

Don't assume the patient understands: A systematic review of interventions to improve medication information for the low health literate population

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Background

Health literacy is a barrier to accurately understanding medication information and is essential for individuals to confidently understand, act and communicate personal medical needs to maintain good health. On average, individuals with low health literacy can read at a fifth-grade level, while medication information tends to be presented in a manner targeted for individuals who can read at a tenth grade level. With current medication information too difficult to understand, low health literate populations are at a higher risk of misinterpreting prescription label instructions, dosage, duration, frequency, warning labels, written information and verbal pharmacist counseling. For this reason improving the safety of patients with low health literacy is a primary goal and therefore indicates the immediate need to develop effective solutions to improving medication information for this population.

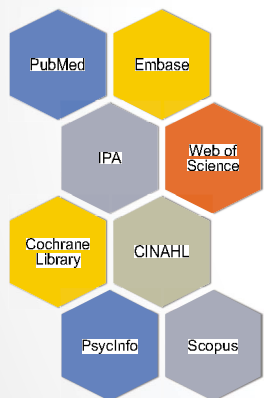
Objective

To systematically review the evidence on interventions for improving medication knowledge and adherence for low health literate populations.

Methods

Figure 1: Database search strategy

Figure 2: Inclusion criteria

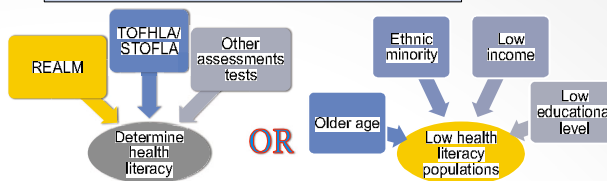


Databases were searched from the start of each database to studies published before March 30, 2015. A combination search strategy, using the words medication adherence, health literacy and medication information with the corresponding MeSH terms was used.

- Primary outcome measure**
- Medication knowledge
 - Medication adherence
- Secondary outcome measure**
- User experience and patient preference
 - Clinical outcome measures



Figure 3: Determining health literacy levels



Results

Figure 4: Systematic Review Flow Chart

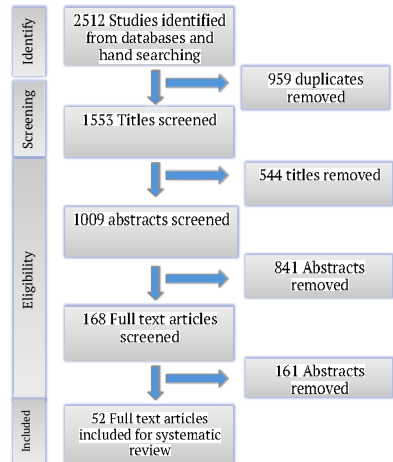
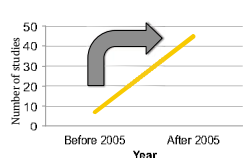
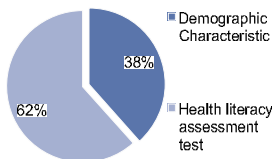


Figure 5: Publication year of interventions



Significant rise in studies focused on improving medication information of low health literate population after the year 2005

Figure 6: Health literacy assessment tools



To confirm the use of demographic characteristics of age, ethnicity, income and/or education as a method of determining health literacy, we evaluated the inclusion of these demographics in the 32 studies that used a health literacy test such as the TOFHLA/STOFLA and REALM. Results in all studies demonstrate that at least two demographic characteristics were present in the low health literate population.

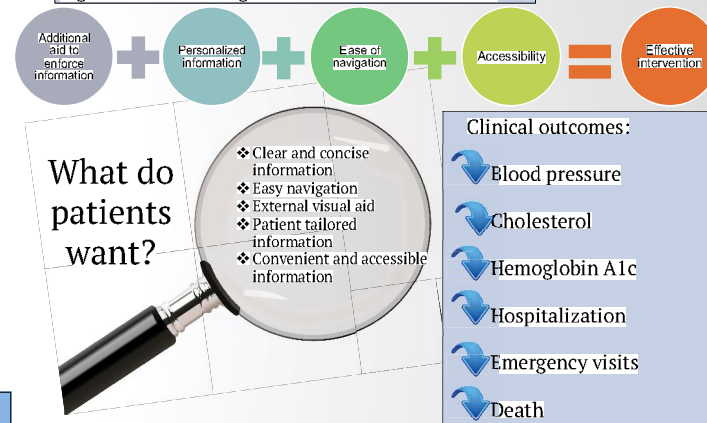
Results Continued

Table 1: Six categories of medication information interventions

Interventions	Description	Examples
1. Written Information	Information expressed in writing	Patient information leaflet
2. Visual information	Information expressed with picture elements	Pictogram
3. Audible/verbal information	Information that expressed in spoken words	Counseling
4. Label information	Information expressed on medication bottle	Simplified medication instructions
5. Reminder systems	Serves to remind patients about important medication information	Automated telephone reminder
6. Educational programs/Service	A plan or schedule of action for a specific period of time	Pharmacy based program

After all interventions were coded using NVivo 10 qualitative software, six different categories of medication information intervention emerged. All six categories of medication information demonstrated that majority of interventions statistically improved knowledge and adherence.

Figure 7: Four strategies of effective interventions



Conclusions

This systematic review demonstrates that interventions targeted towards the low health literate population are a beneficial tactic to improving patient's knowledge and adherence. Specifically, the strategies for an effective medication information intervention are to provide additional aid to enforce information and to personalize, easily navigate through and access information.

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