An integrative review of fatigue in adults with type 2 diabetes mellitus: Implications for self-management and quality of life

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Introduction:

People with type 2 diabetes mellitus (T2DM) experience various symptoms that are likely to worsen mental and physical well-being. Fatigue, a subjective feeling of tiredness, is one of the most prevalent symptom that likely hinders diabetes self-management and quality of life for adults with T2DM.

Purpose:

The purposes of this integrative literature review were:

1. To examine the socio-demographic, physiologic, and psychosocial factors related to fatigue
2. To explore the associations among fatigue, diabetes self-management and quality of life in adults with T2DM

Methods:

\begin{itemize}
  \item A review of the literature published from inception to December 2020
  \item Searched databases: PubMed, PsycINFO, and CINAHL (Figure 1)
  \item Inclusion criteria: studies that recruited adults with T2DM, were peer-reviewed, were written in English, and investigated fatigue as a primary or secondary outcome
  \item Exclusion criteria: Studies that included people with type 1 diabetes, gestational diabetes, or pancreatogenic diabetes, review articles, commentaries, letters to editors, and unpublished manuscripts
  \item Search Terms: “type 2 diabetes” OR “type ii diabetes” AND “adults” AND “fatigue”
  \item Two investigators independently appraised the quality of the studies using the Joanna Briggs Institute (JBI) critical appraisal tools and extracted the data
\end{itemize}

Conclusions:

\begin{itemize}
  \item Most studies examined physiological factors related to fatigue using a cross-sectional design
  \item Research demonstrates significant relationships between fatigue and self-management and quality of life in adults with T2DM
  \item Gaps in the literature include the multiple dimensions of fatigue, effective of interventions (e.g., sleep interventions) to alleviate fatigue, and unique experiences of fatigue in under-represented populations.
\end{itemize}

Results:

\begin{itemize}
  \item Twenty-nine high-quality articles met the inclusion criteria
    \begin{itemize}
      \item Observational studies: 23
      \item Experimental studies: 2
      \item Qualitative studies: 3
      \item Quasi-experimental study: 1
    \end{itemize}
  \item Participants were predominantly middle-aged or older adults (range from 40 to 82); non-Hispanic White and Black were the most studied
  \item Most studies measured fatigue using the Multidimensional Fatigue Inventory (n = 6) and 8 other measures
  \item Socio-demographic (e.g., sex, education, social support), physiological (e.g., T2DM duration, complications, inflammatory biomarkers), and psychological factors (e.g., diabetes distress, depression, sleep quality) were related to fatigue in adults with T2DM.
  \item Fatigue was negatively associated with both diabetes self-management and quality of life
\end{itemize}

Figure:

\begin{itemize}
  \item Reasons for exclusion:
    \begin{itemize}
      \item Primary outcome not fatigue (n = 122)
      \item Not type 2 diabetes (n = 121)
      \item Unpublished manuscript (n = 14)
      \item Not English (n = 15)
      \item Not adult (n = 4)
    \end{itemize}
  \item Reasons for exclusion:
    \begin{itemize}
      \item Primary outcome was not fatigue (n = 10)
      \item Not type 2 diabetes (n = 2)
    \end{itemize}
  \item Full-text articles assessed for eligibility (n = 41)
  \item Studies included (n = 29)
\end{itemize}

Figure 1. The PRISMA flow diagram of the study selection process