

Understanding the Treatment Attributes that Impact Medication-Taking Behaviors with Diabetes Therapies in People with Type 2 Diabetes: A Pragmatic Review

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BACKGROUND

- Consideration of an individual’s perspectives is important, given the wide range of available treatment options for type 2 diabetes (T2D)
 - Patient-centricity is a key component of diabetes care^{1,2}
- A wide range of attributes influence medication-taking behaviors (e.g. patient-, treatment-, or healthcare system-related factors)^{3–5}
- Medication-taking behaviors include treatment initiation, on-treatment adherence, and persistence or discontinuation

OBJECTIVE

- To conduct a literature review to identify studies directly linking the perspectives of people with diabetes (PwD) regarding treatment-related attributes of T2D medications with medication-taking behaviors

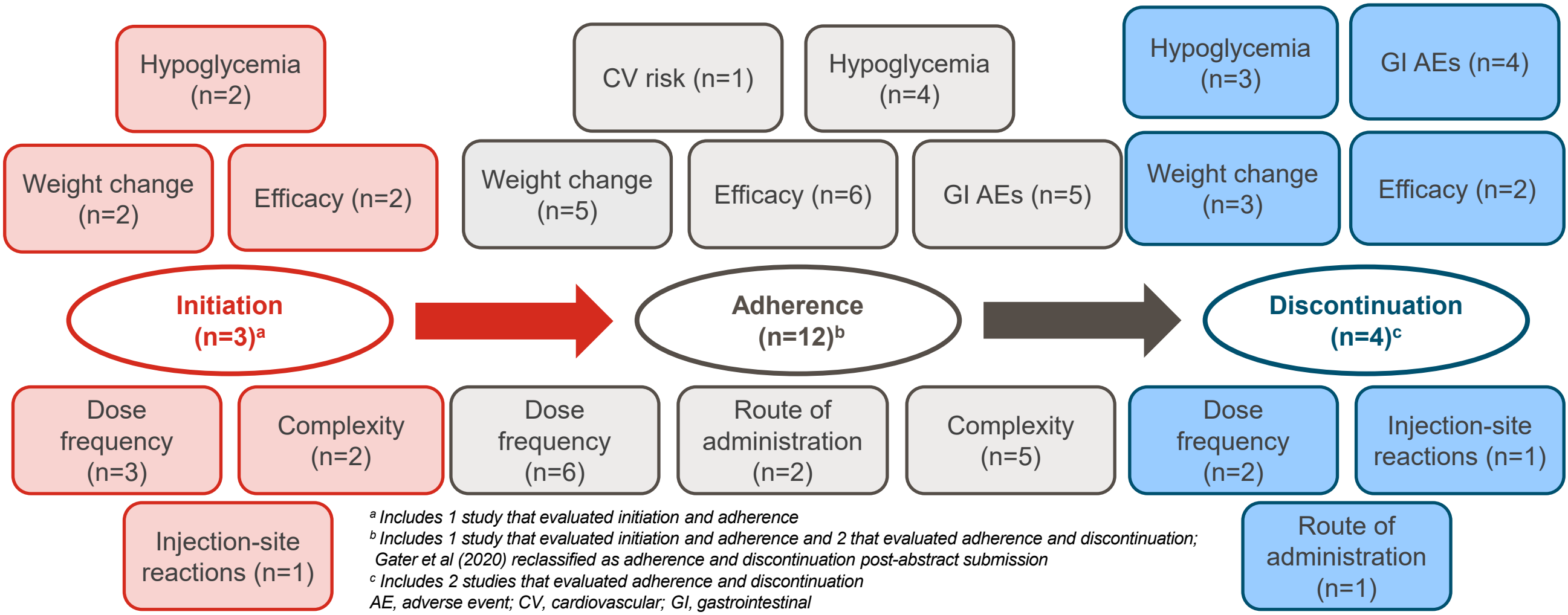
SEARCH RESULTS

- Review of 6464 abstracts resulted in identification of 117 potentially eligible records; 16 studies remained following full-text review
- Studies were conducted across multiple countries; USA most represented (n=8, including 3 multi-country studies)
- Medications studied included:
 - Injectable therapies (n=5)
 - Oral antidiabetes drugs (OAD) and/or injectables (n=4)
 - OADs (n=5)
 - Medication type unspecified (n=2)
- Multiple methods of data collection
 - Structured questionnaire (n=10)
 - Qualitative approaches (n=4)
 - DCEs (preferences linked to likelihood of taking medication) (n=2)
- Impact of attributes elicited via closed and open-ended questioning
- Number of study participants, 22–2173
- Similar mean age across studies
- ~45–60% male

OVERVIEW OF STUDY RESULTS

- Across studies, PwD indicated that a range of different attributes were motivators or barriers to treatment initiation, adherence, or discontinuation (**Figure 1**)
- Glycemic efficacy, weight change, and dose frequency were the most reported attributes influencing behaviors (n=9 studies each)
- Findings with respect to one attribute as an example, that of weight change, are shown in **Table 1**

RESULTS (FIGURE 1): TREATMENT ATTRIBUTES THAT INFLUENCE BEHAVIOR



CONCLUSIONS

- Several treatment-related attributes appear to play a role in how people with T2D take medications at different points of their treatment journey
- Comparison across studies was not possible due to differing study designs; furthermore, it is possible that attributes vary by PwD characteristics and previous experience
- The review represents a resource of data rather than a synthesis of results
- The findings further our understanding of medication attributes that impact treatment behavior and so:
 - Reinforce the importance of patient-centricity
 - Assist HCPs and PwD in making more informed treatment decisions
 - Facilitate development of strategies and interventions that better meet the needs of PwD to support medication taking

METHODS

- Literature search of PUBMED and EMBASE (Jan 2005 to May 2021), and recent congress abstracts, to identify English-language studies) reporting the link between PwD-expressed treatment-related attributes of T2D medications and their decision to initiate, adhere to, or discontinue a pharmacologic therapy (not insulin)
 - Perspectives came directly from adults (age ≥18 years) with T2D and not from a healthcare professional (HCP) or other individual
- Eligible study types: interview- or questionnaire-based studies, focus groups, surveys, qualitative research, patient diary studies, and patient preference or satisfaction studies
- Excluded studies: most discrete choice experiments (DCE) (unless the direct link between treatment attributes and medication-taking behavior were explored) and studies interrogating electronic medical records or claims databases
- Search had no geographic limits

RESULTS (TABLE 1): EXAMPLE OF RESULTS FOR ONE ATTRIBUTE (WEIGHT)

Medication-taking behavior	Weight change as a motivator or barrier to behavior
Initiation (n=2 studies)	37.4% pf PwD were “worried about AEs of injection therapy, such as hypoglycemia and weight gain ” as a concern regarding initiation of therapy ⁶ 55.1% of PwD very/extremely likely to be willing to take an injectable medication if it “ could help you lose weight ” and 51.5% if it “ could help you to avoid weight gain ” ⁷
Adherence (n=5 studies)	13.9% of PwD agree/strongly agree with the belief that taking OADs regularly “would lead to my gaining weight,” the only belief studied that was associated with reduced adherence (p<0.01) ⁸ In a qualitative study, weight loss was a motivation for the continued use of metformin ⁹ Medication-related weight gain was significantly associated with the likelihood of missing/skipping OAD doses ; a weight gain of 9.0 kg decreased the rate of likely adherence by 30% ¹⁰ 24% of PwD cited AEs (including weight gain) and 19% cited medication concerns (including weight worry) as barriers to adherence with injectable medication ¹¹ 16% of PwD cited weight loss as a reason for willingness to continue treatment with a dual GLP-1/glucagon RA ¹²
Discontinuation (n=3 studies)	18% of PwD who discontinued OAD/injectable treatment due to side effects did so because of weight gain ¹³ 25% of PwD discontinued GLP-1 RAs because treatment “ did not help weight loss ” and 8% because they “ caused weight gain ” ¹⁴ 20%/28% of PwD cited AEs (including weight gain) and 4%/11% cited medication concerns (including weight worry) as main/contributory reason for discontinuation of injectable therapy ¹¹

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AE, adverse event; GLP-1, glucagon-like peptide 1; OAD, oral antidiabetes drug, PwD, people with diabetes; RA, receptor agonist