Medication Adherence and Health Beliefs Among Patients With Hypertension: A Systematic Review

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Presentation Outlines

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Background

• **HTN is a prevalent health concern**
  • affects about 40% of the world’s population aged 25 years and older

• **Effective HTN management**
  - Patients’ health outcomes (e.g., BP control, complications risk reduction)
  - In overall health care (e.g., cost reduction)

Alwan, 2011; Blood Pressure Lowering Treatment Trialists' Collaboration et al., 2013; Matsumura et al., 2012; Simon-Tuval, Triki, Chodick, & Greenberg, 2016
Proper adherence to antihypertensive medications is only 50% or less.

Beliefs about health, illness, and treatment are significant predictors of medication adherence in patients with various chronic illnesses.

Understanding before implementation of strategies to improve adherence to antihypertensive medications.

References:
World Health Organization, 2013; Gellad, Grenard, & Marcum, 2011; Jackson, Clatworthy, Robinson, & Horne, 2010; McDonald, Garg, & Haynes, 2002; Morrison, Wertheimer, & Berger, 2000; Schroeder, Fahey, & Ebrahim, 2004;
In HTN Management:

• Understanding *patient’s beliefs* in relation to medication adherence is fundamental.

• *Misperceptions* about HTN, its severity, and the significance of its management that could influence their *adherence to antihypertensive medication*.
Literature

- **Two** reviews focused on barriers to antihypertensive medication adherence
  - But: *very limited studies concerning beliefs* as possible barriers

- **Another** review focused on examining patients’ beliefs on HTN and medication adherence
  - But: this was a *review of qualitative studies* and excluded findings from quantitative studies.

AlGhurair, Hughes, Simpson, & Guirguis, 2012; Khatib et al., 2014; Marshall et al., 2012;
Literature

• Over the past decades, several quantitative studies have found that various beliefs held by patients influence medication adherence

• nevertheless, we identified no reviews summarizing and synthesizing these studies’ findings.

Ambaw, Alemie, W/Yohannes, & Mengesha, 2012; Bhandari, Sarma, & Thankappan KR, 2011; Cummings, Kirscht, Binder, & Godley, 1982; Forsyth, Schoenthaler, Chaplin, Ogedegbe, & Ravenell, 2014; Hashmi et al., 2007; Morrell, Park, Kidder, & Martin, 1997
Objective

To explicitly identify different HTN-related health beliefs and to examine the relationship between these beliefs and medication adherence.

• will guide the development of effective strategies to enhance medication adherence by incorporating patients’ specific beliefs and perspectives into patient-centered treatment plans.
Methodology

- Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines

- 4 electronic databases (PubMed, CINHAL, EMBASE, and PsychInfo)

- Restricted to English, peer-reviewed, and full text research articles.
Inclusion Criteria:
- Quantitative
- HTN taking at least one antihypertensive medication who were \( \geq 18 \) years.
- Patients’ beliefs
- Measured medication adherence as an outcome variable

Exclusion:
- HCPs’ beliefs
- Subjects with concomitant morbidities in addition to HTN
1,388 articles identified through database searching

- 346 duplicates

1,042 articles titles and abstracts screened

- 809 articles excluded

233 full text articles assessed for eligibility

- 208 full text articles excluded:
  - 6 were books, not research articles, dissertation.
  - 8 were not in English.
  - 79 addressed other comorbidities.
  - 53 did not measure medication adherence, but measure adherence to other therapeutic behaviors.
  - 27 did not address patients’ beliefs or perception.
  - 8 measures adherence of other medications with antihypertensive medications.
  - 4 not full text-articles
  - 8 instrument development
  - 8 did not measure adherence as an outcome variable.
  - 7 qualitative study

25 studies included in the final analysis
Findings: **Studies Characteristics**

✧ Appeared from 1980–2016

✧ Sample sizes: 45–1,367 (total of 6,696), $M_{\text{age}} = 42–75$ years

✧ **14 countries**: Canada, Brazil, South Africa, Northern Ireland, Malaysia, the Netherlands, Taiwan, India, Peru, Iran, the UK, Australia, Nigeria, and US
Findings: Studies Characteristics (Cont..)

- Cross-sectional: 96%
- One measure of adherence: 92%
- Self-report Measure: 92%
- Theoretical Model: 36%

Morisky Scale (36%)
Findings: **Relationship between Beliefs and Medication Adherence**

**Beliefs Categories**

- **Beliefs about HTN**
- **Beliefs about antihypertensive medications**
- **Other Patient-related Beliefs**

- 31% Beliefs about HTN
- 44% Beliefs about antihypertensive medications
- 25% Other Patient-related Beliefs
Findings: **Relationship between Beliefs and Medication Adherence**

Beliefs about HTN (N=9)

- **Beliefs about HTN Severity**
  - Positive Relationship: 3
  - No Relationship: 4
  - Negative: 0

- **Beliefs about Susceptibility**
  - Positive Relationship: 2
  - No Relationship: 4
  - Negative: 1
Findings: **Relationship between Beliefs and Medication Adherence** (Cont..)

**Beliefs about Medications (N=16)**

- Positive Relationship
- No Relationship
- Negative Relationship

**Beliefs about Safety of medication (n=2)**

**Beliefs about Necessity of medication (n=3)**

**Beliefs about Effectiveness of medication (n=5)**

**Perceived Barriers (n=13)**

- Side Effects
- High Cost
- Bad taste

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Findings: **Relationship between Beliefs and Medication Adherence (Cont..)**

✧ Other Patient-related Beliefs related to **High medication adherence** (n = 11):

✧ Higher Self-efficacy  
*n=9*

✧ Perceived good general health

✧ Perceived good Control over HTN

✧ Perceived good Relationship with Spouse and Health care providers

✧ Perceived Strong Family support

✧ Perceived less stress
Review’s General Conclusion

• **Higher** medication adherence related to:
  1. **Fewer** perceived barriers
  2. **Higher** self-efficacy

• **No** relationship between beliefs of **necessity/effectiveness** of medications and Medication adherence

• **Mixed** findings in relationship between adherence and HTN severity and susceptibility
Limitations: Findings

- Majority of the studies used *cross-sectional design with non-probability sampling*, which limits causal relationships and generalizability.

- Majority of studies used *self-report measures* of medication adherence, which could introduce recall bias and overestimation of medication adherence.

- These studies also used *different defining criteria* for medication adherence.

*Therefore, future studies need to measure and define medication adherence objectively and consistently.*
Limitations: Review

- This review is at risk for selection and reporting bias due to the possibility of missing some relevant studies.

- Limited to patients with HTN who did not have any concomitant comorbidity.

- Publication bias.

- Studies of poor quality were included in reporting this review’s findings.
Implications: Practice

- HCPs should be *aware of and assess beliefs about HTN* and *medications* while caring for patients with HTN across different cultures and age groups.

- Unlike some demographic factors (e.g., age, race, gender), *patients’ health beliefs are modifiable* and could be tailored to match individual preferences or cultures.

- This necessitates *early identification and incorporation of beliefs in designing effective interventions* to foster medication adherence by reducing barriers to taking medications and maximizing positive beliefs about HTN and medications benefits.
**Implications: Research**

**Future studies should focus on**

- Measuring adherence using more *objective measures* and a *longitudinal design* to assess long-term adherence behaviors and changes over time.

- *Examining HTN severity and susceptibility to consequences and medication adherence* because our review showed mixed findings.

- Include more articles published in other search databases and in *non-English languages, including thesis and dissertations.*
References


Thank you