

Real-world Multiple Myeloma Patient Experience by Frailty Status: Symptom Burden, Physical Function, Quality of Life, and Treatment Bother Captured from Electronic Patient-Reported Outcomes (ePROs)

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BACKGROUND

- Evidence suggests the value of frailty status when deciding on treatments in Multiple Myeloma (MM) practice ^{1,2}.
- Electronic Patient-Reported Outcomes (ePROs) enable the capture of patient experience related to frailty and outcomes.
- This study aimed to explore symptom burden, physical function, quality of life, and treatment bother collected from ePROs by frailty status.

METHODS

- Patients with MM were enrolled in Carevive PROMpt®, a remote symptom monitoring platform, between 9/1/2020 and 3/10/2023.
- Baseline frailty status was ascertained from Carevive's modified Geriatric Assessment (mGA), the Cancer and Aging Resilience Evaluation (CARE) geriatric survey, and patient-reported functional status (PRFS).
- Outcomes were described using the validated tools: derived PRO-CTCAE for symptoms, PROMIS 4a Physical Function for physical function, global health/QoL items from EORTC QLQ-C30 for quality of life, and a single item FACT GP5 for treatment bother.
- Results were stratified by frailty status (Fit, Intermediate, Frail).

Instruments for Frailty Assessment

Carevive modified Geriatric Assessment (mGA)	Palumbo A, Bringhen S, Mateos MV, et al: Geriatric assessment predicts survival and toxicities in elderly myeloma patients: An International Myeloma Working Group report. <i>Blood</i> 125:2068-2074, 2015 Katz JN, Chang LC, Sangha O, et al: Can comorbidity be measured by questionnaire rather than medical record review? <i>Medical Care</i> 34:73-84, 1996
Cancer and Aging Resilience Evaluation Geriatric Assessment (CARE GA)	Hurria A, Gupta S, Zauderer M, et al.: Developing a cancer-specific geriatric assessment: a feasibility study. <i>Cancer</i> . 2005;104(9):1998-2005. 6. Rockwood K, Mitnitski A.. Frailty in relation to the accumulation of deficits. <i>J Gerontol A Biol Sci Med Sci</i> . 2007;62(7):722-727. 7. Searle SD, Mitnitski A, Gahbauer EA, Gill TM, Rockwood K.. A standard procedure for creating a frailty index. <i>BMC Geriatr</i> . 2008;8:24.
Patient-reported Functional Status (PRFS)	Oken MM, Creech RH, Tormey DC, et al. Toxicity and response criteria of the eastern cooperative oncology group. <i>Am J Clin Oncol</i> 1982;5:649e655. Martin L, Watanabe S, Fainsinger R, et al. Prognostic factors in patients with advanced cancer: use of the patient-generated subjective global assessment in survival prediction. <i>J Clin Oncol</i> 2010;28:4376e4383.

RESULTS

- Of 151 patients included, frailty status was successfully classified for 97% of patients and 99% of patients with 12+ weeks of follow-up. Most patients were Fit (63%), 29% were Intermediate, and 8% were Frail (Table 1).
- Median age was 66, 44% were females, 75% were white, and 56% self-reported at least one comorbidity (Table 1).
- The most frequently reported symptoms were general pain (23%), numbness and tingling (23%), and fatigue (21%), Table 1.
- Symptom burden was considerably lower for Fit (16%) and Intermediate (16%) patients at the start of their treatment compared to Frail patients (25%), Figure 1.
- On average, physical function was two-fold higher for Fit patients compared to Frail patients (Figure 2).
- Quality of life and treatment bother (Figure 3 and 4, respectively) were comparable over time across all levels of frailty. However, on average, Frail patients began treatment at a lower level of quality of life.

Table 1: Baseline Characteristics Stratified by Frailty Status

Variable	All patients (n=151)	Fit (n=93)	Intermediate (n=42)	Frail (n=12)	Not Specified (n=4)
Female, no. (%)	66 (44)	36 (39)	21 (50)	8 (67)	1 (25)
Age group by 10-year increments, no. (%)					
10-20 years old	1 (1)	1 (1)	0 (0)	0 (0)	0 (0)
21-30 years old	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
31-40 years old	2 (1)	2 (2)	0 (0)	0 (0)	0 (0)
41-50 years old	11 (7)	7 (8)	2 (5)	1 (8)	1 (25)
51-60 years old	22 (15)	17 (18)	5 (12)	0 (0)	0 (0)
61-70 years old	66 (44)	40 (43)	20 (48)	4 (33)	2 (50)
71-80 years old	40 (27)	23 (25)	13 (31)	4 (33)	0 (0)
>80 years old	8 (5)	2 (2)	2 (5)	3 (25)	0 (0)
Not specified	1 (1)	1 (1)	0 (0)	0 (0)	0 (0)
Stage					
I	27 (18)	19 (20)	5 (12)	1 (8)	2 (50)
II	36 (24)	23 (25)	10 (24)	3 (25)	0 (0)
III	23 (15)	13 (14)	6 (14)	2 (17)	2 (50)
IV	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Other	11 (7)	7 (8)	3 (7)	1 (8)	0 (0)
Extensive	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Not Specified	54 (36)	31 (33)	18 (43)	5 (42)	0 (0)
Race, no. (%)					
American Indian or Alaska Native	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Asian	3 (2)	0 (0)	3 (7)	0 (0)	0 (0)
Black or African American	33 (22)	21 (23)	7 (17)	3 (25)	2 (50)
White	113 (75)	70 (75)	32 (76)	9 (75)	2 (50)
Other	1 (1)	1 (1)	0 (0)	0 (0)	0 (0)
Not Specified	1 (1)	1 (1)	0 (0)	0 (0)	0 (0)
Ethnicity, no. (%)					
Hispanic or Latino	5 (3)	4 (4)	1 (2)	0 (0)	0 (0)
Not Hispanic or Latino	131 (87)	82 (88)	36 (86)	10 (83)	3 (75)
Not Specified	15 (10)	7 (8)	5 (12)	2 (17)	1 (25)
Comorbidities					
Diabetes Mellitus					12 (13)
Kidney Issues					11 (12)
Congestive Health Failure					11 (12)
Asthma					8 (9)
Cardiovascular accident or transient attack					7 (8)
Rheumatoid Arthritis, Lupus and/or Polymyalgia Rheumatica					7 (8)
Stomach or Peptic Ulcers					6 (7)
Myocardial Infarction					4 (4)
Emphysema					3 (3)
Leukemia					3 (3)
Lymphoma					2 (2)
Cirrhosis or Severe Liver Damage					1 (1)
Peripheral Vascular Disease					0 (0)
Alzheimer's Disease					0 (0)

Note: Percentages calculated for Table 1 were taken among the 89 patients who completed responses for comorbidities.

CONCLUSION

- Over the course of treatment, MM patients reported more treatment burden, better physical function and QoL, and more treatment bother.
- Findings suggest there may be functional differences in the overall patient experience at different levels of frailty in MM.
- This further underscores the importance of capturing frailty status in oncology care.

Figure 1: Collective Symptom Burden Stratified by Frailty Status

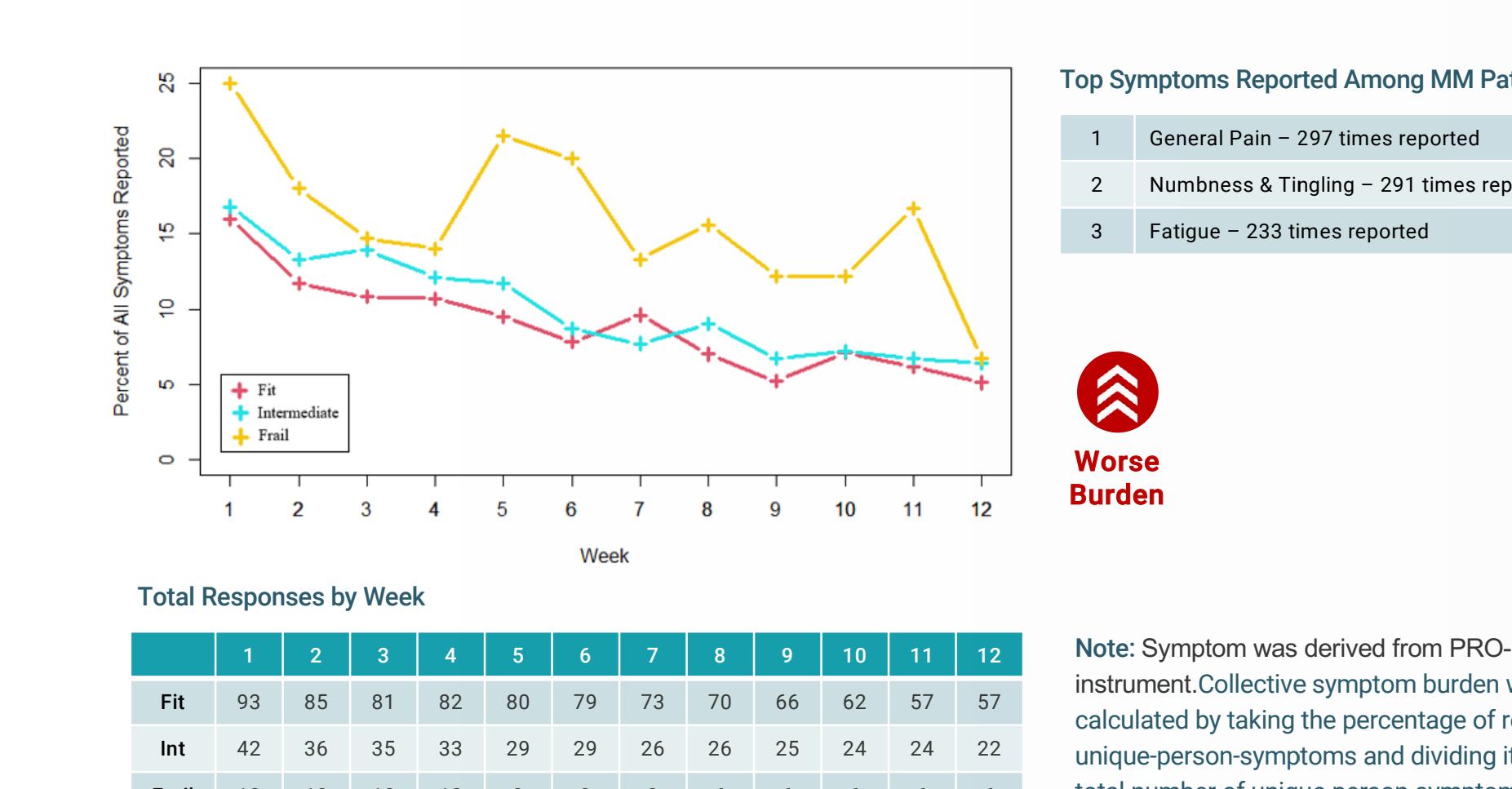
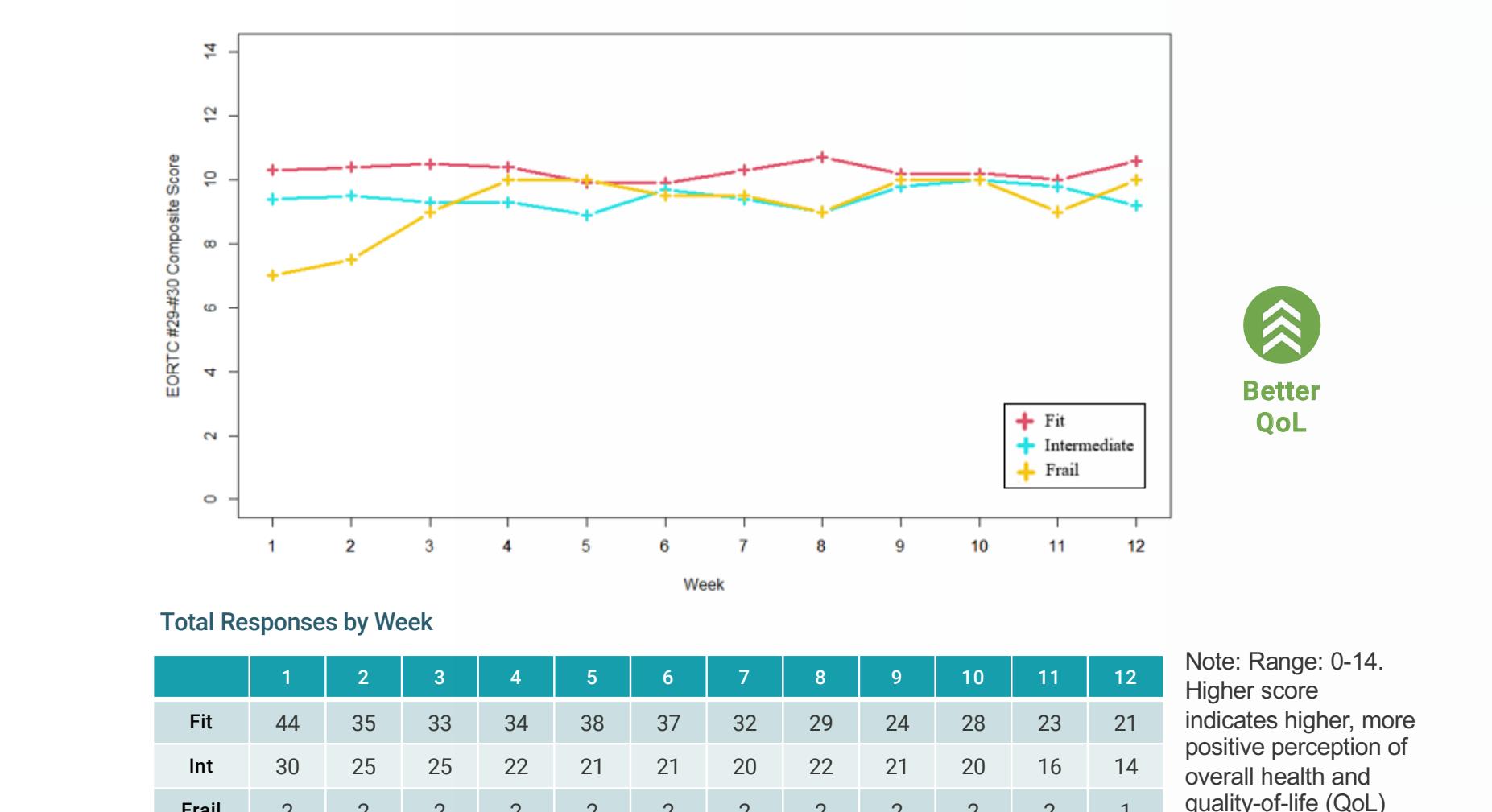


Figure 3: Weekly Patient Experience Reporting of EORTC QLQ-C30 Composite Scores Among MM Patients by Frailty Status



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- Nathwani, et al. Integrating touchscreen-based geriatric assessment and frailty screening for adults with multiple myeloma to drive personalized treatment decisions. *JOP*, 2020 Jan;16(1):e92-e99. doi: 10.1200/JOP.19.00208. Epub 2019 Nov 25. PMID: 31765266
- Wildes, et al. Geriatric assessment in older adults with multiple myeloma. *J Am Geriatr Soc*. 2019 May;67(5):987-991. doi: 10.1111/jgs.15715.

Figure 2: Weekly Patient Experience Reporting of PROMIS 4A Physical Function Composite Scores Among MM Patients by Frailty Status

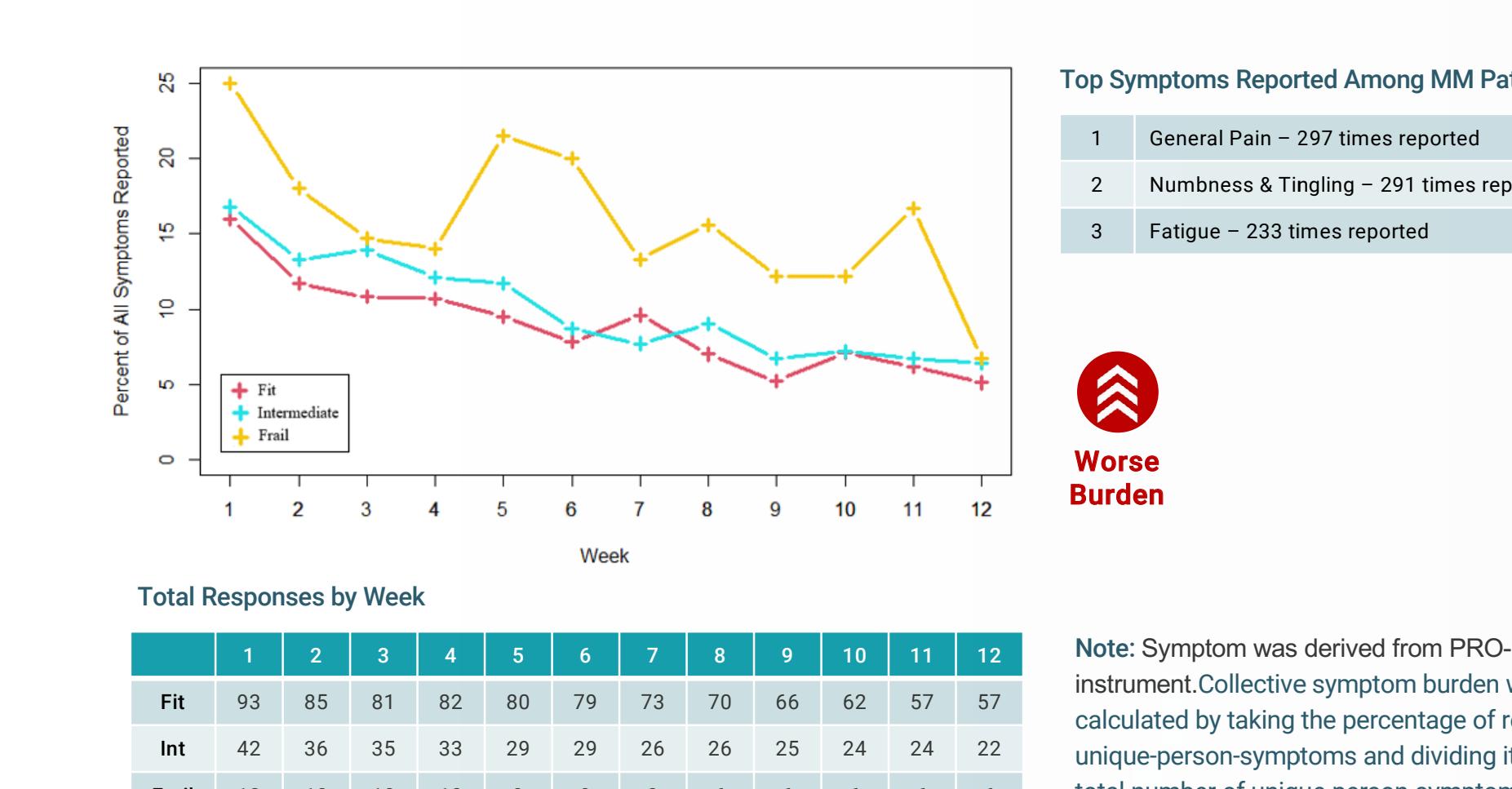


Figure 4: Weekly Patient Experience Reporting of Treatment Bother Among MM Patients by Frailty Status

