Diabetes mellitus (T2DM). METHODS: Patients 18 years and older diagnosed with T2DM who had at least one indexed claim from May 2009 through September 2010 were assessed from the Truven Health MarketScan Research Database. Inclusion required 1 year continuous enrollment pre and post-insulin use with ≤ 1 prescription for an oral anti-diabetic drug during the pre-index period. Patients diagnosed with T2DM on using only specialty self-injectables during the pre-index period were excluded. Patients were grouped into three FN length cohorts: short (4.6 mm), intermediate (6mm) and long (8 & 12.7mm) needle initiators. Persistence was evaluated at 6 and 12 months by the absence of 90 day gaps between insulin prescriptions. Differences in persistence between cohorts were compared for statistical significance using a Fisher’s exact test (95% CI, two-tail). RESULTS: The study included 21,622 patients with an average age of 59.3 years (SD=11.4). Most patients were within the long needle group (67.6%), followed by the short (21.5%) and intermediate (10.8%) needle users. The majority of patients were non-persistent at the end of the first year of insulin use, with only 38.4% being persistent. Within the first 6 months only 46.5% of patients were persistent and at 12 months persistent decreased to 31.4%. Of the patients persistent within first 6 months, the likelihood of them remaining persistent was high with 82.6% of users reporting no gaps at 1 year. When examining the correlation between needle length and persistence, short needle users were 4.9% (p<0.001) and 2.7% higher (p<0.001) respectively. CONCLUSIONS: Persistence rates were higher for those patients using shorter needles, particularly early on at earlier phases of insulin adoption.

OBJECTIVES: Anti-diabetics have varying efficacy and safety profiles. This study aimed to identify patient preferences for oral anti-diabetics by examining the relative importance (RI) of medication attributes that influence treatment selection among patients in the US with type 2 diabetes mellitus (T2DM). METHODS: A web-based discrete choice experiment (DCE) was developed to assess the RI of 10 medication attributes (effectiveness, hypoglycemia, weight change, gastrointestinal/skin/nervous side effects, urinary tract infections (UTI)/genital infection SEs, blood pressure change, and cardiovascular risk). Participants were presented with hypothetical GLP-1RA profiles of varying levels of each attribute and asked to select the preferred profile. For-worth utility values, or preference weights, were calculated to provide information on the extent to which participants preferred one level of an attribute over another and used to derive RI values. RI values were calculated by regression upon the relative weight of each attribute in the sum of pairwise utility values, with higher values indicating greater importance. RESULTS: A total of 809 invitations were sent; 54% responded. The final sample was composed of the 365 eligible participants. The mean age of the patients was 60.9 years. The RI values for the attributes in order of importance were effectiveness (25.9%), hypoglycemic events (21.5%), weight change (20.1%), gastrointestinal/nervous SEs (14.1%), UTI/genital infection SEs (11.0%), blood pressure (3.7%), and cardiovascular risk (2.9%). Effective, hypoglycemic events, and weight change comprised 68% of the RI. CONCLUSIONS: Results suggest that effectiveness, hypoglycemic events, and weight change are the predominant influences on patients’ medication decisions for T2DM. These results were consistent with findings from a DCE conducted in the United Kingdom (UK), which utilized a similar methodology and yielded similar RI results. The confluence of these findings highlights the importance of these attributes as drivers of medication decisions in patients with T2DM in the United States and UK.

T2DM with non-vegetative patients (n=25). CONCLUSIONS: Smoking, exercise behavior, obesity, alcohol use, and medication adherence (measured using the MMAS-8) were used as predictors of health status (measured using the SF-36v2) controlling for demographics and comorbidities. RESULTS: 79.7% of respondents were male; the mean age was 62.2 years. Nearly two-thirds of patients had a history of smoking (23.4% were current smokers and 41.9% were former smokers) and over a quarter consumed alcohol daily. Patients exercised an mean of 8.8 days per month and over 40% of patients were either overweight (29.4%) or obese (11.4%). Forgetfulness was the most common reason for non-adherence with medication (forgetting medication was reported by 49.9% of patients). This result was remembered from patient interviews. Frequency of injections (weekly, daily), injection device (multiple-use injection pen, single-use injection pen, single-use vial and syringe), needle size (shorter and thinner, longer and thicker), need for refrigeration, and injection-site nodules. Choice questions were based on a pre-determined experimental design with known statistical properties allowing for interaction effects between injection frequency and other injection features. Random-parameters logit was used to estimate preference weights using the same act of randomization. RESULTS: A total of 51 respondents completed the survey; 50% were women and mean age (SD) was 60.8 (11.0) years. Injection frequency was the most important attribute compared with all other attributes in the DCE. Preferences for injection frequency features were dependent on frequency of injections; that is, the estimated preference parameter on the interaction between injection frequency and each treatment feature was statistically significant. Negative injection features were statistically significantly less important to patients if injections were weekly instead of daily. For all injection frequencies, respondents agreed in the design, a greater proportion of patients preferred a weekly injection compared with a daily injection. CONCLUSIONS: In this study, several device attributes were suggested to predict treatment choice in injection-naive T2DM patients. Results suggest that injection frequency is of primary importance and key to understanding patient preferences for injectable diabetes treatments.

OBJECTIVE: The main objective of this study was to estimate the effect of both diabetes-related outcomes, symptoms and comorbid conditions on the HRQoL as reported by diabetes patients. METHODS: A cross-sectional survey of diabetes patients (n = 1468) living in the United States. Each patient completed a questionnaire, which included the EQ-5D-5L instrument and accompanying VAS. Patients were also asked to state which diabetes symptoms and comorbid conditions they are suffering from. By means of logistic linear modeling the health utility scores derived from the EQ-5D were calculated and compared with the VAS. RESULTS: Out of 35 tested symptoms and concomitant conditions, 8 had a significant negative impact on HRQoL. The most important attribute compared with all other attributes in the DCE. Preferences for injection frequency features were dependent on frequency of injections; that is, the estimated preference parameter on the interaction between injection frequency and each treatment feature was statistically significant. Negative injection features were statistically significantly less important to patients if injections were weekly instead of daily. For all injection frequencies, respondents agreed in the design, a greater proportion of patients preferred a weekly injection compared with a daily injection. CONCLUSIONS: In this study, several device attributes were suggested to predict treatment choice in injection-naive T2DM patients. Results suggest that injection frequency is of primary importance and key to understanding patient preferences for injectable diabetes treatments.

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1. Kantar Health, New York, NY, USA, 2Kantar Health, New York, NY

1. DiBonaventura M. examined the association of adherence and health behaviors with health status in T2DM patients. The study included 21,622 patients with an average age of 59.3 years (SD=11.4). Most patients were within the long needle group (67.6%). Smoking, exercise behavior, obesity, alcohol use, and medication adherence (measured using the MMAS-8) were used as predictors of health status (measured using the SF-36v2) controlling for demographics and comorbidities. 79.7% of respondents were male; the mean age was 62.2 years. Nearly two-thirds of patients had a history of smoking (23.4%) were current smokers and 41.9% were former smokers and over a quarter consumed alcohol daily. Patients exercised an mean of 8.8 days per month and over 40% of patients were either overweight (29.4%) or obese (11.4%). Forgetfulness was the most common reason for non-adherence with medication (forgetting medication was reported by 49.9% of patients). This result was remembered from patient interviews. Frequency of injections (weekly, daily), injection device (multiple-use injection pen, single-use injection pen, single-use vial and syringe), needle size (shorter and thinner, longer and thicker), need for refrigeration, and injection-site nodules. Choice questions were based on a pre-determined experimental design with known statistical properties allowing for interaction effects between injection frequency and other injection features. Random-parameters logit was used to estimate preference weights using the same act of randomization. A total of 51 respondents completed the survey; 50% were women and mean age (SD) was 60.8 (11.0) years. Injection frequency was the most important attribute compared with all other attributes in the DCE. Preferences for injection frequency features were dependent on frequency of injections; that is, the estimated preference parameter on the interaction between injection frequency and each treatment feature was statistically significant. Negative injection features were statistically significantly less important to patients if injections were weekly instead of daily. For all injection frequencies, respondents agreed in the design, a greater proportion of patients preferred a weekly injection compared with a daily injection. In this study, several device attributes were suggested to predict treatment choice in injection-naive T2DM patients. Results suggest that injection frequency is of primary importance and key to understanding patient preferences for injectable diabetes treatments.
PDB104
SELF-REPORTED MENTAL HEALTH STATUS IN ADULTS WITH DIABETES AND COMORBID DEPRESSION
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OBJECTIVES: To investigate the marginal impact of depression on self-reported mental health status in adults with diabetes mellitus in the United States. METHODS: We pooled data from 2009 and 2011 from the Medical Expenditure Panel Survey (MEPS) to create a retrospective cohort of adults diagnosed with diabetes, and those with comorbid diabetes and depression. Outcomes included responses from the Kessler Index (K6), six domains of non-specific mental health, and the mental component summary (MCS) of the Short-Form 12 (SF-12). Results were estimated using a multivariable regression analysis adjusted for demographic and clinical characteristics. RESULTS: Compared with adults that had diabetes and no depression (N = 4,498), those with diabetes and depression had a lower average K6 score of 8.21 (5% CI: 2.6, 95% CI: 10.2, 7.15) compared to those with diabetes alone. CONCLUSIONS: Adults with diabetes and comorbid depression have lower self-reported mental health status scores compared to adults with diabetes and no depression. Health Care providers should be aware of the additional mental health burden depression can have on those with diabetes.

PDB105
APPLICATION OF THE NEW INSTRUMENT FOR ASSESSMENT OF HYPOGLYCEMIA SYMPTOMS IN PATIENTS WITH TYPE 2 DIABETES MELLITUS PATIENTS
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OBJECTIVES: Hypoglycemia is the major factor limiting intensive glycemic control and causing severe morbidity, mortality and reduced quality of life in DM patients. Comprehensive assessment of HS is worthwhile. The objective of this study was to test and cross-validate the psychometric properties of the new tool for assessing treatment satisfaction – Patient Treatment Satisfaction Questionnaire (PTSQ) in the population of type 2 DM (T2DM) patients. METHODS: 432 DM patients on basal-bolus insulin therapy were included in the study: mean age 63.4 ± 10.3 yrs; female/male – 98/334; DM duration – 13±3 yrs; therapy duration – 5±4.3 yrs. Patients filled out CSP-DM-Hypo Gl and SF-36. The CSP-DM-Hypo Gl was developed to assess the severity of 29 HS in DM patients. It consists of numerical rating scales scored from “0” (no symptom) to “10” (most extreme symptom). Cronbach’s alpha was used to estimate internal consistency. RESULTS: The CSP-DM-Hypo Gl was easily understood by, and administered to patients: the proportion of missing values was less than 2% for all questions. Practiceability of the CSP-DM-Hypo Gl was demonstrated: patients and physicians acknowledged its comprehensiveness. Physicians recognized the usefulness of the questionnaire to identify HS and to guide treatment strategy. Factor analysis found five underlying constructs for HS (explained 61% of the total variance) with Chronbach alphas varied from 0.8 to 0.87. “Known-group” comparison revealed that nocturnal problems and neurological HS were pronounced in patients with severe or/and nocturnal hypoglycemia than without severe hypoglycemia (p<0.05). Nocturnal problems correlated more closely with SF-36 Physical Functioning, Vitality and Role Emotional Functioning; neurologi- cal/night HS was highly correlated with Emotional Role Functioning (p=0.03-0.42, p<0.05). CONCLUSIONS: The CSP-DM-Hypo Gl is an original tool and a valuable component of the continuous monitoring of HS in DM patients. Monitoring of HS using CSP-DM-Hypo Gl may be recommended to enhance treatment benefits in DM patients after testing its sensitivity.

PDB106
RACIAL DISPARITIES IN TYPE 2 DIABETES MEDICATION ADHERENCE IN MEDICAID ADULTS WITH DEVELOPMENTAL DISABILITIES
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OBJECTIVES: The prevalence of diabetes mellitus is high among patients with developmental disabilities (cerebral palsy, autism, down’s syndrome and cognitive dis- abilities). Developmentally disabled individuals with chronic diseases experience delays in detection of comorbidities, poor disease management and low quality of care. This study examines the racial health disparities in medication adherence in developmentally disabled adults with type 2 diabetes enrolled in Medicaid. METHODS: This was a retrospective cohort study based on a combination of the Health belief model and Aday Anderson’s model of health care utilization. The dataset used for this study was the MarketScan Multi-Payer Medical Claims Database. Adults aged ≥ 18 years with a prior diabetes diagnosis, developmental disability (cerebral palsy/autism/down’s/cognitive disorders) and a new diagnosis of type 2 diabetes enrolled in Medicaid from January 1, 2004 and December 31, 2008, were included. Adults aged ≥ 18 years with diabetes were included in the study if they had a drug prescription enrollment for at least 12 months and were excluded if they were dual eligible. Anti-diabetic medication adherence and diabetic medication persistence were measured using multivariate logistic regression and the Cox-proportional hazard regression models. RESULTS: The study included 1,067,559 patients. After controlling for covariates, African Americans had 24% lower odds of adhering to anti-diabetic medications compared to Caucasians (OR = 0.76, 95% CI = 0.59-0.98, p < 0.05). African Americans on the other hand, were more persistent in taking their anti-diabetic medications compared to Caucasians. Hazard Ratio = 0.97, 95% CI = 0.87-1.07, p < 0.00). CONCLUSIONS: The needs of the developmentally disabled individuals differ somewhat from the needs of individuals without disabilities. Policy recommendations should focus on increasing the number of outpatient centers as well as primary caregivers who can understand the disease management needs of the patient and accordingly collaborate with other specialized health care professionals to enhance the overall quality of care for the patient.

PDB107
RELATIONSHIPS BETWEEN SOCIO-DEMOGRAPHICS AND HEALTH RELATED QUALITY OF LIFE AMONG DIABETES PATIENTS IN THE UNITED STATES
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OBJECTIVES: Earlier studies (Zang et al. 2008) in the field of diabetes identified that there is a significant relationship between the time before diagnosis and health outcomes. Our study aimed to identify whether there is a relationship between socio-demographics (e.g. insurance type) and Health Related Quality of Life (HRQoL). METHODS: A cross-sectional survey of diabetes patients (n = 1,480) living in the United States. Each patient completed a comprehensive questionaire, which included the EQ-5D-3L instrument and accompanying VAS. In addition to the EQ-5D-3L, instruments patients were also asked a series of questions to identify their socio-demographic background. By means of logistic linear regression modeling the health utility scores derived from the EQ-5D-3L instrument are linked to the socio-demographic background of the diabetes patients. RESULTS: The tested socio-demographics are significantly related to HRQoL (p < 0.0001). Yet, together they explain only 10% of the variance in HRQoL. Insurance by Medicaid (b-value = -0.16) and employment (b-value = 0.13) were both significantly related to HRQoL (p < 0.0001). Household income (b-value = 0.253), insurance by Medicare (b-value = -0.16), and type of stroke (p-value = 0.0124) were less significantly related to HRQoL. CONCLUSIONS: The study reconfirms the relationship between insurance, employment and health outcomes among diabetes patients in the United States. Previous studies showed that these affect the access to care and medication management, but these are also likely to influence health outcomes in terms of HRQoL.

PDB108
THE USEFULNESS OF PATIENT TREATMENT SATISFACTION QUESTIONNAIRE (PTSQ) IN DIABETES MELLITUS (DM) PATIENTS
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OBJECTIVES: Treatment satisfaction is an important factor of quality of care, especially in treating chronic diseases such as DM. The goal of study was to test the usefulness of the new tool for assessing treatment satisfaction – Patient Treatment Satisfaction Questionnaire (PTSQ) in the population of type 2 DM (T2DM) patients. METHODS: 500 patients with T2DM on different basal-bolus insulin treatment were included in the study: mean age 61.8 ± 13.4 yrs, DM duration – 12.8 years; mean duration of insulin therapy – 5±1±3 yrs. 64.4% of patients exhibited hypoglycemia. PTSQ consists of five numerical rating scales, scored from 0 (extremely dissatisfied) to 10 (extremely satisfied): 4 core items – general treatment satisfaction, treatment effectiveness, treatment convenience and coping, and one additional item – side effects burden. Patients filled out the PTSQ and SF-36 during routine check-up. The construct validity of the PTSQ was proved by “known-group” comparison – correlations with SF-36 subscales. Cronbach’s alpha was used to estimate internal consistency. RESULTS: Items of the PTSQ were easy for the patients to read and understand. Patients needed 3-5 min to answer it, usually without assistance. The content of missing values was very low, all items were extensively satisfied with an ongoing insulin therapy. CONCLUSIONS: Thus, the PTSQ is a useful instrument to evaluate treatment satisfaction in the population of DM patients.

PDB109
EVALUATING THE RELATIONSHIP BETWEEN BODY MASS INDEX (BMI) AND HEALTH-RELATED QUALITY OF LIFE (HRQoL) OF PATIENTS WITH DIABETES MELLITUS
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OBJECTIVES: Only a few studies have reported how Body Mass Index (BMI) relates to the Health-Related Quality of Life (HRQoL) of diabetic patients in the US, and results of these studies are mixed. This study assessed the relationship between BMI and HRQoL in the general diabetes population. METHODS: The study used the US 2010 Medical Expenditure Panel Survey (MEPS) database. MODELS: Eligible patients were ≥18 years, with a diabetes diagnosis (CCC-250) and on at least one oral antidiabetic medication. HRQoL was calculated using SF-12 scores: 1 Physical Component Summary (FCS-12) and 2 Mental Component Summary (MCS-12). RESULTS: The general diabetes population had a mean of 50 and a standard deviation of 10, with higher scores correlating with better HRQoL (physical and mental health respectively). The main independent variable was BMI, categorized as follows: weight ≤ 18.0 kg/m²: 24.0-25.9 kg/m²: 25.0-29.9; obese BMI: 30.0-40.0 and morbidly obese BMI: > 40.0 kg/m² Multivariate