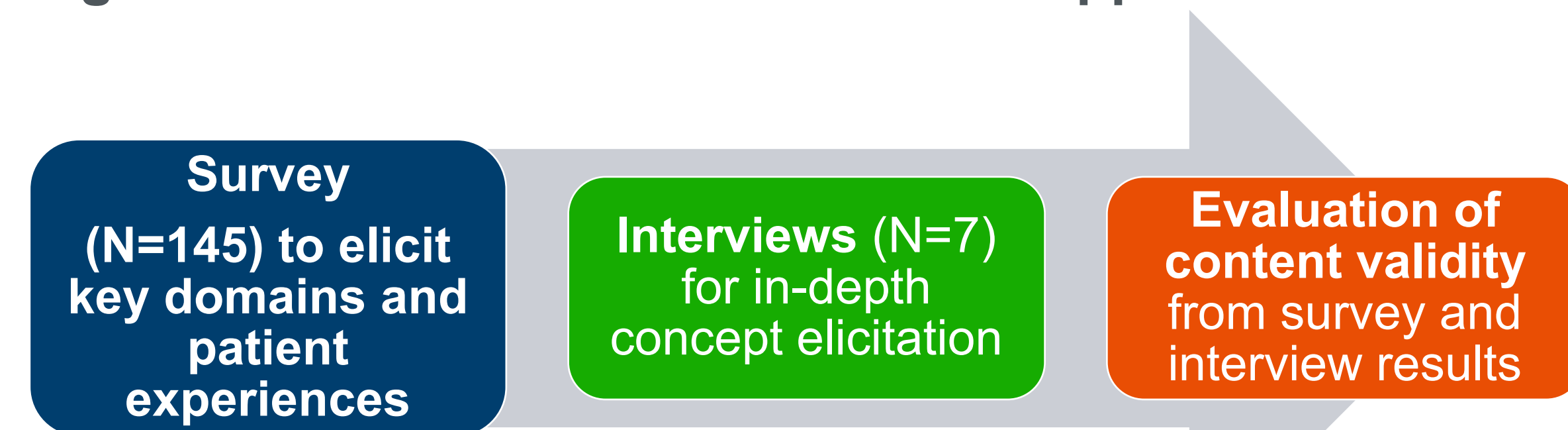[2] Biohaven Pharmaceuticals, Inc., New Haven, CT, USA

Background

> Qualitative research enables an in-depth understanding of the patient experience,[1] however, attaining a sufficient sample size to determine the content validity of a Clinical Outcomes Assessment (COA) instrument can be challenging, especially in rare diseases.

> The FDA Patient Focused Drug Development guidance mentions patient surveys as an appropriate method to inform content validity and add greater depth to data in rare diseases as part of a mixed methods analysis approach.[2]

> We utilized survey data along with concept elicitation interview data from semi-structured interviews to achieve concept confirmation to support content validity for three COAs in the SCA population.

Methods

> A cross-sectional survey was completed by 145 patients with Cerebellar Ataxia (CA). Respondents described the symptoms and quality of life (QoL) impacts associated with their disease.

> Domains and concepts elicited from the surveys were utilized to inform questions in a semi-structured concept elicitation interview guide. Interviews were conducted with seven (n=7) SCA patients to explore patients' experiences of SCA including symptoms and impacts to daily living. Content analysis was used to assess the interviews via Atlas.Ti. Unique concepts reported by patients were identified and organized into a conceptual model.

> Concept confirmation was evaluated by mapping concepts collected from both data sources (interviews and survey) against the three COAs of interest (f-SARA, PIFAS, FARS-ADL).

Figure 1. Overview of mixed methods approach

Survey (N=145) to elicit key domains and patient experiences → Interviews (N=7) for in-depth concept elicitation → Evaluation of content validity from survey and interview results

REFERENCES

1. Patrick, D. L., Burke, L. B., Gwaltney, C. J., Leidy, N. K., Martin, M. L., Molsen, E., & Ring, L. (2011). Content validity—establishing and reporting the evidence in newly developed patient-reported outcomes (PRO) instruments for medical product evaluation: ISPOR PRO good research practices task force report: part 1—eliciting concepts for a new PRO instrument. *Value in Health*, 14(8), 967-977.

2. Patient-focused drug development guidance series for enhancing the incorporation of the Patient's voice in medical product development and regulatory decision making. (Food and Drug Administration)https://www.fda.gov/drugs/development-approval-process-drugs/fda-patient-focused-drug-development-guidance-series-enhancing-incorporation-patients-voice-medicalDate accessed: April 3, 2024
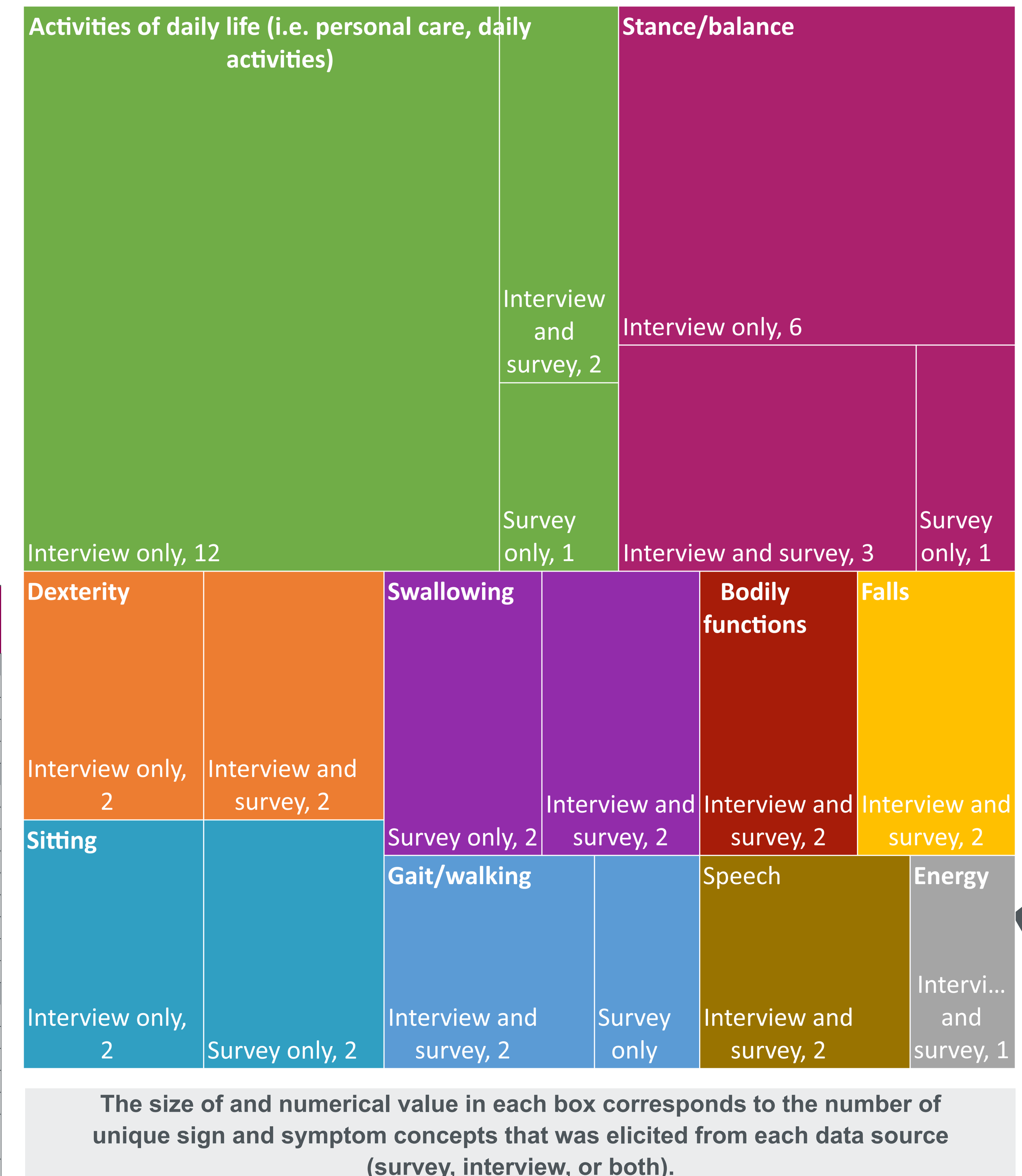
Results

> A total of 40 signs/symptoms and 44 impacts were reported from the interviews; 50 signs/symptoms and 30 impacts from the survey (total of 65 unique signs/symptoms across 17 domains and 60 impacts across 7 domains from both sources). All concepts in the COAs (f-SARA, FARS-ADL, and PIFAS) were endorsed by the surveys and interviews (Table 1).

> A depth of information was captured for individual concepts in interviews, while survey data elucidated a broader range of domains. For example, although concepts related to stance/balance were originally elicited in the survey, six additional stance/balance concepts were reported from the interviews alone. Figure 2 provides an overview of the contribution of unique concepts elicited from the survey and/or interviews that are measured by the COAs.

> The combination of survey and interview data sources provided cumulative evidence of domain relevance and a larger breadth of aspects related to patient experience.

Table 1. COA concept confirmation via patient survey and interviews

Item No.	Domain	Item concept	Confirmation from both patient survey and interview
Instrument 1: Modified Functional Scale for the Assessment and Rating of Ataxia (f-SARA)			
1		Gait/walking	✓
2	Gross motor function	Stance	✓
3		Sitting	✓
4	Speech	Speech	✓
Instrument 2: Friedreich's Ataxia Rating Scale, Activities of Daily Living Domain (FARS-ADL)			
1	Speech	Speech	✓
2	Swallowing	Swallowing	✓
3		Cutting Food and Handling Utensils	✓
4	Activities of daily living	Dressing	✓
5		Personal Hygiene	✓
6		Falling	✓
7	Gross motor function	Walking	✓
8		Quality of sitting position	✓
9	Bodily function	Bladder function	✓
Instrument 3: Patient Impression of Function and Activities Scale (PIFAS)			
1	Energy	Tired	✓
2		Walking	✓
3	Gross motor function	Climbing stairs	✓
4		Standing	✓
5	Energy	Lack of energy	✓
6	Impact to activities of daily living	Unable to do usual activities	✓
7	Speech	Difficulty speaking	✓
8	Impact to emotional function	Frustrated when people don't understand what I'm saying	✓
9	Energy	Fatigue	✓
10	Gross motor function	Trouble turning around	✓
11		Fall down	✓
12	Swallowing	Swallowing	✓
13	Impact to activities of daily living	Need help doing usual activities	✓
14	Swallowing	Cough when eating	✓
15	Gross motor function	Not able to walk more than a few feet without stopping	✓
16		Trouble keeping balance	✓
17	Impact to emotional function	Frustrated being too tired to do the things I want	✓

Figure 2. Tree Diagram: Contribution of unique concepts elicited from SCA patient survey and interviews

Activities of daily life (i.e. personal care, daily activities)
Interview only, 12
Interview and survey, 2
Survey only, 1

Stance/balance
Interview only, 6
Interview and survey, 3
Survey only, 1

Dexterity
Interview only, 2
Interview and survey, 2

Sitting
Interview only, 2
Survey only, 2

Swallowing
Survey only, 2
Interview and survey, 2

Gait/walking
Interview and survey, 2
Survey only

Bodily functions
Interview and survey, 2

Speech
Interview and survey, 2

Falls
Interview and survey, 2

Energy
Interview and survey, 1

The size of and numerical value in each box corresponds to the number of unique sign and symptom concepts that was elicited from each data source (survey, interview, or both).

Conclusions

> Survey data was combined with qualitative interviews as a mixed method approach to support the content validation of three SCA COA instruments used in a clinical trial.

> This approach may be preferable to elicit a more comprehensive perspective of the patient experience, especially when recruiting large samples for qualitative interviews may be challenging.

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