

Multidimensional aspects of Fatigue and associations with Quality of Life in Type 2 Diabetes

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Overview

➤ Learning Objectives:

- To learn about the impact of fatigue on quality of life for individuals with T2DM.
- To better understand the impact of fatigue on the perceived burden of diabetes.

Purpose of this Study

- The present study examines multidimensional aspects of fatigue in Type 2 Diabetes and their associations with physical and mental components of Quality of Life



Depression and Diabetes

- Diabetes can be physically and behaviorally demanding, requiring multiple daily self-care activities.
- Depression is also prevalent and impacts numerous health and behavioral outcomes.

Fatigue

- Fatigue has been identified as a burdensome overlapping construct between depression and diabetes (Edege, 2003).
- This construct has been well-documented in the chronic disease literature, specifically Cancer and Multiple Sclerosis. This is less well studied in diabetes.

Fatigue

- Simon & von Korff (2006): Health-related fatigue may be an independent construct in chronic disease.
- Assessment of fatigue could provide information above and beyond that of depression or other disease-specific distress measures alone.

Quality of Life

- **Quality of Life** can be defined as the ways in which health, illness, and medical treatment effect an individual's perception of their daily functioning and well-being (Guyatt, Feeny, & Patrick, 1993).
 - **Physical:** Functional Status
 - **Mental:** Level of emotional interference with daily functioning.

Measures

Observed Construct	Measure
Depressive Symptomatology	Center for Epidemiological Studies of Depression Scale-10 (CESD-10 total score)
Diabetes-Specific Distress	Problem Areas In Diabetes Scale (PAID total score)
Fatigue	Multidimensional Fatigue Symptom Inventory-Short Form (MFSI-SF total score)
Diabetes Self-Care Behavior	Summary of Diabetes Self-Care Activities (SDSCA diet and blood glucose testing subscales)
Quality of Life	Medical Outcomes Study Short Form 1 (SF-12 physical and mental component subscales)

- *Covariates were collected via chart review and include: age, gender, BMI, duration of diabetes, and use of medication* (exogenous insulin, oral diabetes agents, and antidepressants)

Multidimensional Fatigue Symptom Inventory-Short Form (MFSI-SF)

➤ 5 factors:

- (1) general fatigue;
- (2) physical;
- (3) emotional;
- (4) mental; and
- (5) vigor.

➤ Total Score = Sum (Factors 1-4) - Vigor

Inclusion Criteria

- Participants included in this study were men and women who met the following eligibility criteria:
 - (1) a diagnosis of type 2 diabetes mellitus,
 - (2) were over the age of 21,
 - (3) could read, write, and understand English.
 - (4) could successfully complete the MINI-COG
- Participants were also screened for treatment regimen (diet only, insulin, oral agents, or both).

Participants

➤ **Participants (N = 151)**

- Drawn from Floyd Memorial Hospital in New Albany, IN
- Asked by research personnel if they were willing to participate in study while waiting for clinic appointment.
- Questionnaires could be returned on site or via mail (pre-paid postage will be provided).

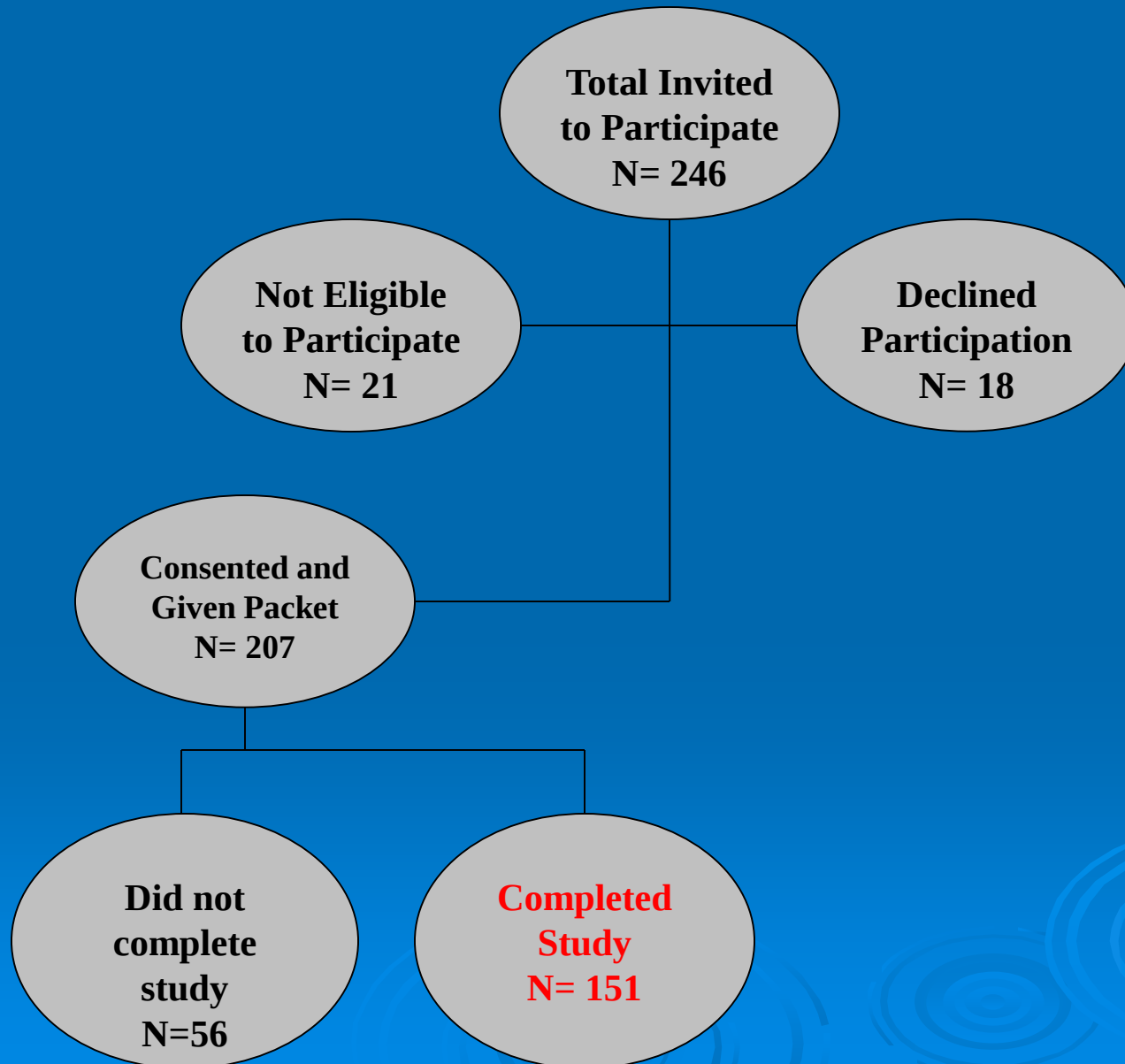
➤ **Consent**

- Participants received questionnaire packet upon consent.
- Consent form and HIPAA forms were completed on site.

➤ **Screening**

- Participants were screened for inclusion (MINI-COG, inclusion criteria).
- Participants were given questionnaire packet.

Recruitment



Demographics

- 48% Male
- 93.2% Caucasian
- Age: $\underline{M} = 60.68$
(SD=11.24)
- 23.1% Antidepressant
- 78.2% Hypertension
- 88.7% Hyperlipidemia
- 42.3% Peripheral Neuropathy
- 92.3% DM Oral Agents
- 34.8% Exogenous Insulin

Health Status

	Mean	Std. Dev.
Duration of DM	143.64 (11.97)	102.54 (8.54)
BMI	35.38	6.83
# of Complications	4.23	1.74
HbA1c	7.33	1.45

Heirarchical Regression

1	Demographics	Age, Gender, BMI
2	Diabetes Variables	Insulin use, duration of DM, oral rx use
3	Medication	Anti-dep. Use
4	Outcome	Dep. Sx, PAID, fatigue

Results: Quality of life Outcomes



Fatigue and Physical Quality of Life

	R ²	ΔR ²	ΔF
Age, BMI, gender	.092	.092	4.23*
DM Variables	.126	.034	1.60
Anti- Depressants	.160	.035	5.04*
MFSI-SF	.267	.107	17.68**

*p < .05; **p < .001

Fatigue and Mental Quality of Life

	R^2	ΔR^2	ΔF
Age, BMI, gender	.047	.047	2.06
DM Variables	.057	.011	.468
Anti- Depressants	.122	.055	7.55*
MFSI-SF	.483	.371	86.81**

* $p < .05$; ** $p < .001$

Conclusions

- Fatigue has significant negative impact on mental and physical quality of life when controlling for depressive symptomatology and diabetes-specific distress.
- Fatigue scores may reflect both the physical and daily demands of living with T2DM.
- Fatigue is often a persistent symptom of individuals on pharmacotherapy for MDD.

Limitations

- Cross-sectional data limits causality.
 - Shared measurement variance.
 - Self-report limitations
 - Retrospective Recall.
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Future Directions

- ✓ Explore associations with a sample of poorly controlled diabetes.
- ✓ Explore depressed individuals against normal controls.
- ✓ Longitudinal Data
- ✓ Further exploration of the impact of CVD risk and obesity.

Thank you!

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Questions

