Vesicular Monoamine Transporter 2 (VMAT2) Inhibitors Chart Extraction/Clinician Survey

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Study Methods

Objective: **To describe the impact of TD and treatment outcomes (social and physical/functional) in participants who were treated with a VMAT2 inhibitor for TD**

- Clinicians who prescribed valbenazine within the past 24 months were invited to:
  - Complete a web-based **survey** on data of interest for VMAT2 inhibitor-treated patients
  - Provide 1 to 10 **charts** of participants with TD who were treated with a VMAT2 inhibitor from 7/24/2019 to 8/30/2019 for data extraction
- Participant inclusion criteria:
  - ≥18 years of age
  - Treated with a VMAT2 inhibitor (valbenazine, deutetrabenazine, or off-label tetrabenazine for TD) for ≥2 months

Survey Data

- TD symptom presentation (body location and severity)
- Impact of TD on social and physical capabilities prior to treatment
- Improvements after VMAT2 inhibitor treatment

Chart Data

- Demographic characteristics
- Antipsychotic use
- Psychiatric conditions
- Medications for TD

TD, tardive dyskinesia; VMAT2, vesicular monoamine transporter 2.

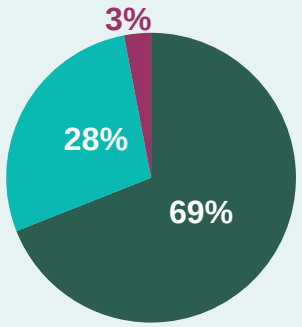
Meyer JM, et al. *Ment Health Clin*. 2023;13(5):225-232.

Demographic and Clinical Characteristics

Characteristic	Participants (N=601)
Mean age, years[1]	**50.6**
Took APs in the past 12 months[1,a]	**90%**
TD attributed to metoclopramide[2,b]	**25%**
Primary psychiatric condition[1,c]	
Schizophrenia	32%
Bipolar disorder	29%
Schizoaffective disorder	23%
Major depressive disorder	11%
Anxiety disorders[d]	33%
Comorbid substance abuse disorder[1,d]	18%

77%
of participants were currently taking an AP at the time of data collection[1,a]

VMAT2 Inhibitor Use[1]

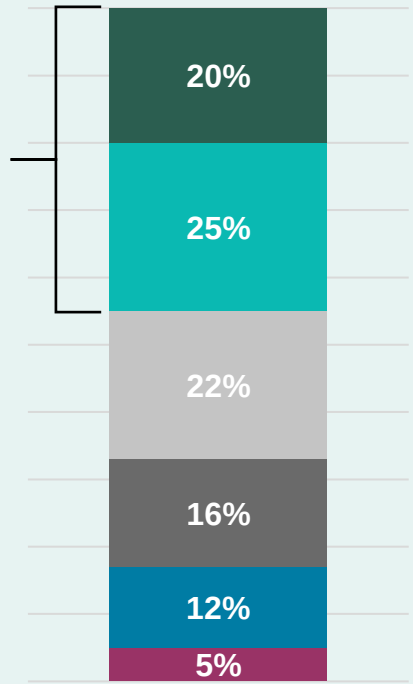


>2/3
of participants were taking valbenazine

Valbenazine Deutetrabenazine Tetrabenazine

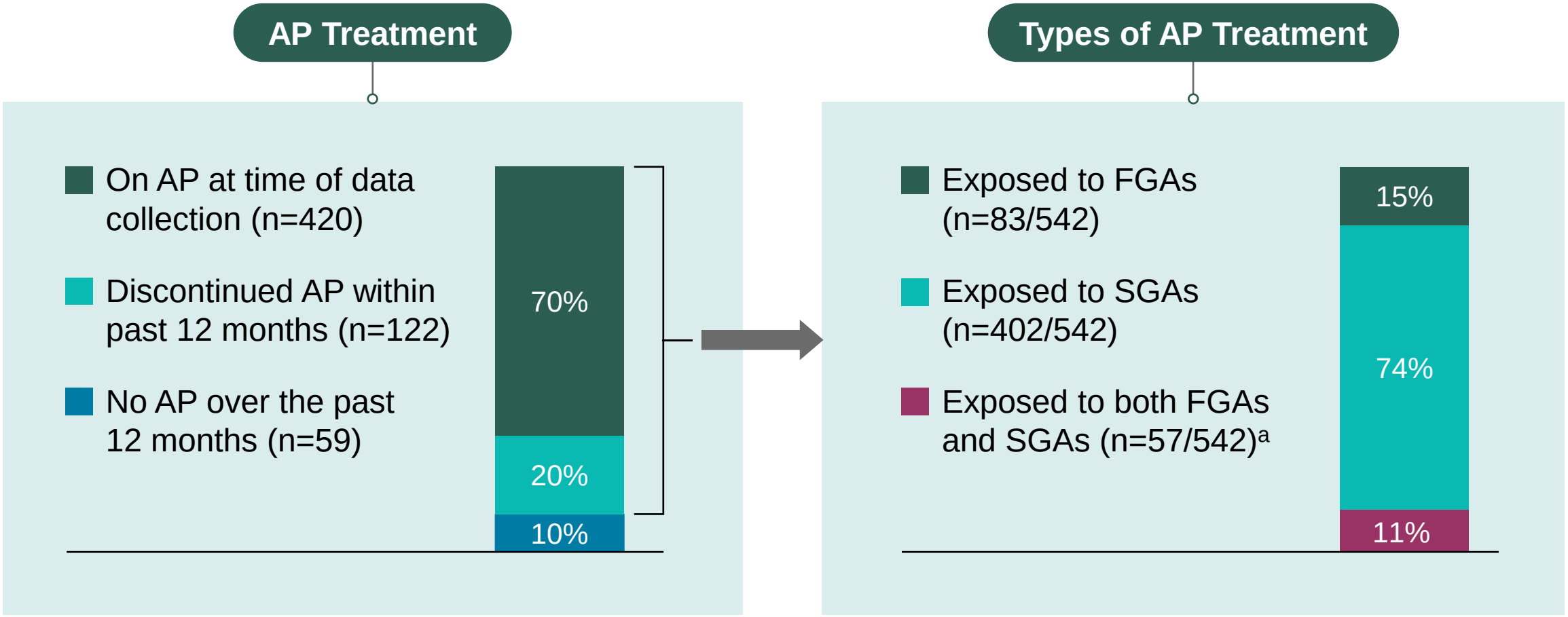
Age, years[3]

45%
were ≥55 years of age



[a]Of the 601 participants, 542 (90%) took an AP in the past 12 months; of these, 420 (77%) were still taking an AP at the time of data collection.[1] [b]Based on 59 participants who received no APs in the past month.[2]
[c]Based on 542 participants who took an AP in the past 12 months. Categories were not mutually exclusive for comorbidities.[2] [d]Based on 601 total participants.[1]
AP, antipsychotic; TD, tardive dyskinesia; VMAT2, vesicular monoamine transporter 2.
1. Meyer JM, et al. *Ment Health Clin*. 2023;13(5):225-232. 2. Lundt L, et al. Presented at: American Academy of Neurology Virtual Meeting; May 2020. 3. Data on File. Neurocrine Biosciences, Inc.

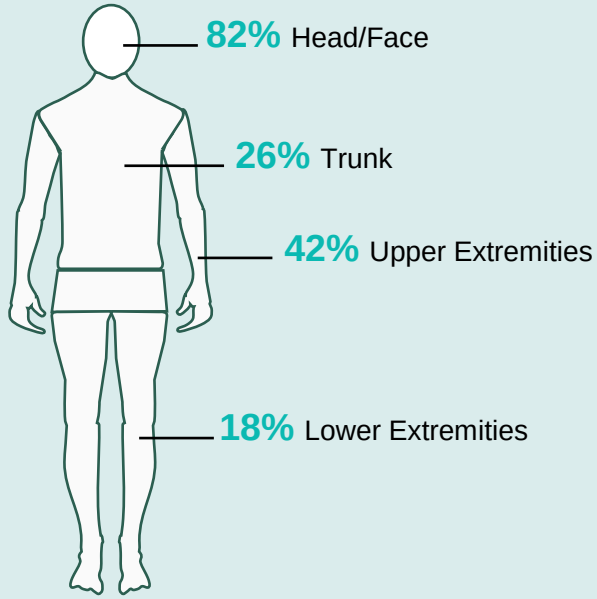
Participant Characteristics: AP Treatment



[a]The survey did not capture the dosing, frequency, or specific AP drug(s) prescribed.
AP, antipsychotic; FGA, first-generation antipsychotic; SGA, second-generation antipsychotic.
Meyer JM, et al. *Ment Health Clin*. 2023;13(5):225-232.

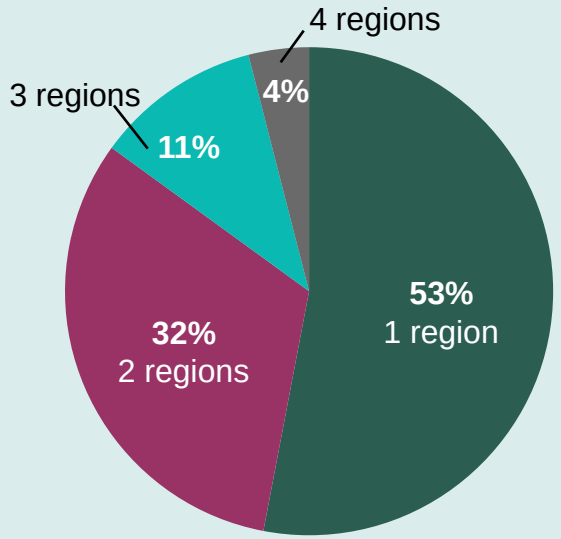
Clinician-described Location and Duration of TD Symptoms

TD Symptoms by Body Region
(N=601)



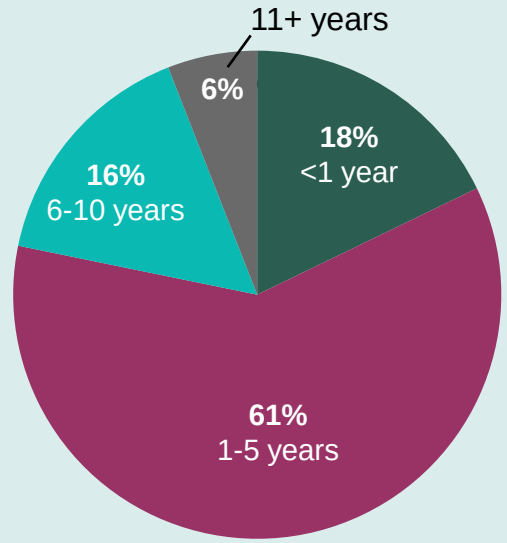
82% had TD symptoms in the **head/face**

Number of Body Regions
(N=601)



47% had TD symptoms in **≥2 regions**

Duration of TD Symptoms
(N=601)

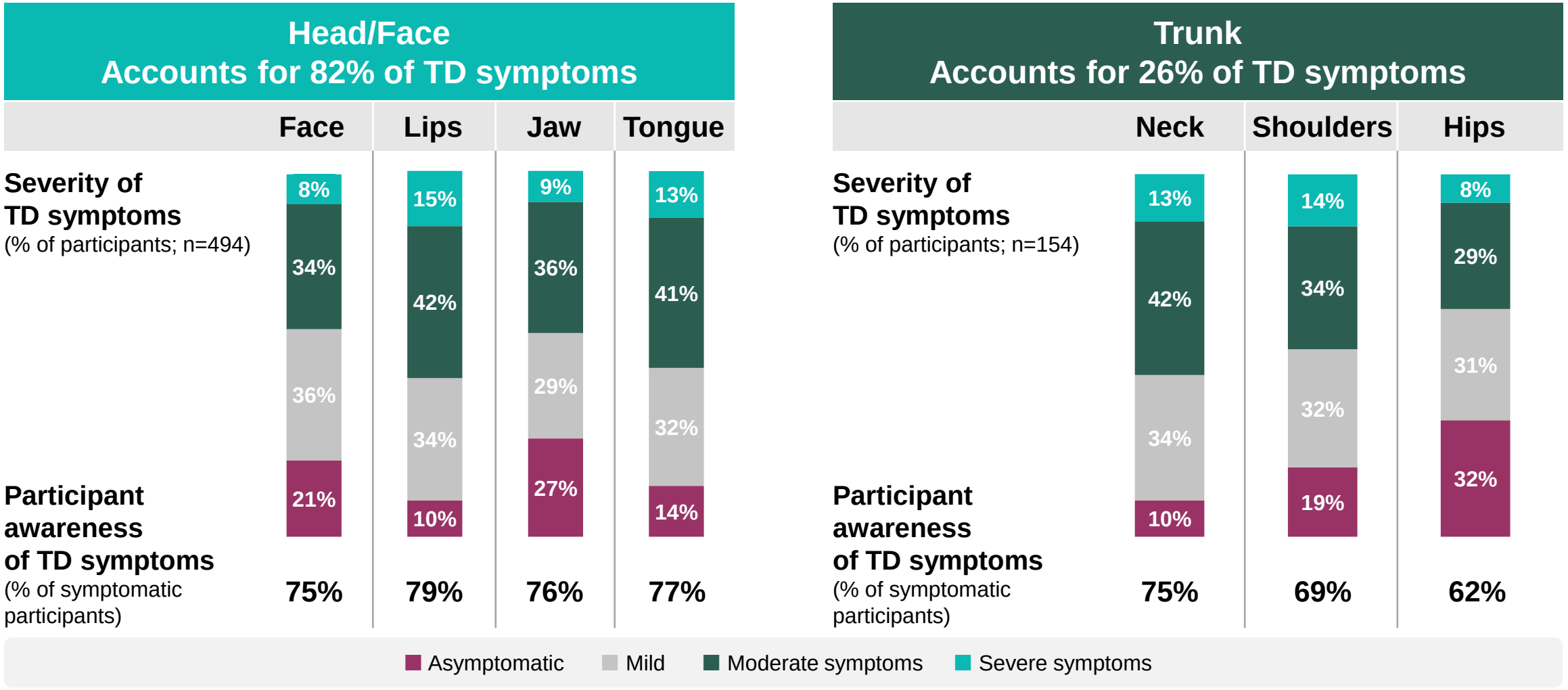


61% had TD symptoms for **1 to 5 years**

TD, tardive dyskinesia.

Meyer JM, et al. *Ment Health Clin*. 2023;13(5):225-232.

TD Symptom Severity and Awareness in Participants With TD Symptoms in the Head/Face or Trunk



TD, tardive dyskinesia.

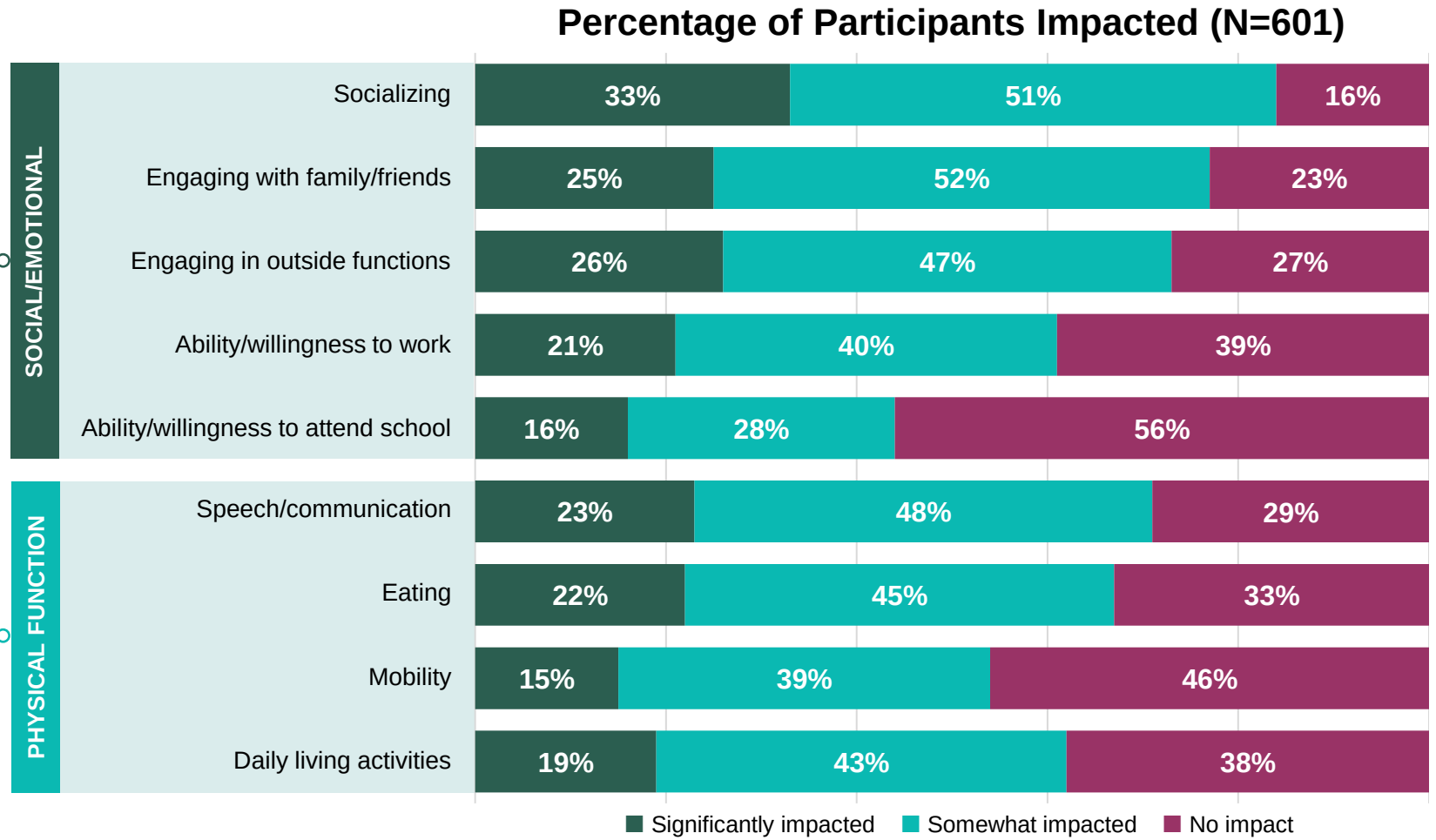
Data on File. Neurocrine Biosciences, Inc.

Impact of TD on Participants Prior to Treatment With a VMAT2 Inhibitor

Per clinician's assessment

In this group of participants, **>70% had difficulties** in socializing, engaging with family/friends, and engaging in outside functions

>50% of participants had difficulties in **physical function** areas



TD, tardive dyskinesia.

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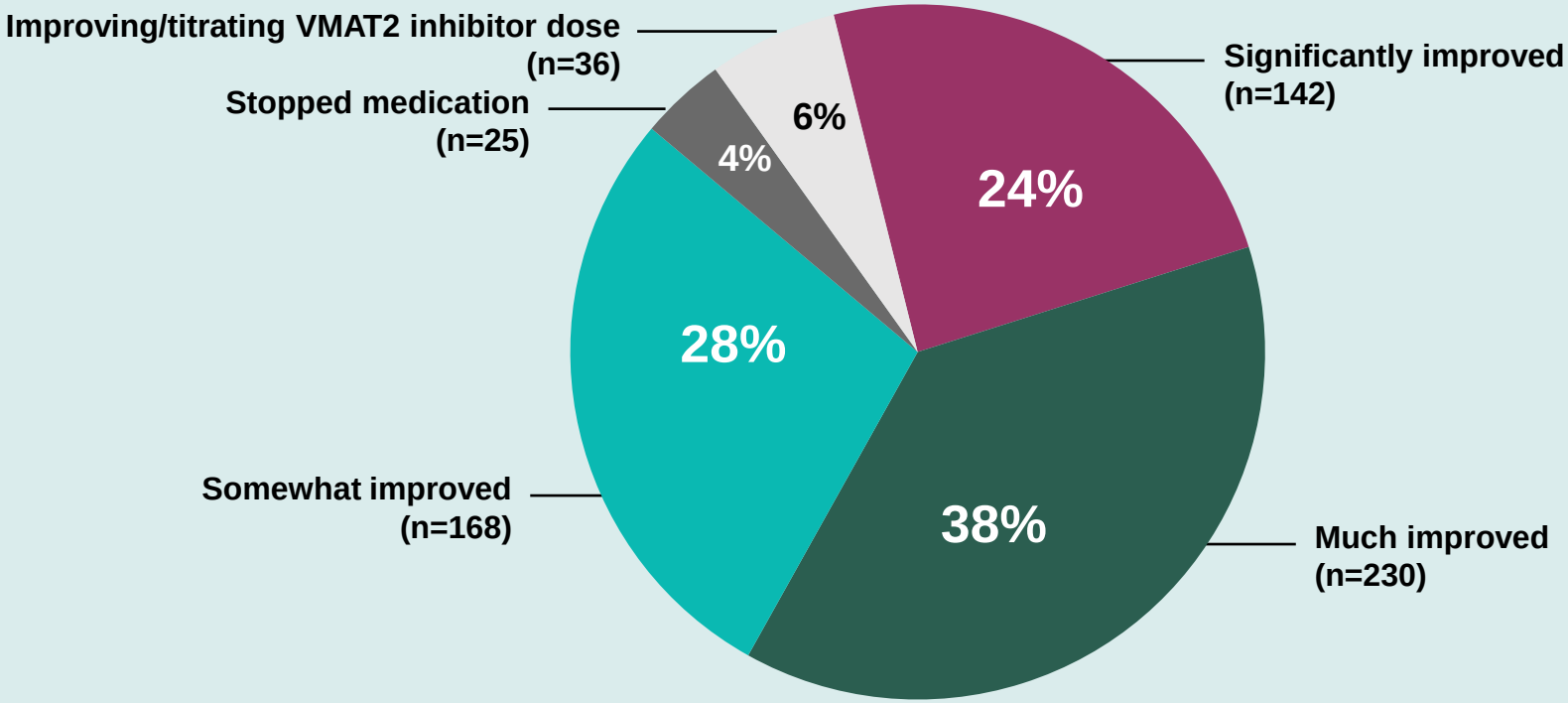
TD Improvement After Starting Treatment With a VMAT2 Inhibitor

Per clinician's assessment

TD improvement with a VMAT2 inhibitor occurred in 90% (n=540) of the study population (N=601)



TD, tardive dyskinesia; VMAT2, vesicular monoamine transporter 2.

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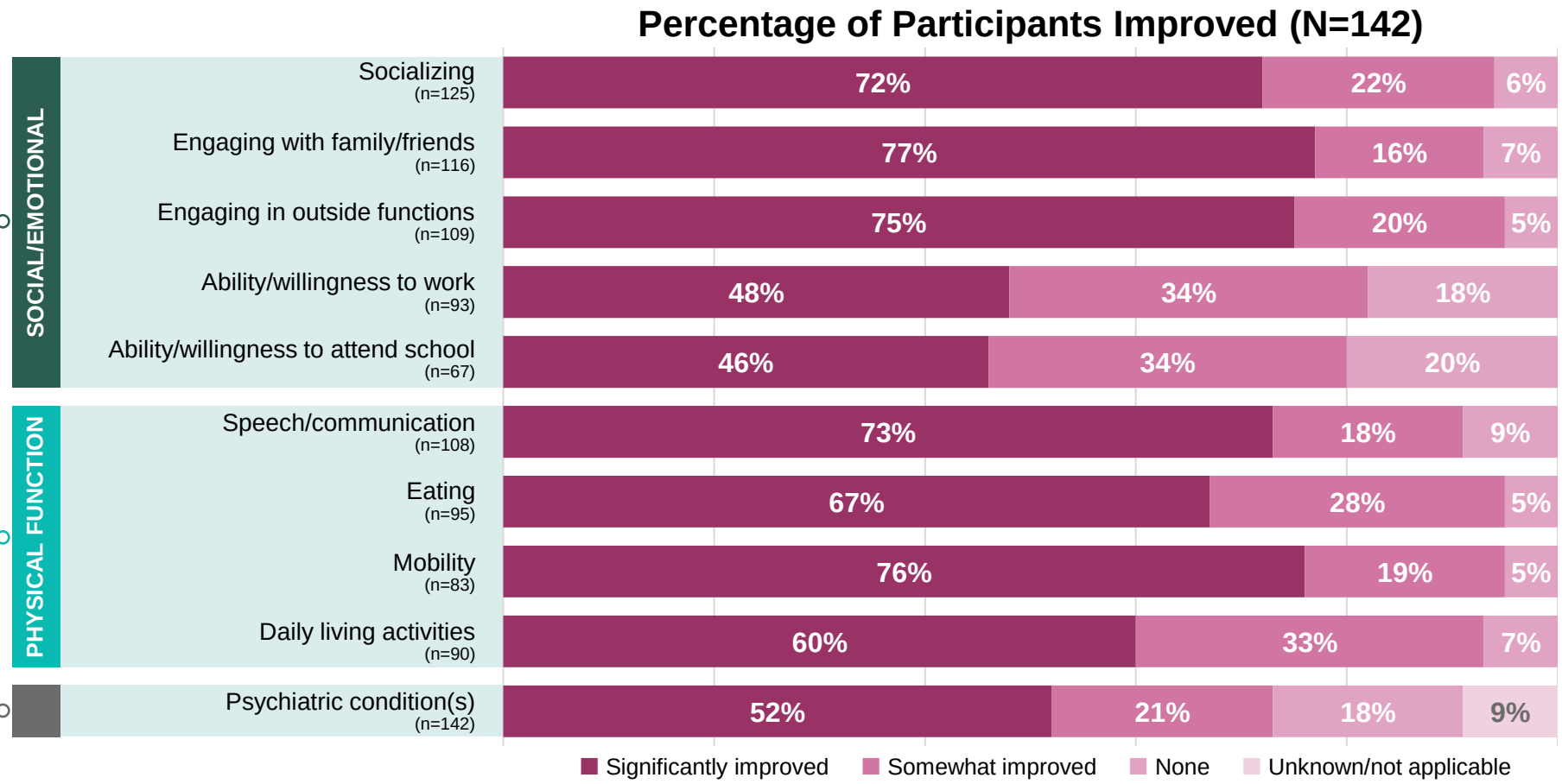
Treatment Outcomes in the “Significantly Improved” TD Group

Clinician perception of improvement in the social and physical well-being domains and psychiatric conditions in participants with “significantly improved” TD symptoms after VMAT2 inhibitor treatment

~80 to 95% of participants had social/ emotional improvements

~90 to 95% of participants had physical function improvements

73% of participants had psychiatric improvements



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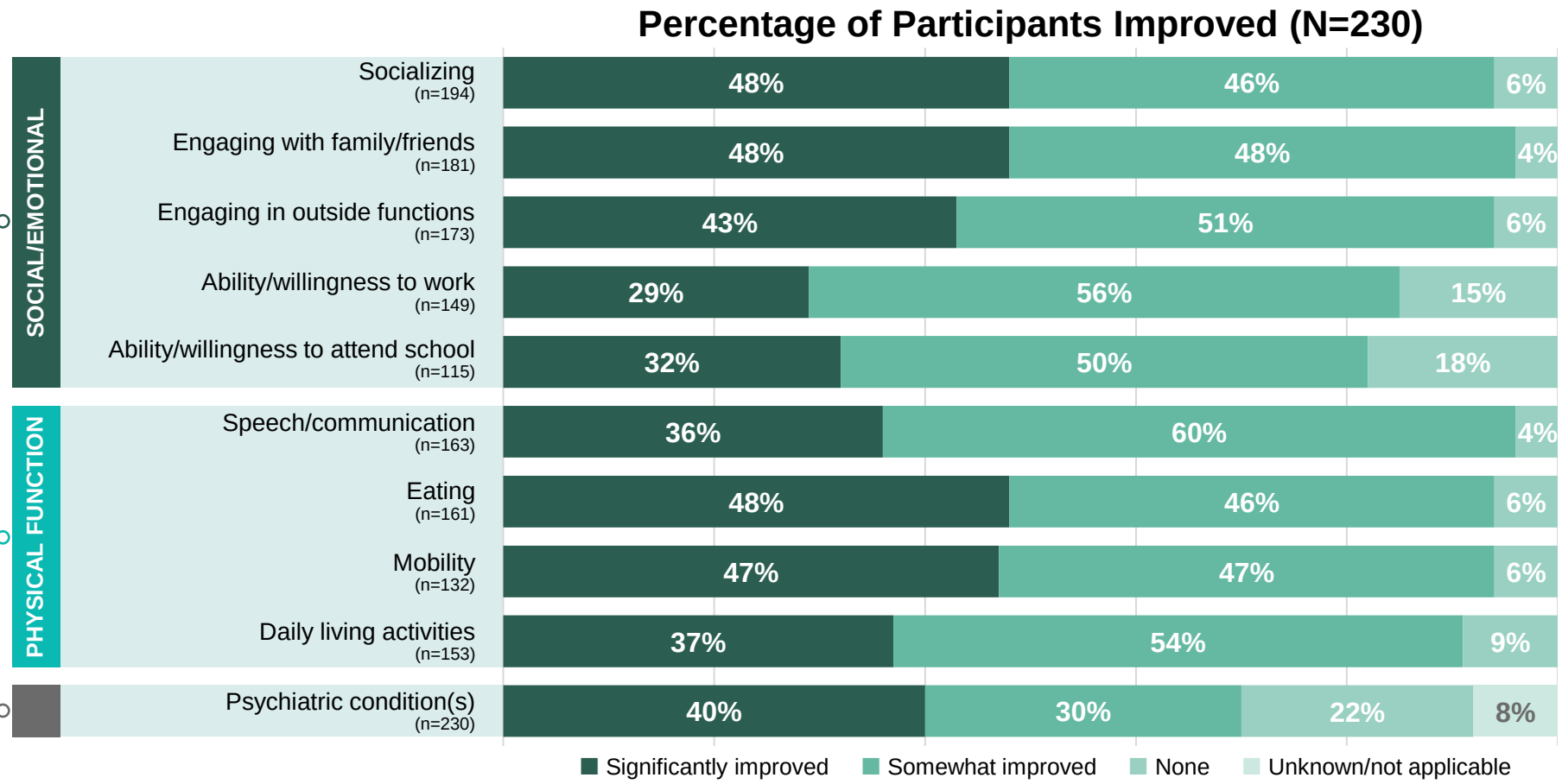
Treatment Outcomes in the “Much Improved” TD Group

Clinician perception of improvement in the social and physical well-being domains and psychiatric conditions in participants with “much improved” TD symptoms after VMAT2 inhibitor treatment

~80 to 95% of participants had social/emotional improvements

~90 to 95% of participants had physical function improvements

70% of participants had psychiatric improvements



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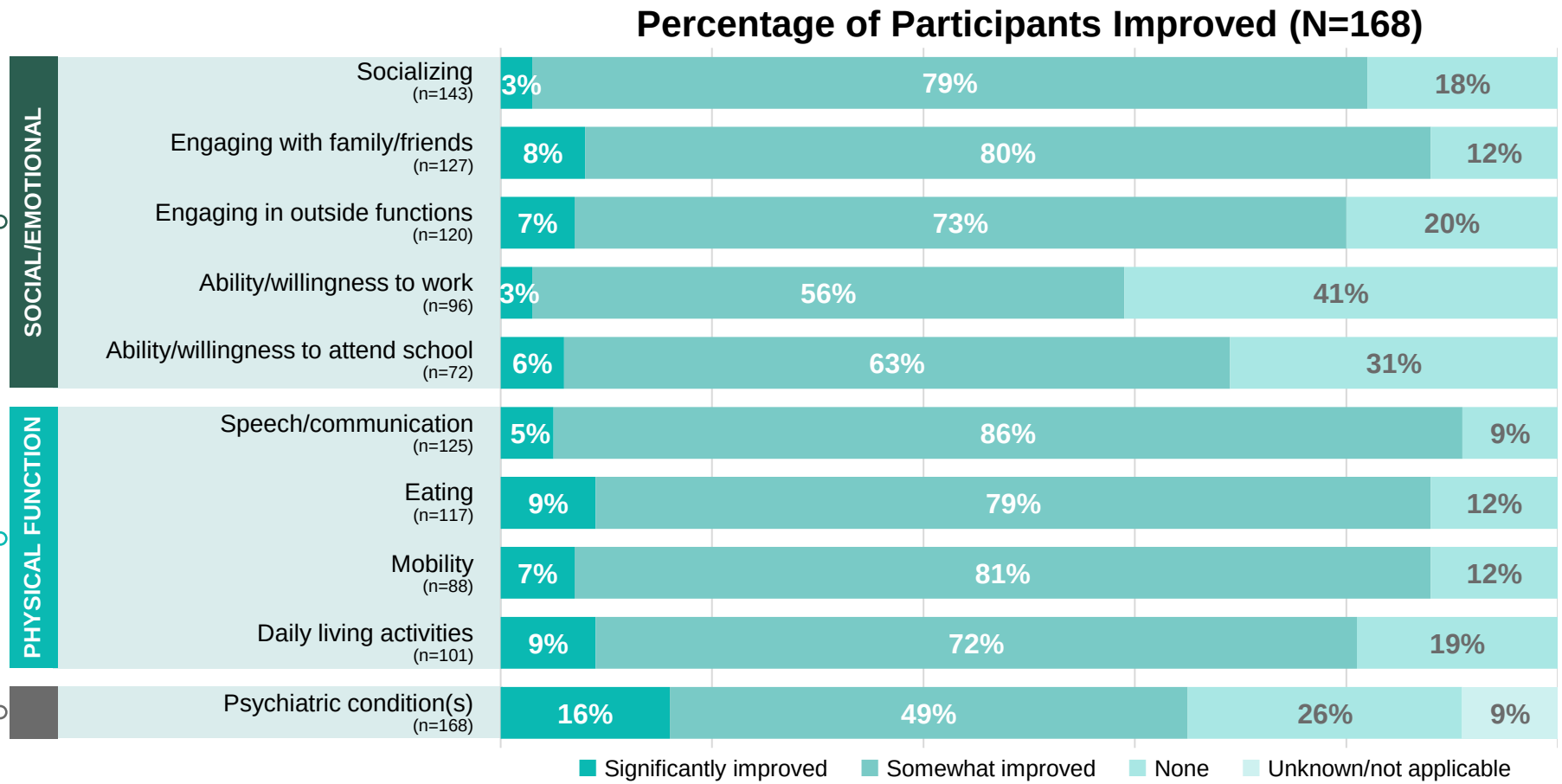
Treatment Outcomes in the “Somewhat Improved” TD Group

Clinician perception of improvement in the social and physical well-being domains and psychiatric conditions in participants with “somewhat improved” TD symptoms after VMAT2 inhibitor treatment

~60 to 90% of participants had social/ emotional improvements

~80 to 90% of participants had physical function improvements

65% of participants had psychiatric improvements



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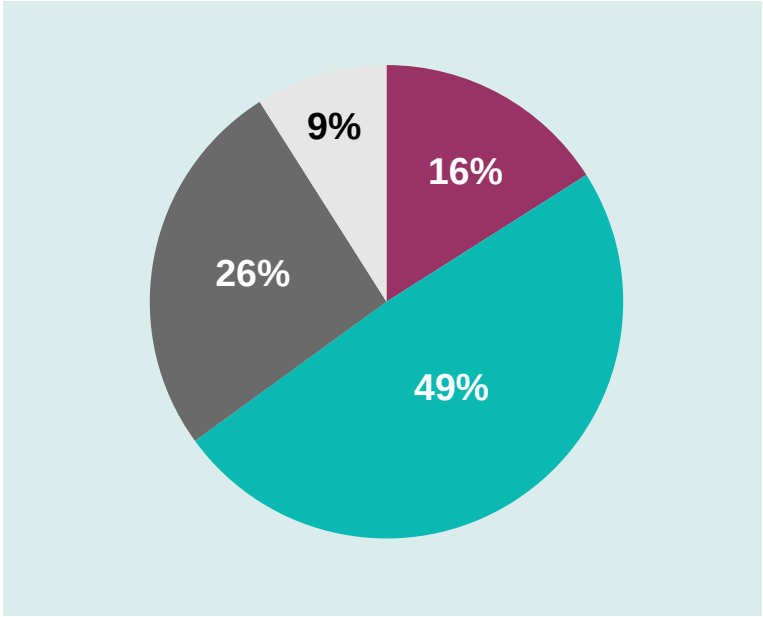
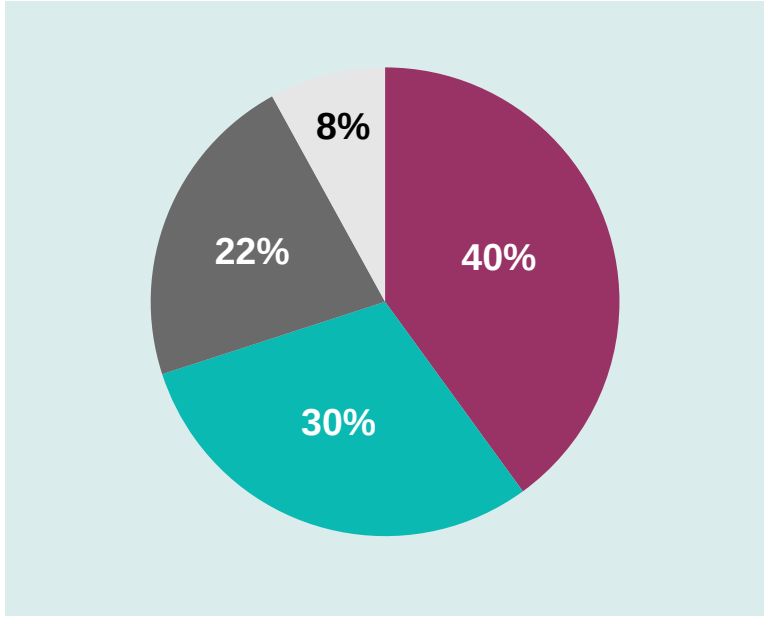
Psychiatric Condition Outcomes

Clinician's assessment of changes in patient's psychiatric condition(s) since starting treatment with a VMAT2 inhibitor stratified by TD symptoms improvement

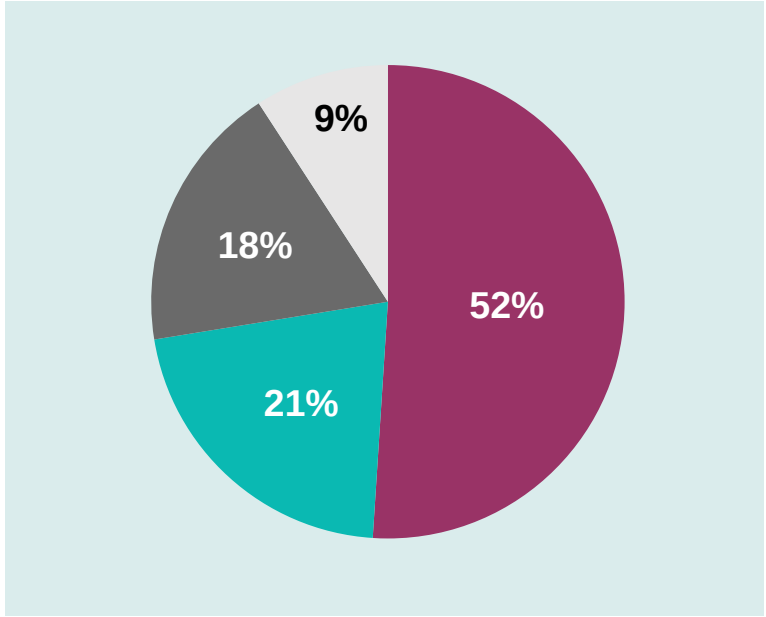
Participants With **Somewhat Improved** TD Symptoms (n=168)



Participants With **Much Improved** TD Symptoms (n=230)



Participants With **Significantly Improved** TD Symptoms (n=142)



Improvement of psychiatric condition: Unknown/not available | No improvement | Somewhat improved | Significantly improved

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Summary

Prior to TD treatment, 93% of participants showed impairment in ≥1 social domain and 88% were impaired in ≥1 physical domain

Clinician's assessment on the impact of TD showed that 90% (540/601) of participants had improvement in TD symptoms (somewhat, much, or significantly improved) with VMAT2 inhibitor use

Participants who had improvements in TD symptoms (significantly improved [N=142] or much improved [N=230]) also had improvements in social and physical/functional aspects:

- 80% to 95% of participants had social improvements in the following areas: socializing, engaging with family/friends, engaging in outside functions, ability/willingness to work, and ability/willingness to attend school
- 90% to 95% of participants had physical/functional improvements in the following areas: speech/communication, eating, mobility, and daily living activities

Clinicians/payers/professional organizations should consider symptom impact and other treatment outcomes when evaluating TD therapy access and continuation

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