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BACKGROUND AND OBJECTIVES

Oral anticoagulants (OACs) are commonly prescribed to patients with atrial fibrillation (AF) to decrease their risk of stroke and other embolic events.¹ Patients who use OACs commonly report experiencing patient-relevant bleeding events, which include any types of bleeding or bruising that do not require medical intervention but are concerning to patients [see Box 1]. Although these events often occur as a side effect of OAC use in patients with AF and atrial flutter, there are currently no patient-reported outcome (PRO) measures to assess their burden on patient health-related quality of life (HRQoL) and effect on OAC adherence. This research sought to develop the Anticoagulant Bleeding Burden Adherence Confidence Assessment Scale (ABBA-CAS), a de novo PRO measure, to address this important gap in measurement tools.

METHODS

A targeted literature review was conducted to identify the impacts of patient-relevant bleeding events on patient HRQoL. These impacts formed the basis of a draft conceptual model. Five experts, including clinician and patient stakeholders, provided feedback on the conceptual model, which was then revised. The conceptual model served as a foundation for developing items for the draft ABBA-CAS. The measure was developed based on concepts from the conceptual model, a review of other PROs in similar conceptual spaces, Lumanity's expertise on PRO design, and clinical expertise from Anthos Therapeutics. The draft measure was then shared with the five experts who previously reviewed the conceptual model and updated based on their feedback and input from Anthos Therapeutics. The ABBA-CAS was then evaluated for readability, using the New Dale-Chall Readability formula² and Flesch-Kincaid formula.

Box 1

- Nosebleeds

- Heavy periods • Easy bruising of the skin

Though not life-threatening, patients who experience these types of bleeds have reported impacts on their appearance, emotional distress, as well as an overall decrease in HRQoL.^{3,4} Further, these patient-relevant bleeding impacts have been associated with medication adherence issues, despite the overall clinical benefit of OACs.^{1,5}

Figure 1

HRQoL



Development of the Anticoagulant Bleeding Burden Adherence Confidence Assessment Scale (ABBA-CAS)

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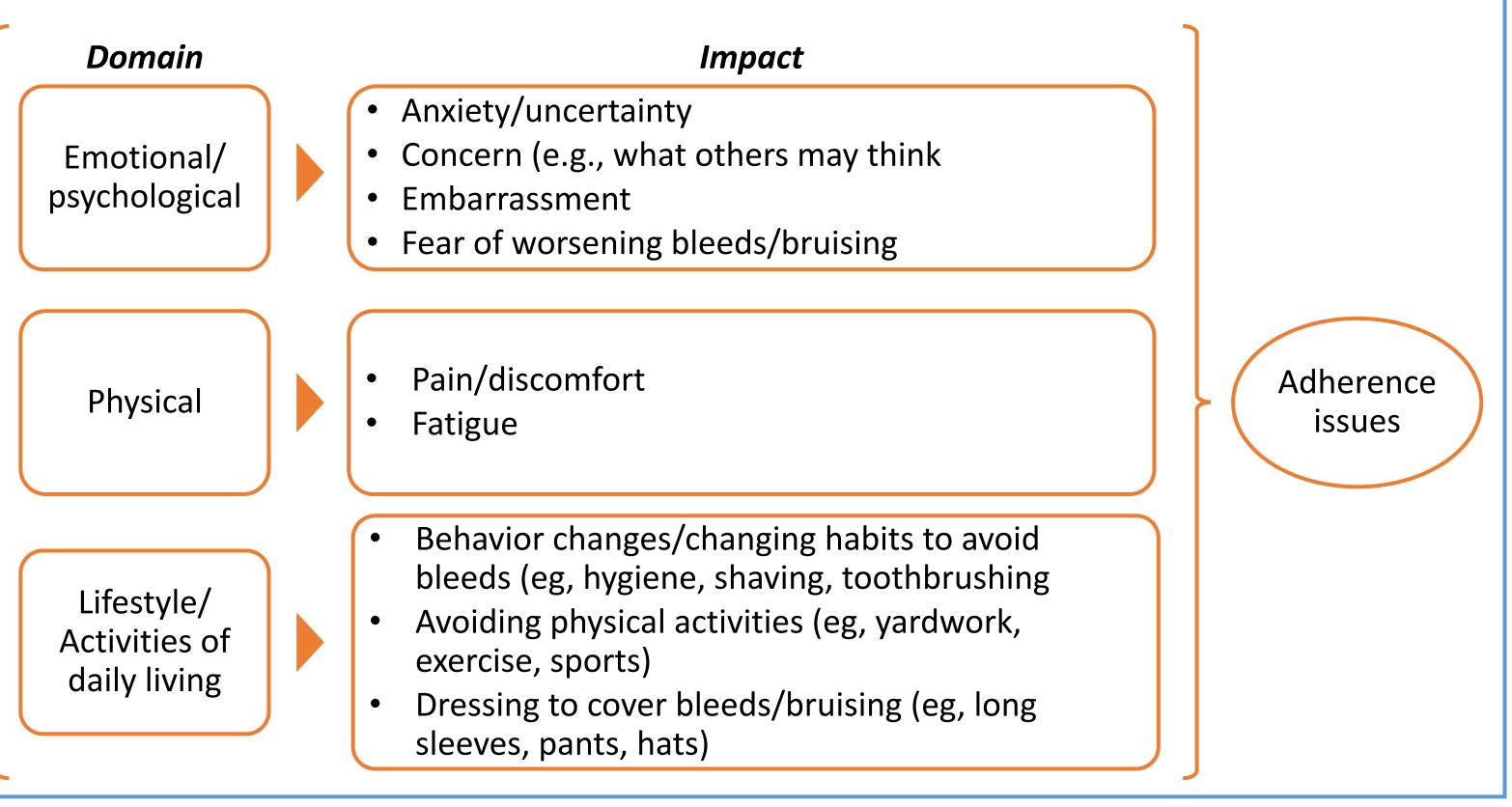
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What is a patient-relevant bleeding event?

Bleeding or bruising events that do not require medical intervention but are bothersome to patients. Examples may include:

- Gum bleeding
- Blood in stool

Conceptual Model: Impact of patient-relevant bleeding events on HRQoL



Concepts included in the ABBA-CAS v1.0

• Frequency of bleeding or bruising

- Frequency and severity of pain and physical discomfort caused by bleeding or bruising – Concepts included: pain, discomfort
- Frequency and severity of emotional and lifestyle/ADL impacts caused by bleeding or bruising - Concepts included: daily hygiene/grooming activities, physical activities, social activities, changes in clothing choices, embarrassment/self-consciousness, anxiousness/worry, fear
- Frequency of participants' feelings that could lead to OAC adherence issues - Concepts included: taking OAC medication differently than prescribed, skipping doses of OAC medication

RESULTS

A high-level MEDLINE search via PubMed[®] yielded 38 articles; 5 of which were pulled for the full review. In addition, Anthos Therapeutics provided an additional 9 patient-based articles, of which 5 were pulled for review. Of the 10 articles reviewed, 5 included impacts related to patient-relevant bleeding events on patient HRQoL.^{3,6-8} Concepts reported in these 5 articles were extracted to inform a conceptual model consisting of 3 domains (ie, emotional/psychological, physical, and lifestyle/activities of daily living [ADL]) further delineated into 9 item-level concepts. The updated conceptual model is included in *Figure 1*.

The updated conceptual model, along with the results of a review of 10 PROs in similar conceptual spaces, served as the foundation for the draft ABBA-CAS. The draft ABBA-CAS was revised based on expert feedback, including updates to language to clarify instructions, specifying type of medication, adding examples of different types of bleeding and bruising, adding additional items related to adherence and reformatting item response options. Expert feedback led to changes to recategorization of impacts within domains and adding specificity to concepts.

The ABBA-CAS is an 18-item questionnaire with a 14-day recall period drafted to measure the frequency of bleeding or bruising; the frequency and severity of pain and physical discomfort caused by bleeding or bruising; the frequency and severity of emotional and lifestyle/ADL impacts caused by bleeding or bruising; and the frequency of participants' feelings that could lead to anticoagulant adherence issues [see Box 2]. New Dale-Chall readability results identified potentially difficult words in ABBA-CAS items and instructions. The overall US Flesch-Kincaid grade level of the ABBA-CAS v1.0 was 9.26.

CONCLUSIONS

The ABBA-CAS v1.0 was developed to measure the impact of OAC-related patient-relevant bleeding events on HRQoL and OAC adherence in AF and atrial flutter patients with reference to Food and Drug Administration (FDA) guidance⁹ for the development of clinical outcomes assessments.

Hybrid concept elicitation and cognitive debriefing interviews with up to N=30 participants with AF or atrial flutter who experience patient-relevant bleeding events are currently being conducted to evaluate the content validity of the draft ABBA-CAS; difficult words identified via the readability assessment will be further explored as part of these interviews. Following the first 15 interviews, an interim analysis will be conducted to identify any modifications that need to be made to the draft ABBA-CAS, before continuing with the remaining 15 interviews. Once the draft ABBA-CAS is tested with participants, the PRO measure will be further refined based on interview results, as needed. Ultimately, the revised version of the ABBA-CAS will be fielded in an observational study where scoring and psychometrics will be evaluated.

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ABBREVIATIONS

ABBA-CAS, Anticoagulant Bleeding Burden Adherence Confidence Assessment Scale; ADL, activities of daily living; AF, atrial fibrillation; FDA, Food and Drug Administration; HRQoL, health-related quality of life; OAC, oral anticoagulant; PRO, patient-reported outcome.

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