

# Treatment Satisfaction Levels Among Adults with Concomitant Conditions of Type 2 Diabetes Mellitus and Hypertension

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## BACKGROUND

- HTN, among other risk factors, acts as an independent modifiable contributor to CVD in patients with diabetes<sup>1</sup>
- Current ADA and IDF standards of medical care aim to reduce the vascular complications of T2DM through control of glycemia and blood pressure<sup>2,3</sup>
- ADA Standards of Medical Care in Diabetes guidelines state that patients with HTN (systolic blood pressure  $\geq 140$  mmHg or diastolic blood pressure  $\geq 90$  mmHg) should receive pharmacologic therapy. Pharmacologic therapy for patients with diabetes and HTN should be with a regimen that includes either an ACE inhibitor or an ARB<sup>2</sup>
- Previous studies indicate that approximately 88% of patients receive pharmacological treatment for their diabetes and hypertension,<sup>4</sup> but satisfaction with treatment for diabetes and hypertension has not been evaluated

## OBJECTIVE

- To evaluate the satisfaction with therapy for adults with the concomitant conditions of T2DM and HTN

## METHODS

### Study Design

- Cross-sectional analysis among SHIELD respondents with T2DM and HTN
- Study to **Help Improve Early** evaluation and management of risk factors **Leading to Diabetes** (SHIELD) is a 5-year population-based survey conducted to better understand the risk for the development of diabetes, as well as diabetes disease burden
  - Based upon a screening questionnaire mailed to 200,000 nationally representative households (TNS NFO Household Panel), responses for 211,097 adults from 127,420 households were obtained (64% response rate)
  - A baseline survey was sent to 22,001 selected individuals derived from the screening respondents. Since 2005, annual SHIELD surveys have captured self-reported information on health status, attitudes and behaviors, quality of life, and anthropometry from this representative sample of the US population
  - The 2009 survey collected information from 13,822 SHIELD respondents (70% response rate) to identify those with T2DM and HTN

### Study Population

- Respondents were 18 years of age or older
- Self-reported diagnosis of T2DM was based on being “told by a doctor, nurse or other healthcare professional that you have type 2 diabetes”
- Respondents reported a diagnosis of HTN based on being told by a healthcare professional that they had high blood pressure or HTN
- Among the T2DM sample, respondents who self-reported a diagnosis of HTN were identified

## METHODS (Continued)

### Study Measures

- Respondents provided the name of each medication currently prescribed for them while referring to the medication labels.
- Therapy satisfaction was captured with 3 separate questions: 1) ability to control the disease, 2) side effects of therapy, and 3) overall satisfaction
  - 6-point response scale with anchors of 0 = completely dissatisfied and 5 = completely satisfied
  - Score of 0, 1, or 2 was classified as dissatisfied
  - Score of 3 was classified as neutral
  - Score of 4 or 5 was classified as satisfied

How satisfied or dissatisfied are you with...	HEART DISEASE MEDICATIONS					DIABETES MEDICATIONS								
	Completely Dissatisfied	1	2	3	4	5	Completely Satisfied	1	2	3	4	5		
The ability of the medication(s) to prevent or treat your condition(s)?	0	1	2	3	4	5	48	0	1	2	3	4	5	51
The side effects of the medication(s)	0	1	2	3	4	5	0	0	1	2	3	4	5	0
This/These medication(s) overall....	0	1	2	3	4	5	50	0	1	2	3	4	5	53

### Statistical Analyses

- Descriptive statistics were reported as mean and SD for continuous variables and percentage of respondents for categorical variables

## RESULTS

- In total, 1,652 respondents reported a diagnosis of T2DM and HTN and were receiving medication for diabetes in the 2009 SHIELD survey
- 55.1% (n = 911) of T2DM + HTN respondents completed the treatment satisfaction questions for both their diabetes and hypertension medications

**Table 1. Characteristics of T2DM respondents with concomitant HTN who completed the treatment satisfaction questions**

Characteristics	T2DM + HTN (n = 911)
Age, years, mean (SD)	65.2 (11.3)
Men, %	47.3
White, %	76.9
African-American, %	17.8
Education, % with < some college	32.3
Income, % with <\$30,000/year	36.0
Dyslipidemia, %	85.5
Heart disease/heart attack, %	46.9
Stroke/TIA, %	11.0
Currently smoke, %	9.2

## RESULTS (Continued)

- The treated population with T2DM and HTN was composed largely of those of white race and those with additional CVD risk factors, including dyslipidemia (Table 1)

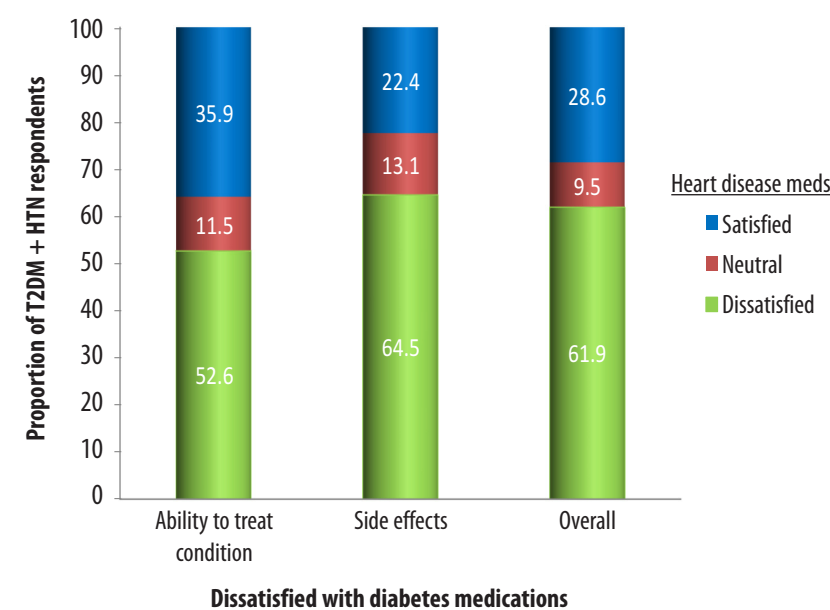
### Treatment Satisfaction

#### Overall Satisfaction Levels

- Among the cohort of 911 respondents with T2DM + HTN, the majority were satisfied with their heart disease medications (74%–85%) and their diabetes medications (76%–83%)

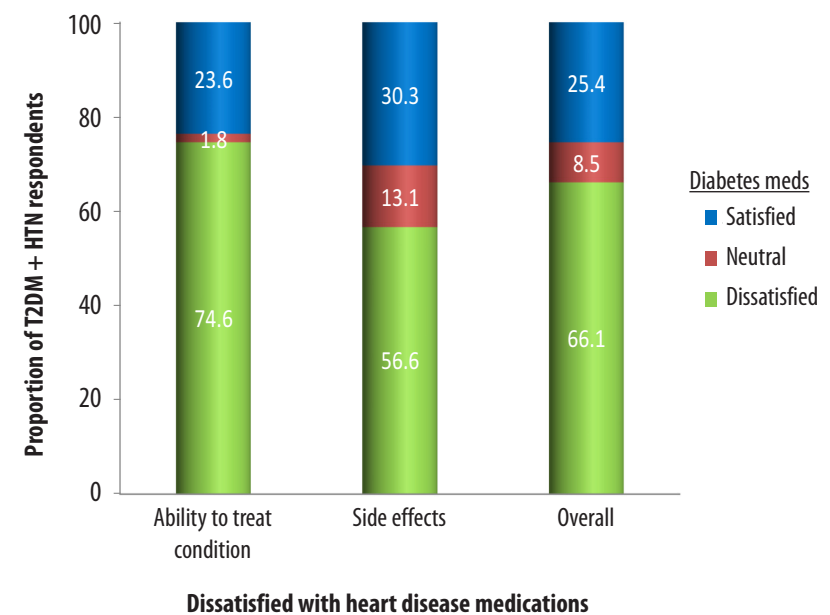
#### Dissatisfaction with diabetes and heart disease medications

**Figure 1. Satisfaction levels with heart disease medications among respondents who were dissatisfied with their diabetes medications**



- Of those treated respondents with T2DM + HTN who were dissatisfied with their diabetes medications (n = 63), the majority were also dissatisfied with their heart disease medications (Figure 1)
  - 52.6% of respondents were dissatisfied with the ability of their medications to treat both their heart disease and diabetes
  - 64.5% of respondents were dissatisfied with the side effects from their heart disease and diabetes medications
  - 61.9% of respondents were dissatisfied overall with their heart disease and diabetes medications

**Figure 2. Satisfaction levels with diabetes medications among respondents who were dissatisfied with their heart disease medications**



- Among treated respondents with T2DM + HTN who were dissatisfied with their heart disease medications (n = 59), the majority were dissatisfied with their diabetes medications (Figure 2)
  - 74.6% of respondents were dissatisfied with the ability of their medications to treat both their diabetes and heart disease
  - 56.6% of respondents were dissatisfied with the side effects from their diabetes and heart disease medications
  - 66.1% of respondents were dissatisfied overall with their diabetes and heart disease medications

## LIMITATIONS

- Diagnosis of diabetes, HTN, and other comorbid conditions were self-reported and could not be validated with medical record review or administrative claims data
- Household panels, like the SHIELD study, tend to under-represent the very wealthy and very poor segments of the population and do not include military or institutionalized individuals

## SUMMARY

- Although most respondents with T2DM and HTN were satisfied with their treatment, dissatisfaction with treatment for one condition was associated with dissatisfaction with therapy for the other condition
- Approximately 53%–75% of respondents who were dissatisfied with one of their disease medications were also dissatisfied with the other disease medications for the ability to treat their diabetes and hypertension
- Approximately 57%–64% of respondents who were dissatisfied with the side effects of one of their disease medications were also dissatisfied with the side effects of the other disease medications
- About 62%–66% of respondents who were dissatisfied overall with one of their disease medications were also dissatisfied with the other disease medications
- Respondents' perceptions of ineffectiveness of the medication to treat their diseases and side effects appear to contribute to dissatisfaction with therapy for diabetes and hypertension

## CONCLUSIONS

- High concordance in therapy dissatisfaction was observed between diabetes and heart disease medications among treated respondents with T2DM and HTN. Further research is needed to determine if the dissatisfaction with both diabetes and heart disease medications leads to poor disease control for both conditions
- Future research is needed to test the hypothesis of improved satisfaction with therapy for medications which effectively treat one or more conditions with minimal side effect profile

## References

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## List of Abbreviations

ACE/ACEI	Angiotensin-converting enzyme inhibitor
ADA	American Diabetes Association
ARB	Angiotensin II antagonist
CVD	Cardiovascular disease
HTN	Hypertension
IDF	International Diabetes Federation
SHIELD	Study to Help Improve Early evaluation and management of risk factors Leading to Diabetes
T2DM	Type 2 diabetes mellitus
TIA	Transient ischemic attack
TNS NFO	Taylor Nelson Sofres National Family Opinion

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