Understanding unmet needs related to unintentional non-adherence in patients with heart disease

Rapid review of existing evidence to inform patient-centered interventions

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Background

Patients with heart disease require long-term treatment and clinical supervision to successfully manage their condition. However, medical treatment regimens are not consistently followed by patients, which compromises their health and long-term outcomes. Medication non-adherence is associated with human and economic cost and results in approximately 200,000 deaths annually, and €80–125 billion of both direct and indirect costs in the European Union (European Commission, 2011). According to a systematic review, the annual economic cost of medication non-adherence for specifically cardiovascular diseases in the US, including pharmacy costs, medical costs and outpatient costs, ranged from $3347 to $19472, with a mean adjusted cost of $9204 per annum per person (Cutler et al., 2018). Non-adherence can be driven by a multitude of intentional (e.g., beliefs) or unintentional (e.g., forgetfulness) factors. This rapid review explores the prevalence of unintentional non-adherence among patients with heart disease and identifies patients' needs in terms of addressing unintentional non-adherence to treatment of heart disease.

Methods

A rapid review was conducted on PubMed database to identify articles that described the characteristics of unintentional non-adherence in the patient population with heart disease. Search terms, used in combination, included "unintentional", "non-adherence", and "heart disease". The main criteria for inclusion of articles was the relevance to the research topic i.e., unintentional non-adherence specifically in patients with heart disease. Abstracts of all 11 articles from the search result were reviewed and screened for relevance and against the inclusion criteria. Among the 11 articles that were listed, 5 articles were found relevant and were reviewed in-depth to find emergent themes. 6 articles were rejected because they did not have provide adequate data on non-adherence that was "unintentional" or if the patient population was not patients with heart disease. A data extraction sheet on MS Excel was utilized to analyze and organize each article's methodology, population, country, unintentional non-adherence themes, and description of population characteristics associated with unintentional non-adherence.

Results

Unintentional non-adherence is common among patients with heart disease with patients reporting unintentional reasons for not following a treatment regimen or adhering to routine medication administration (> 80%). This includes passive processes such as forgetfulness, poor communication with clinicians and misunderstanding regimen instructions, financial constraints to purchase medication, and lack of availability of medication for refilling prescriptions (**Figure 1**). Overall, this review demonstrated that unintentional non-adherence was more prevalent than intentional non-adherence in this patient population. Mentz et al. (2018) and Khatib et al. (2019) found that unintentional non-adherence was associated with patients of younger age. Additional demographic characteristics were male patients and those who were in separated relationships (Mentz et al., 2018). Perceived stress affecting this patient population was also associated with both unintentional and intentional adherence (Mentz et al., 2018). Park et al (2020) found that concern over medications was also associated with unintentional non-adherence. Regarding medication administration, taking multiple chronic medications at different administration times (e.g., having to take medication both at day and evening) was also linked with unintentional non-adherence (Pettersen et al., 2018). Furthermore, the medication type played a role (Mentz et al., 2018 & Khatib et al., 2019). Types of medication commonly mentioned in the context of unintentional non-adherence are described in **Figure 2**. Molloy et al (2014) observed that unintentional non-adherence increased approximately 3.5 times during the first 6 months post-discharge, which emphasizes a need to focus on addressing long-term unintentional non-adherence within this time period.

Themes	References
Forgetfulness Driven by (a) needing to take medications during different times of the day (b) underlying medical beliefs related to perceived need and importance of medication (c) lack of motivation to take medication	Mentz et al., 2018 Khatib et al., 2019 Park et al., 2020 Pettersen et al., 2018
Poor communication with the medical team and misinterpreted regiment instructions	Pettersen et al., 2018 Cosh et al., 2022
Financial constraints to purchase medication	Mentz et al., 2018 Khatib et al., 2019
Lack of availability of medicine	Mentz et al., 2018 Khatib et al., 2019

Figure 1. Key themes presented in existing literature for unintentional non-adherence among patients with heart disease and
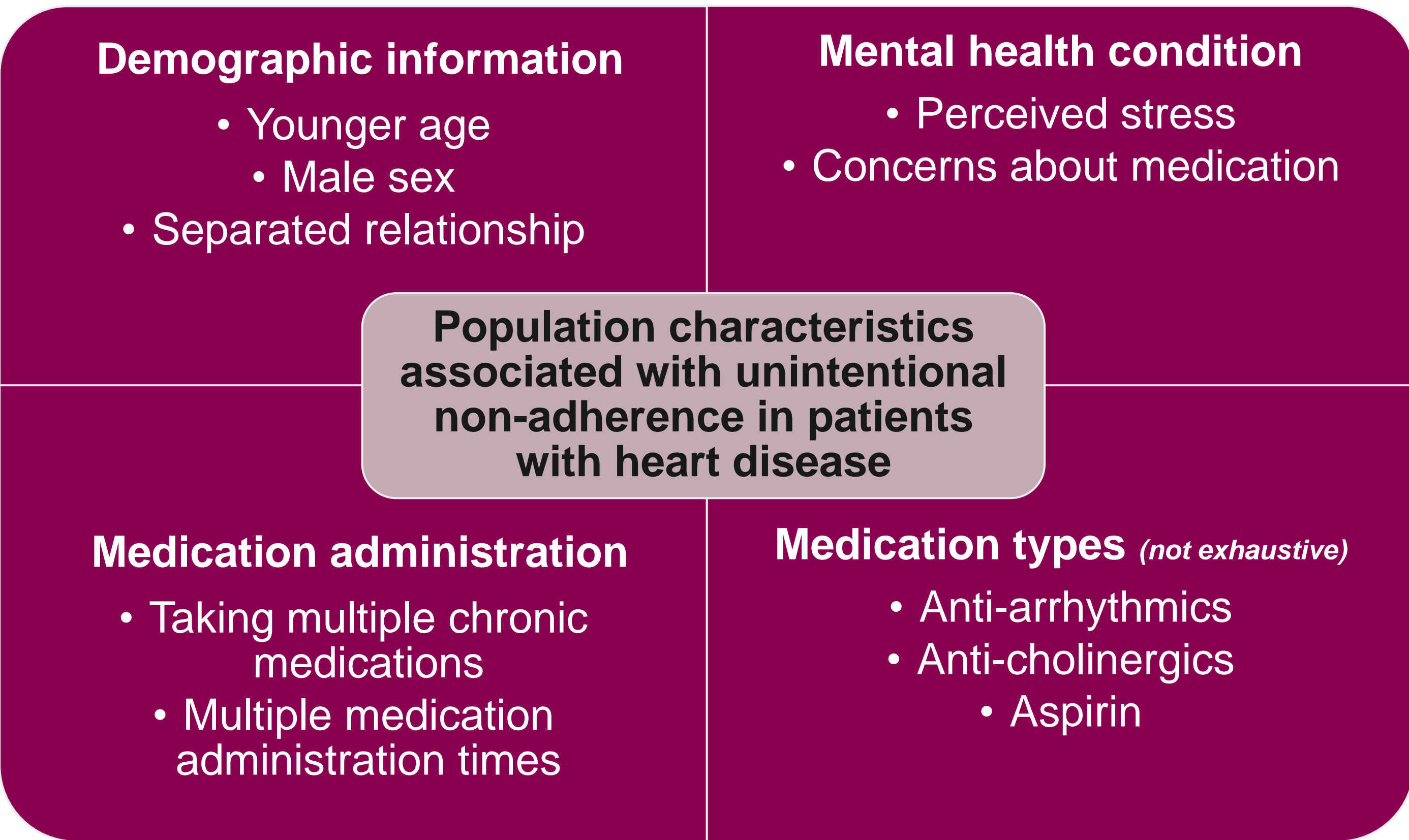

Figure 2. Population characteristics, found in existing literature, that are associated with unintentional non-adherence in the patient population.

Conclusion

- Understanding the patients' perspective and the underlying reasons for the unintentional aspects of non-adherence could facilitate the development of relevant, tailored, and improved interventions and/or doctor-patient communication at varying stages of treatment.

- Early interventions to address non-intentional adherence might be beneficial to establish appropriate daily routine and habit development.

- The reviewed studies showed that there is an overlap between unintentional and intentional adherence (e.g., those who were not motivated to take their medication were more likely to forget), thus emphasizing the multifactorial aspects of non-adherence.

- Better understanding of this patient population's beliefs and experiences about their medicines, administration processes, and the quality of clinician communication could, in turn, facilitate the improvement in patient treatment adherence.

REFERENCES

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