Health utility decrement of treatment-related attributes for type 2 diabetes patients in China   PCR263

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OBJECTIVES

➢ To estimate health utility decrement (i.e., disutility value) associated with four different treatment-related attributes based on preferences of type 2 diabetes (T2DM) patients in China.

METHODS

➢ Four attributes, including administration mode, storage temperature, dose frequency, and weight change, were identified through published literature and interviews with clinicians (N=7) and patients (N=16).

➢ A representative sample of T2DM patients was recruited from eight cities in China, stratified by age and sex.

➢ Respondents completed seven time trade-off (TTO) tasks during face-to-face interviews.

➢ Random-effect model was selected for TTO data.

➢ Total sample was used in the main analysis, and patients categorized by the number of medication, needle phobia, duration of treatment, health related quality of life and travel frequency were used in the subgroup analysis.

RESULTS

Table 1 Characteristics of respondents

Characteristics	N=400
Gender (n, %)	
Male	211 (52.75%)
Female	189 (47.25%)
Age (mean, SD)	50.44 (11.76)
Age group (years) (n, %)	
18-39	69 (17.25%)
40-59	209 (52.25%)
≥ 60	122 (30.50%)
BMI (mean, SD)	24.39 (3.60)
Duration of diabetes (month) (mean, SD)	59.34 (45.85)
Current treatment (n, %)	
Diet control	285 (71.25%)
Oral medication	400 (100.00%)
Injectable medication	11 (2.75%)
Other	4 (1.00%)
EQ-5D-5L utility (mean, SD)	0.933 (0.083)
EQ-VAS (mean, SD)	81.598 (10.665)

➢ **Respondents**

• A total of **400** respondents were included in this study. As shown in Table 1, **52.75% (N = 211)** of total respondents were male, the mean (SD) age was **50.44 (11.76)** years.

• All patients were currently receiving oral treatment **(N = 400, 100%)**, with a mean duration of **55.93** months.

➢ **Main analysis**

• The estimated coefficients of the models on TTO data are presented in Table 2.

• Of the four attributes, administration mode was associated with the largest disutility. Compared with oral treatment, disutility of injectable treatment was **0.0203 (P<0.001)**.

• The mean disutility of once daily, twice daily and three times daily versus once weekly treatment was **0.0039 (P=0.303)**, **0.0166 (P<0.001)** and **0.0133 (P<0.001)**, respectively.

• The disutility associated with weight change ranged from **0.0027 (-3%, P=0.469)** to **0.0125 (+5%, P<0.001)** compared with -5%.

• And whether the storage environment requires low temperature had no significant effect on the disutility **(0.0018, P=0.685)**.

• We also found that patients preferred once daily oral treatment to once weekly injectable treatment **(0.0143, P=0.025)**, and there was no significant difference between once daily and once weekly oral treatment (Table 3).

Table 2 Estimated coefficients of the fitted model on TTO data

RE model	Coef.	SE	P value
Intercept	0.1728	0.0074	<0.001
Administration mode (Ref: Oral)			
Injectable	0.0203	0.0043	<0.001
Storage temperature (Ref: Not requires low temperature)			
requires low temperature (2-8°C)	0.0018	0.0043	0.685
Dose frequency (Ref: Once weekly)			
Three times daily	0.0133	0.0037	<0.001
Twice daily	0.0166	0.0038	<0.001
Once daily	0.0039	0.0038	0.303
Weight change (Ref: -5%)			
+5%	0.0125	0.0035	<0.001
+3%	0.0031	0.0035	0.374
-3%	0.0027	0.0037	0.469

Table 3 Disutility values of administration mode & dose frequency attributes

RE model	Coef.	SE	P value
Administration mode & dose frequency (Ref: Once daily oral treatment)			
Three times daily injectable treatment	0.0372	0.0062	<0.001
Twice daily injectable treatment	0.0406	0.0065	<0.001
Once daily injectable treatment	0.0332	0.0065	<0.001
Once weekly injectable treatment	0.0143	0.0064	0.025
Three times daily oral treatment	0.0140	0.0055	0.012
Twice daily oral treatment	0.0180	0.0058	0.002
Once weekly oral treatment	0.0065	0.0047	0.169

➢ **Subgroup analysis**

• In subgroup analysis, patients with a **number of medications < 2** and those in the **travel group** preferred to give a significantly greater disutility to injectable treatment (Fig.1).

• Patients in the **travel group** also gave greater disutility values to all levels of dose frequency than patients who barely travel, which means that they were more sensitive to dose frequency attribute.
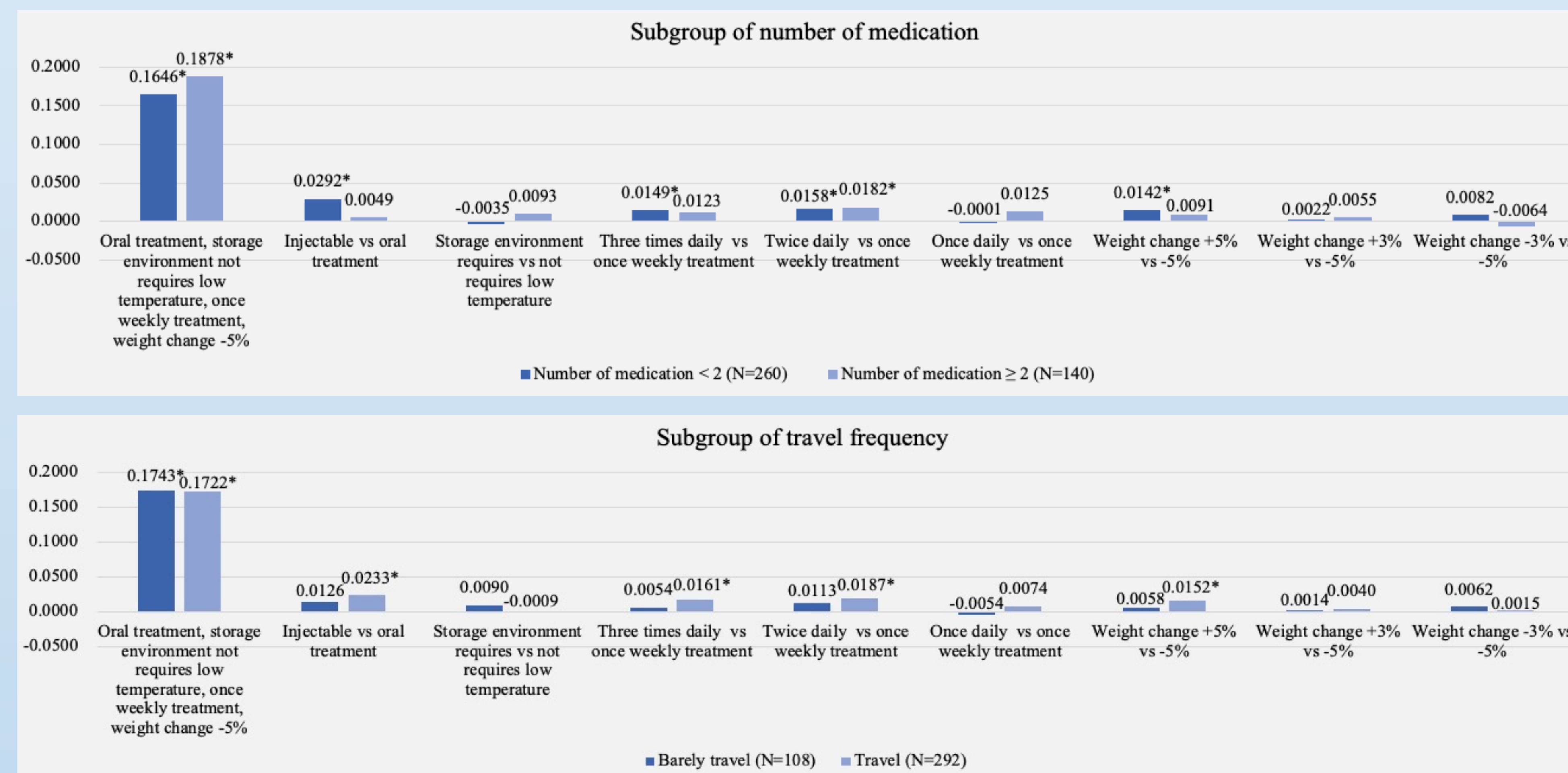

Fig.1 Disutility values of number of medication and travel frequency subgroup analysis

CONCLUSIONS

➢ Administration mode appears to be the most important of the four dimensions from the patients' perspective, followed by dose frequency and weight change. Storage temperature has little effect on utility.

➢ These data illustrate the burden of treatment-related attributes. Impacts of these attributes are smaller than serious diabetes complications, however, even small differences can have a meaningful influence on the outcome when modeling large samples over an extended time period . Our results can be used to support economic evaluations of future treatments in T2DM.