Effects of health literacy on patients engagement: A cross-sectional study in China

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Background: Health literacy in China

◆ The concept of health literacy was introduced in China in 2005.
◆ Government announcement: Chinese citizens' health literacy—basic knowledge and skills.
◆ Nationwide survey on health literacy in China.

◆ The overall level of health literacy among the Chinese was 6.48%.
◆ The literacy of science health concepts, safety and emergency, preventing acute infectious disease, obtaining and making use of basic medical care, preventing noncommunicable chronic disease among the Chinese residents were 29.97%, 18.70%, 15.86%, 7.43%, 4.66%.

**Background:** the impact of low health literacy

- **Patients with low health literacy may have difficulty in:**
  - Locating providers and services
  - Filling out complex health forms
  - Sharing their medical history with providers
  - Seeking preventive health care
  - Knowing the connection between risky behaviors and health
  - Managing chronic health conditions
  - Understanding directions on medicine

-- Bautista et al, 2009; Al Sayah et al, 2015
Background: patient engagement

◆ Research questions:
1. What are the factors influencing patient engagement?
2. How do these factors affect patient engagement?

◆ Objectives:
1. to find out the factors influencing patient engagement;
2. to elucidate how these factors influence patient engagement in healthcare.
Methods: Research framework

- Trust
- Attitude
- Support from physicians and families
- Health literacy
- Self-efficacy

Willingness of engagement

Patient engagement

Theory of Planned Behavior, TPB
Methods: The Measure of Health Literacy

All Aspects of Health Literacy Scale (AAHLS)

- to measure functional, communicative and critical health literacy of patients
- the overall scale had adequate reliability (Cronbach’s $\alpha = 0.74$)

--Deborah Chinn et al, 2013
**Methods:** The Measure of Health Literacy

**All Aspects of Health Literacy Scale (AAHLS)**

- **approval**
- **translation & back-translation**
- **cultural adaptation**
- **pilot survey**
- **data analysis**

- The Cronbach’s 𝜂 coefficient was 0.811; the test-retest reliability coefficient was 0.853;
- The content validity index was 0.943;
- Three factors were extracted by factor analysis which could explain 61.275% of the total variance; confirmatory factor analysis confirmed a 11-item, three-factor model that well fitted the data.

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National Health and Family Planning Commission of the People’s Republic of China
**Methods:** Research design

- A cross-sectional design using a patient self-report survey was used in this study.
- The study was conducted in Shanghai, Jiangsu Province and Zhejiang Province in China.
- Eight general hospitals (convenience sampling):
  - 3 secondary hospitals
  - 5 tertiary hospitals
## Table 1: Demographic characteristics of participants \( n=514 \)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>( n )</th>
<th>%</th>
<th>Units</th>
<th>( n )</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td>Medical</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>315</td>
<td>61.3</td>
<td>Medical</td>
<td>255</td>
<td>49.6</td>
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<tr>
<td>Female</td>
<td>199</td>
<td>38.7</td>
<td>Surgical</td>
<td>259</td>
<td>50.4</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
<td><strong>Income per month</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary school</td>
<td>70</td>
<td>3.6</td>
<td>£ 1000</td>
<td>42</td>
<td>8.2</td>
</tr>
<tr>
<td>Junior high school</td>
<td>140</td>
<td>27.2</td>
<td>1000-3000</td>
<td>171</td>
<td>33.3</td>
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<tr>
<td>Senior high school</td>
<td>143</td>
<td>27.8</td>
<td>3001-5000</td>
<td>170</td>
<td>33.1</td>
</tr>
<tr>
<td>College/university</td>
<td>142</td>
<td>27.6</td>
<td>5001-10000</td>
<td>88</td>
<td>17.1</td>
</tr>
<tr>
<td>Graduation</td>
<td>19</td>
<td>3.7</td>
<td>£ 1000</td>
<td>43</td>
<td>8.4</td>
</tr>
<tr>
<td><strong>Residence</strong></td>
<td></td>
<td></td>
<td><strong>Pattern of payment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>City</td>
<td>281</td>
<td>54.7</td>
<td>Self-paying</td>
<td>91</td>
<td>17.7</td>
</tr>
<tr>
<td>County</td>
<td>82</td>
<td>16.0</td>
<td>Medical insurance</td>
<td>364</td>
<td>70.8</td>
</tr>
<tr>
<td>Town</td>
<td>60</td>
<td>11.7</td>
<td>Commercial insurance</td>
<td>8</td>
<td>1.6</td>
</tr>
<tr>
<td>Village</td>
<td>91</td>
<td>17.7</td>
<td>Free medical service</td>
<td>46</td>
<td>8.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Other</td>
<td>5</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>Past hospitalization experience</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 time</td>
<td>151</td>
<td>29.4</td>
<td></td>
<td>254</td>
<td>49.4</td>
</tr>
<tr>
<td>1-2 times</td>
<td>230</td>
<td>44.7</td>
<td>0 time</td>
<td>222</td>
<td>43.2</td>
</tr>
<tr>
<td>3-5 times</td>
<td>69</td>
<td>13.4</td>
<td>1-2 times</td>
<td>29</td>
<td>5.6</td>
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<tr>
<td>£ 5 times</td>
<td>64</td>
<td>12.5</td>
<td>3-5 times</td>
<td>9</td>
<td>1.8</td>
</tr>
</tbody>
</table>
### Results: Health Literacy & Patient Engagement

#### Table 1  Mean values of patient health literacy

<table>
<thead>
<tr>
<th>Variables</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>functional health literacy questions</td>
<td>2.255</td>
<td>0.375</td>
</tr>
<tr>
<td>communicative health literacy</td>
<td>2.610</td>
<td>0.439</td>
</tr>
<tr>
<td>critical health literacy</td>
<td>2.260</td>
<td>0.417</td>
</tr>
<tr>
<td>total health literacy</td>
<td>2.353</td>
<td>0.293</td>
</tr>
</tbody>
</table>
## Results: Health Literacy & Patient Engagement

Table 2: Association between overall health literacy score and education, gender and age in Pearson correlation analysis. $n=514$

<table>
<thead>
<tr>
<th>variables</th>
<th>functional literacy</th>
<th>communicative literacy</th>
<th>critical literacy</th>
<th>health literacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>willingness of engagement</td>
<td>0.140**</td>
<td>0.314**</td>
<td>0.340**</td>
<td>0.369**</td>
</tr>
<tr>
<td>patient engagement</td>
<td>0.151**</td>
<td>0.283**</td>
<td>0.313**</td>
<td>0.347**</td>
</tr>
</tbody>
</table>

**$P < 0.01$**
Results: Health Literacy & patient engagement
Conclusion: Health Literacy & patient engagement

◆ Patient health literacy posed indirect positive influence on patient engagement through the patients’ willingness of engagement.

◆ Health literacy is a necessity for increasing patient engagement in health care.

Limitations and Further study

◆ Possible pathways between health literacy, patient engagement and health outcome
Implication: Health Literacy & patient engagement

◆ **Hospital care:** improve patient health literacy through participation with mobile medical technology (APP and WeChat).

◆ **Healthy community:** both health educators, family doctors and nurses should help patients establish better health awareness, improve health literacy and better self-management in health care.

◆ **Healthy China 2030:** promoting citizens’ health literacy, improving patient engagement in health care, helps to achieve universal health coverage and access quality health care.
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