



# The development of certification integration in health promoting hospitals in Taiwan

---

Chiachi Bonnie Lee; Ying-Wei Wang; Shu-Li Chia; Chien-Ming Chou  
Michael S. Chen; Cordia Chu; Mei-Hsiu Wang; Erin Tsai



Title / Keyword

Journal

IJERPH

Author / Affiliation

Article Type

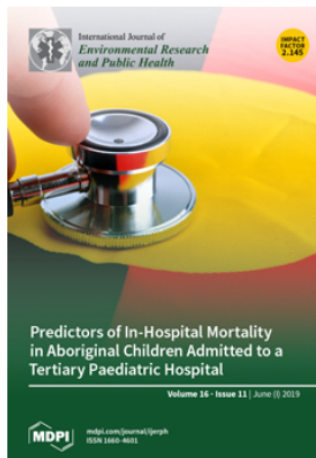
all

Advanced

Search

IMPACT  
FACTOR  
2.468

Volume 16, Issue 11



Views

415

Downloads

123

## Article Versions

- Abstract
- Full-Text PDF [1865 KB]
- Full-Text PDF With Cover

Open Access Article

## Development and Validation of a Self-Assessment Tool for an Integrative Model of Health Promotion in Hospitals: Taiwan's Experience

Ying-Wei Wang <sup>1,2</sup> , Shu-Li Chia <sup>1</sup> , Chien-Ming Chou <sup>1</sup> , Michael S. Chen <sup>3,4</sup> ,  
Jürgen M. Pelikan <sup>5,6</sup> , Cordia Chu <sup>7</sup> , Mei-Hsiu Wang <sup>8</sup> and Chiachi Bonnie Lee <sup>8,\*</sup>

<sup>1</sup> Health Promotion Administration, Ministry of Health and Welfare, Taipei 10341, Taiwan

<sup>2</sup> School of Medicine, Tzu Chi University, Hualien 97004, Taiwan

<sup>3</sup> Department of Healthcare Administration, Asia University, Taichung 41354, Taiwan

<sup>4</sup> Department of Social Welfare, National Chung Cheng University, Chiayi 62102, Taiwan

<sup>5</sup> CC Collaborating Centre for Health Promotion in Hospitals and Health Care, Gesundheit Österreich GmbH (Austrian Public Health Institute), 1010 Vienna, Austria

<sup>6</sup> Department of Sociology, University of Vienna, 1090 Vienna, Austria

<sup>7</sup> Center for Environment and Population Health, Griffith University, Brisbane 4111, Australia

<sup>8</sup> Department of Health Services Administration, China Medical University, Taichung 40402, Taiwan

\* Author to whom correspondence should be addressed.

*Int. J. Environ. Res. Public Health* **2019**, *16*(11), 1953; <https://doi.org/10.3390/ijerph16111953>

Received: 1 May 2019 / Revised: 26 May 2019 / Accepted: 30 May 2019 / Published: 1 June 2019

(This article belongs to the Section Health Behavior, Chronic Disease and Health Promotion)

Full-Text | PDF [1865 KB, uploaded 1 June 2019] | Figure

Submit to *IJERPH*Review for *IJERPH*

Edit a Special Issue



Falls in Older Adults:  
Risk and Prevention

Collection Editor  
Assoc. Prof. Vicki Mercer

- <https://www.mdpi.com/1660-4601/16/11/1953>

# Background

---

- International development of Health Promotion in Hospitals
  - The WHO HPH standards, 2001
  - The Updating HPH standards, 2017CHP, not yet officially adopted
  - HPH & Environment
  - HPH & Age-Friendly Health care
  - HPH & Patient and Family Engaged Health Care
  - HPH & Health Literate Health Care Organizations
  - Tobacco Free Healthcare Services

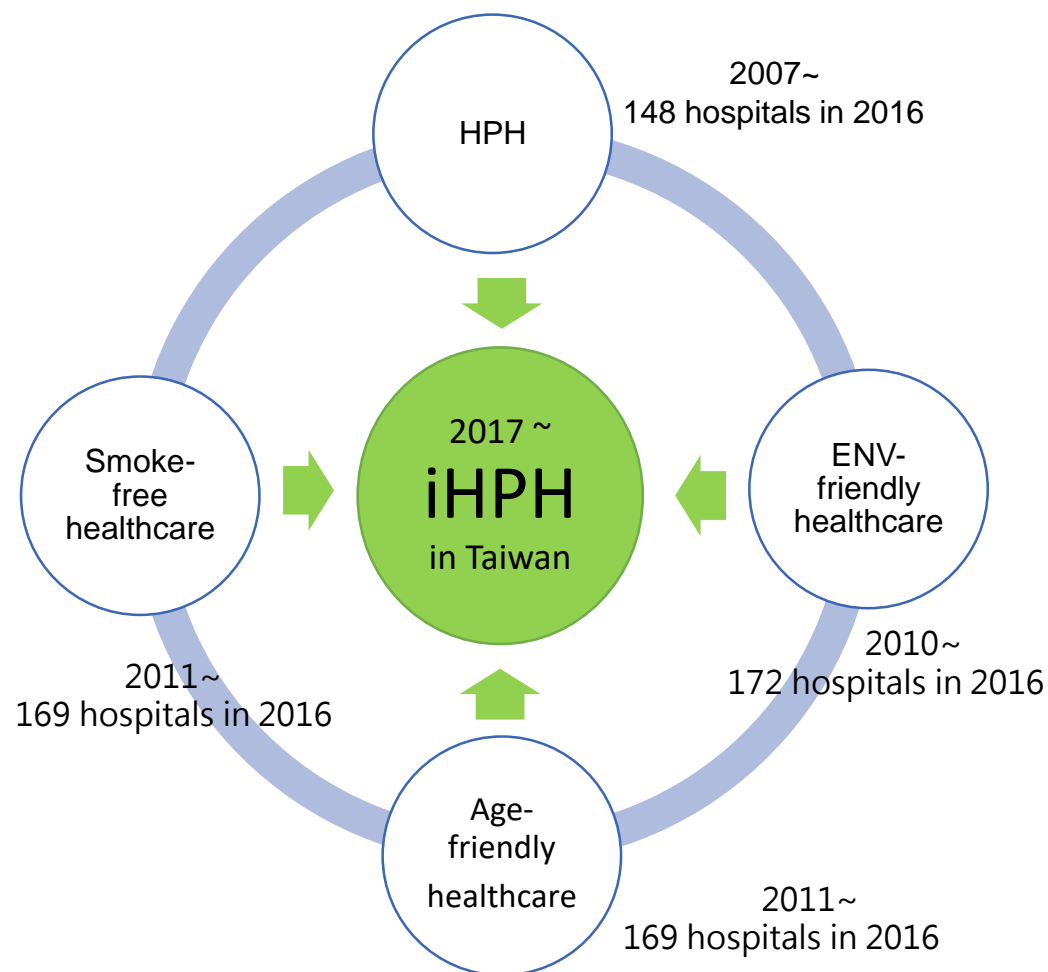
# Background

---

- Hospitals are suitable settings to implement health promotion among patients, staff and communities and to build low-carbon environments in Taiwan.
  - Reach a vast population because hospitals consumed 45.6 % of national health expenditure in 2017 (20.9% for inpatient and 24.7% for outpatient services)
  - over 50% of the causes of deaths in Taiwan were NCDs → require professional assistance for healthy lifestyle and adherence
  - an aged society in 2018 and will probably take only 8 years to become a super-aged society with more than 20% population over 65 years old by 2026
  - found high rates of occupational injuries and diseases among healthcare workers
  - 98% of the energy in Taiwan is imported, and Hospitals could save 6 to 10% of energy

# Background

- To use **certifiable management systems** (MSs) as a strategy to improve the quality of care by strengthening the structure of health organizations and processes of service delivery.
- **Challenges**
  - duplication and overlapping
  - burden the hospital staff with high paperwork load
  - difficulties in simultaneously administering multiple MSs
- A review demonstrated that the benefits resulted from **an integration approach** are greater than where individual MSs are considered in separation (Bernardo, 2015).



# Background

---

- Taiwan's HPA launched an integrative certification model and proposed a seven standard self-assessment tool for the certification integration of HPH (iHPH hereafter) at the end of 2016.
- A self–assessment form is regarded as a useful instrument for the standardization of health promotion in hospitals (Groene et al., 2010; Yaghoubi et al. 2018).

# Background

## Framework of iHPH standards

1. Policy and Leadership
2. Patient Assessment
3. Patient Information and Intervention
4. Promoting a Healthy Workplace and Ensuring Capacity for CHP
5. Implementation and Monitoring
6. Age-Friendly Healthcare
7. Environment-Friendly Healthcare



HPH & Environment

HPH & Health Literate Health Care Organizations

HPH & Patient and Family  
Engaged Health Care

HPH & Age-Friendly  
Health care

Tobacco Free  
Healthcare Services



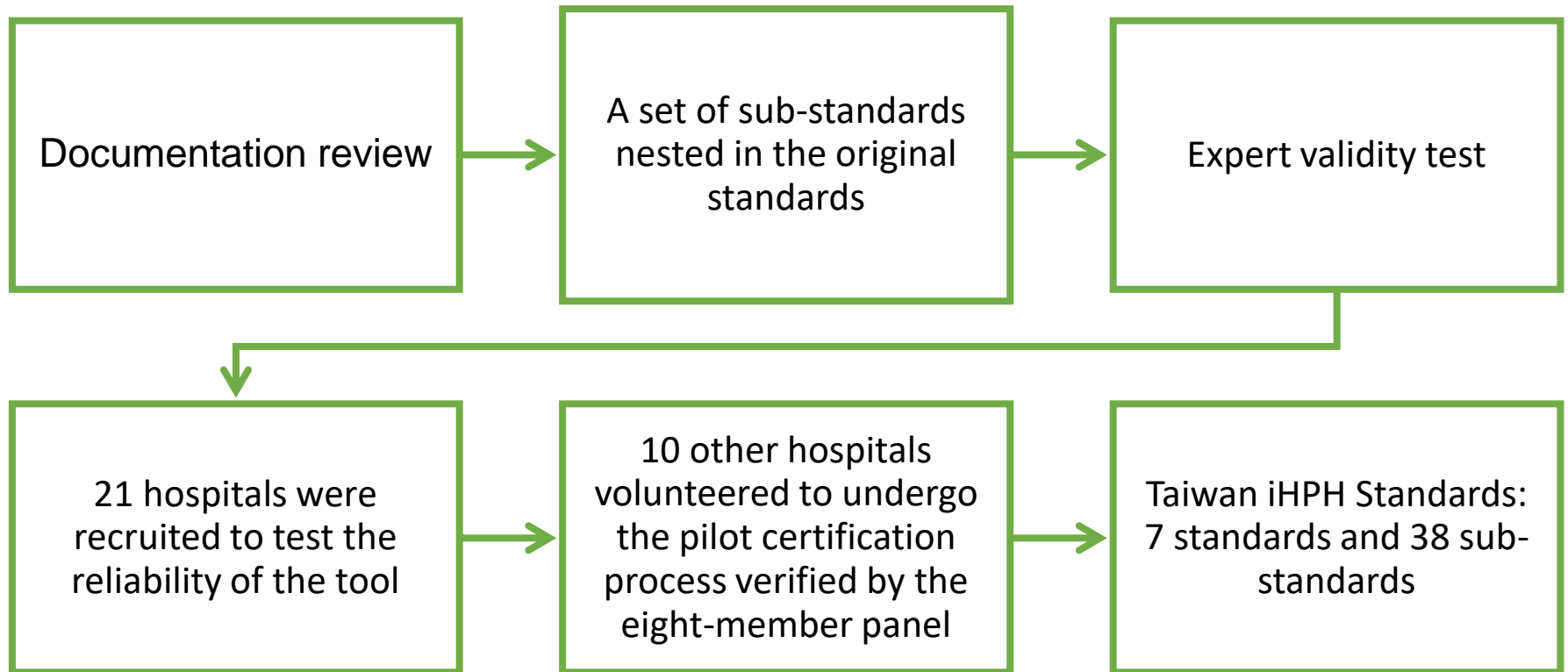
The updating HPH standards : 5 standards & 46 measures (sub-standards)

The WHO HPH standards : 5 standards & 40 measures (sub-standards)

# Background

---

- The development of Taiwan iHPH Standards





# Aims

---

1. ensure the factor structure of the seven standards, ceiling and floor effects, and internal consistency.
2. construct validity by analyzing the association between self- reported compliance scores and characteristics of a stratified sample of 46 hospitals.
3. these hospitals also offered their ratings on the importance, comprehensibility, and applicability of the measurable elements.

# Methods:

## Description of the Self-Assessment Tool

Taiwan's validated iHPH standards	The updating HPH standards	WHO-HPH standards
<ol style="list-style-type: none"> <li>Policy and Leadership (7 sub-standards) <ul style="list-style-type: none"> <li>(New)1.1.4The hospital prohibits the acceptance of donations and/or sponsorships from tobacco vendors and the sales of tobacco or e-cigarette products.</li> </ul> </li> <li>Patient Assessment (5 sub-standards)</li> <li>Patient Information and Intervention (11 sub-standards) <ul style="list-style-type: none"> <li>(New)3.1.7 The hospital promotes a <u>shared decision-making (SDM)</u> plan and provides a favorable communication environment for patients and their family members.</li> <li>(New)3.2.4 The hospital has a <u>health-literacy</u> promoting plan that aims to help patients obtain, comprehend, and apply information and services to improve their health and the provision of care.</li> </ul> </li> <li>Promoting a Healthy Workplace and Ensuring Capacity for CHP (4 sub-standards)</li> <li>Implementation and Monitoring (8 sub-standards)</li> <li>(New) Age-Friendly Healthcare (2→7 sub-standards)</li> <li>(New) Environment-Friendly Healthcare (1→4 sub-standards)</li> </ol>	<p>Cover 44 out of 46 sub-standards</p> <p>Deleted: 1.1.4 (a current member of the HPH Network by WHO )</p> <p>4.1.1 (working conditions comply with national/regional directives and indicators)</p>	<p>Cover 37 out of 40 sub-standards</p> <p>Deleted: 1.1.2 (reaffirm agreement within the past year to participate in the WHO HPH project)</p> <p>4.2.2 (staff in all departments are aware of the content of the org's HP policy)</p> <p>4.1.1 (working conditions comply with national/regional directives and indicators)</p>

# Methods:

## Description of the Self-Assessment Tool

- At least four variables per factor suggested in factor analysis.

Standards / Factors	Sub-standards	Measures	Sub-standards	Measures
<b>Standard 1:</b> Policy and Leadership	7	19	7	19
<b>Standard 2:</b> Patient Assessment	5	14	5	14
<b>Standard 3:</b> Patient Information and Intervention	11	37	11	37
<b>Standard 4:</b> Promoting a Healthy Workplace and Ensuring Capacity for CHP	4	12	4	12
<b>Standard 5:</b> Implementation and Monitoring	8	24	8	24
<b>Standard 6:</b> Age-Friendly Healthcare	2	7	7	By definitions
<b>Standard 7:</b> Environment-Friendly Healthcare	1	4	4	By definitions

# Methods:

## Description of the Self-Assessment Tool

### Standard 6: Age-Friendly Healthcare

6.1.1 Accessible facilities are available for people with mobility restrictions.

6.1.2 Environments adopt universal designs.

6.1.3 A healthy environment which takes into account the physical and mental impairments of elderly patients.

6.2.1 The administrative procedures are adjusted to take into account of the special needs of the elderly (patients or family members)

6.2.2 A favorable communication environment is established so that elderly patients and relatives can obtain information, thereby ensuring that older adults have the ability and the right to make their own medical decisions.

6.2.3 Assistance is provided to elders with financial difficulties, or make referrals so that elders (patients and family members) can receive suitable medical/care records and follow-up services.

6.2.4 A volunteer plan is available and effectively implemented to assist elders.

### Standard 7: Environment-Friendly Healthcare

7.1.1 Plans and records on annual energy and water conservation plans are available.

7.1.2 Plans and records on annual medical waste reduction plans are available.

7.1.3 Plans and records on annual green procurement plans are available.

7.1.4 Periodically reviews the progress and proposes improvement plans

# Methods:

## Description of the Self-Assessment Tool

---

- Measures
  - Standards 1-5
    - Sub-standards were composed of 2–5 items
    - 3 levels
      - “completely fulfilled” is defined as all items fulfilled;
      - “partly fulfilled” is defined as not all items fulfilled but at least two items fulfilled;
      - “not fulfilled” is defined as none or only one item fulfilled.
  - Standards 6-7
    - Sub-standards were defined by the levels of fulfillment explicitly indicated in the manual.
    - 3 levels

# Methods

## Data Collection

---

- A cross-sectional questionnaire survey with **a stratified random sampling of 46 hospitals** (2 iHPH:1 non-iHPH match) from November to December 2018.
- The stratified random sampling **considered iHPHs with or without certification, hospital levels (district hospitals, regional hospitals, and medical centers), and general hospitals or not.**
- We used Excel to compute random orders for 477 hospitals from different categories.
- Finally, **31 iHPHs and 15 non-iHPHs** were included in the study.

# Methods

## Data Collection

---

- For iHPHs, representatives or coordinators for the iHPH certification or managers responsible for health promotion were invited to fill out the questionnaire.
- For non-iHPHs, managers responsible for health promotion were invited to fill out the questionnaire.
- Respondents were instructed to fill out the questionnaires after discussion with colleagues from other departments involved in health promotion.
- A blank space was provided in the questionnaire to accommodate open narrative opinions from the participants.
- A fee of US\$65 was given to each respondent as compensation for their time and effort.

# Methods

## Data Analysis

---

- Measurable elements as not fulfilled (0 point), partly fulfilled (1 point), and completely fulfilled (2 points)
- The seven standards and corresponding 46 measures of the iHPH self-assessment tool were identified in light of the theories
- exploratory factor analyses (EFA) by stratification with Kaiser–Meyer–Olkin (KMO) values, Bartlett's test of sphericity, communalities, factor loadings, eigenvalues, and a scree test within each standard using principal axis factoring to detect the factor structure of the measures in each standard.



# Methods

## Data Analysis

---

- profiled the distribution of the overall compliance scores of iHPHs and studied the floor and ceiling effects as the proportion of responses in the lowest and highest scores.
- To test construct validity, we investigated the associations between hospital characteristics and self-reported compliance scores by using the Mann–Whitney U Test owing to the non-normal distributions of compliance scores.
- We further conducted reliability tests with Cronbach's alpha to confirm internal consistency.
- Finally, we studied the levels of comprehensibility, applicability, and importance of each sub-standard with a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The total score of each of the seven domains was converted to a figure on a scale of 10 for standard comparisons using a standardized scale.

# Results

## Characteristics of participating hospitals

Characteristics	n (%)	Characteristics	n (%)
<b>Ownership</b>		<b>International membership of HPH</b>	
Public	12 (26.1%)	Yes	22 (47.8%)
Private	16 (34.8%)	No	24 (52.2%)
Private non-profit	18 (39.1%)	<b>Certificated as HPH in Taiwan</b>	
<b>Hospital level</b>		Yes	25 (54.3%)
Medical centers	6 (13.0%)	No	21 (45.7%)
Regional hospitals	18 (39.1%)	<b>Certificated as age-friendly healthcare</b>	
District hospitals	22 (47.8%)	Yes	23 (50.0%)
<b>Specialized hospital</b>		No	23 (50.0%)
Yes	6 (13.0%)	<b>Certificated as smoke-free hospital</b>	
No	40(87.0%)	Yes	33 (71.7%)
<b>Number of beds</b>		No	13 (28.3%)
≤100 beds	10 (21.7%)	<b>Certificated with environment-friendly healthcare</b>	
101–300 beds	13 (28.3%)	Yes	26 (56.5%)
301–600 beds	9 (19.6%)	No	20 (43.5%)
601–1000 beds	8 (17.4%)		
>1,000 beds	6 (13.0%)		

# Results

## Factor structure of the seven standards

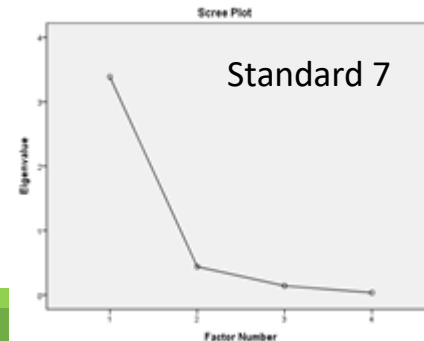
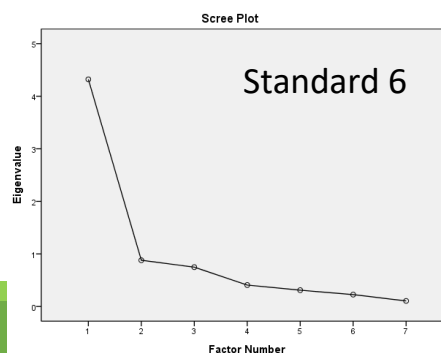
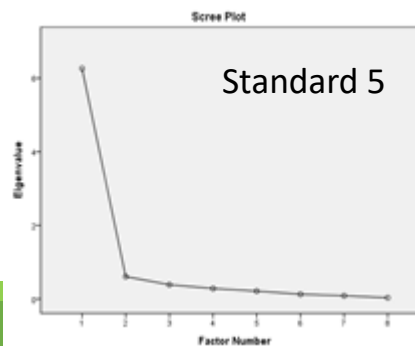
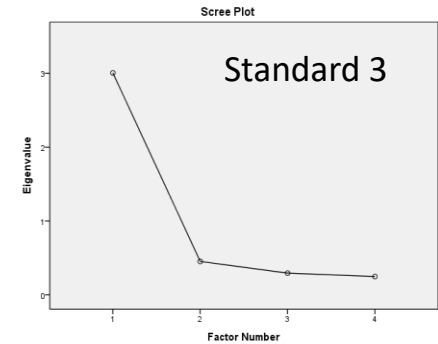
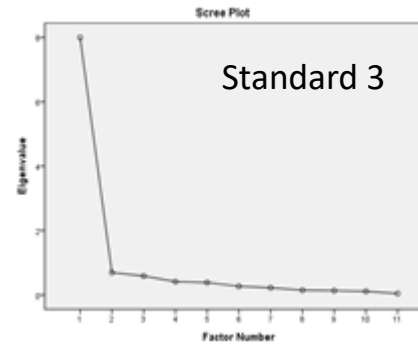
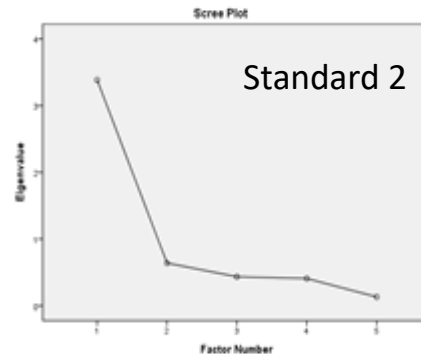
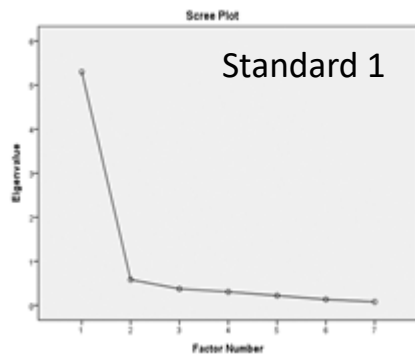
---

- Exploratory factor analysis by stratification
  - each standard contained exactly one factor with 4 to 11 measures, which suggested that our data are suitable for factor analysis and sound factor structures.
  - The variable-to-factor ratios were more than 4, which conformed to at least four variables per factor suggested in previous studies (Fabrigar et al., 1999; Conway et al., 2003)
  - the KMO values  $\geq 0.76$ 
    - $\geq$  the recommended value of 0.5, and the Bartlett's test of sphericity was statistically significant.
    - suggested the factorability of the data (Hinton et al., 2004)
  - All items in each of the standards had factor loadings  $\geq 0.62$ 
    - No item required removal from each standard because the factor loadings of all items were  $\geq 0.4$  (de Wet et al., 2010; Lawlor et al., 2004)

# Results

## Factor structure of the seven standards

- Exploratory factor analysis by stratification
  - every standard showed only one component as designed by using an eigenvalue of 1 and scree tests.



# Results

## Factor structure of the seven standards

---

- Exploratory factor analysis by stratification (Cont.)
  - The proportions of explained variance in these seven standards larger than the acceptable threshold of 0.5 (Beavers et al., 2013)
    - policy and leadership (71.9%)
    - patient assessment (60.5%)
    - patient information and intervention (70.2%)
    - healthy workplace and capacity for CHP (67.0%)
    - implementation and monitoring (75.6%)
    - age-friendly healthcare (55.8%)
    - environment-friendly healthcare (80.3%)

# Results

## Factor structure of the seven standards

---

- The Cronbach's alpha coefficients for each standard were all higher than 0.7, which is beyond the minimum score for adequate reliability (Bland et al., 1997).
  - policy and leadership (0.944)
  - patient assessment (0.878)
  - patient information and intervention (0.961)
  - healthy workplace and capacity for CHP (0.887),
  - implementation and monitoring (0.958)
  - age-friendly healthcare (0.896)
  - environment-friendly healthcare (0.923)

# Results

## Content Validity

An acceptable floor effect of 0% and a ceiling effect of 13%

	Standard 1: Policy and Leadership n (%)	Standard 2: Patient Assessment n (%)	Standard 3: Patient Information and Intervention n (%)	Standard 4: Healthy Workplace and Capacity for CHP n (%)	Standard 5: Implementation and Monitoring n (%)	Standard 6: Age- Friendly Healthcare n (%)	Standard 7: Environment -Friendly Healthcare n (%)	Overall Compliance n (%)
Theoretical range in the compliance score	0–14	0–10	0–22	0–8	0–16	0–14	0–8	0–92
Hospitals (%) with lowest score	5 (10.9)	4 (8.7)	3 (6.5)	6 (13.0)	10 (21.7)	1 (2.2)	2 (4.3)	0
Hospitals (%) with highest score	18 (39.1)	18 (39.1)	10 (21.7)	18 (39.1)	12 (26.1)	21 (45.7)	29 (63.0)	6 (13.0)
Skewness	-1.00	-1.37	-0.78	-0.95	-0.72	-1.462	-1.65	-0.94
Kurtosis	-0.63	0.62	-1.04	-0.66	-1.28	1.596	1.66	-0.77
Observed compliance score: mean (SD); median	9.85 (5.2) 13.0	7.54 (3.2) 9.0	14.76 (8.0) 19.0	5.59 (2.9) 7.0	10.11 (6.5) 14.0	11.50 (3.4) 13.0	6.63 (2.3) 8.0	60.0 (29.5) 80.5

Minor floor effect

stronger ceiling effects

# Results

## Construct Validity

Hospitals with certification experiences or more than 300 beds had significantly higher levels of compliance

			Mean (SD) self-reported level of compliance with iHPH standards								Mean (SD) assessment of measurable elements	
		n	Policy and Leadership	Patient Assessment	Patient Information and Intervention	Healthy Workplace and Capacity for CHP	Implementation and Monitoring	Age-Friendly Healthcare	Environment-Friendly Healthcare	Overall compliance	Applicability	Importance
iHPH	Yes	31	12.42 (3.05)	8.68 (2.29)	18.06 (5.29)	6.97 (1.70)	13.10 (4.22)	12.74 (1.93)	7.68 (0.83)	79.65 (17.23)	165.61 (20.47)	167.48 (20.61)
	No	15	4.53 (4.85)	5.20 (3.73)	7.93 (8.48)	2.73 (2.89)	3.93 (6.17)	8.93 (4.37)	4.47 (2.85)	37.73 (29.99)	151.60 (20.09)	155.93 (21.45)
			p < 0.001	p = 0.001	p = 0.001	p < 0.001	p < 0.001	p = 0.003	p < 0.001	p < 0.001	p = 0.024	p = 0.059
HPH	Yes	25	12.24 (3.35)	8.64 (2.48)	18.08 (5.46)	7.00 (1.55)	12.92 (4.54)	12.68 (1.95)	7.72 (0.84)	79.28 (17.98)	163.64 (20.46)	165.00 (20.85)
	No	21	7.00 (5.73)	6.24 (3.60)	10.81 (8.84)	3.90 (3.30)	6.76 (7.03)	10.10 (4.23)	5.33 (2.80)	50.14 (33.02)	157.95 (22.13)	162.19 (22.37)
			p = 0.001	p = 0.009	p = 0.008	p = 0.002	p = 0.001	p = 0.053	p < 0.001	p = 0.005	p = 0.365	p = 0.574
International HPH Network Member	Yes	22	12.17 (3.40)	8.67 (2.53)	18.08 (5.58)	7.00 (1.59)	13.04 (4.59)	12.71 (1.13)	7.75 (0.85)	79.42 (18.36)	164.54 (20.39)	166.00 (20.68)
	No	24	7.32 (5.79)	6.32 (3.54)	11.14 (8.76)	4.05 (3.29)	6.91 (6.90)	10.18 (1.73)	5.41 (2.75)	51.32 (32.70)	157.23 (21.86)	161.23 (22.29)
			p = 0.003	p = 0.006	p = 0.007	p = 0.002	p = 0.001	p = 0.039	p < 0.001	p = 0.003	p = 0.239	p = 0.367
Age-Friendly Healthcare	Yes	23	12.65 (1.67)	9.35 (0.89)	19.57 (3.09)	7.26 (1.05)	13.83 (3.13)	13.13 (1.58)	7.91 (0.29)	83.70 (8.05)	166.35 (20.17)	167.13 (20.30)
	No	23	7.04 (6.09)	5.74 (3.73)	9.96 (8.56)	3.91 (3.25)	6.39 (6.96)	9.87 (3.98)	5.35 (2.71)	48.26 (32.61)	155.74 (21.28)	160.30 (22.29)
			p = 0.007	p < 0.001	p < 0.001	p < 0.001	p = 0.001	p = 0.001	p < 0.001	p = 0.001	p = 0.080	p = 0.248
Environment-Friendly Healthcare	Yes	26	11.92 (3.27)	8.69 (2.43)	18.27 (5.40)	6.88 (1.63)	13.04 (4.38)	12.92 (1.92)	7.77 (0.82)	79.50 (17.59)	164.27 (19.55)	166.42 (19.59)
	No	20	7.15 (6.12)	6.05 (3.61)	10.20 (8.64)	3.90 (3.39)	6.30 (6.97)	9.65 (4.06)	5.15 (2.76)	48.40 (32.92)	156.85 (22.98)	160.20 (23.51)
			p = 0.021	p = 0.005	p = 0.002	p = 0.003	p = 0.001	p = 0.002	p < 0.001	p = 0.003	p = 0.267	p = 0.399
Smoke-Free Hospitals	Yes	33	11.70 (3.77)	8.61 (2.50)	17.97 (5.46)	6.76 (1.79)	12.36 (5.11)	12.82 (1.79)	7.55 (1.20)	77.76 (19.20)	163.97 (19.51)	166.33 (19.32)
	No	13	5.15 (5.66)	4.85 (3.44)	6.62 (7.78)	2.62 (3.20)	4.38 (6.37)	8.15 (4.28)	4.31 (2.81)	36.08 (30.64)	153.62 (24.21)	157.08 (25.48)
			p < 0.001	p < 0.001	p < 0.001	p < 0.001	p = 0.001	p = 0.001	p < 0.001	p < 0.001	p = 0.168	p = 0.213
Bed Numbers	≤300	23	7.48 (5.88)	6.04 (3.51)	10.39 (8.35)	4.09 (3.32)	6.70 (6.77)	9.96 (3.91)	5.52 (2.75)	50.17 (31.80)	154.70 (21.82)	159.13 (23.53)
	>300	23	12.22 (3.15)	9.04 (2.12)	19.13 (4.62)	7.09 (1.35)	13.52 (4.12)	13.04 (1.89)	7.74 (.86)	81.78 (15.85)	167.39 (18.93)	168.30 (18.32)
			p = 0.008	p = 0.001	p < 0.001	p = 0.002	p < 0.001	p = 0.001	p = 0.002	p = 0.001	p = 0.057	p = 0.159



# Results

## Importance, comprehensibility, & applicability

- More than 80% of the respondents strongly agreed or agreed on the comprehensibility of sub-standards.
- More than 70% of respondents strongly agreed or agreed on the applicability and importance of the sub-standards.
- Sub-standards received slightly less agreement, indicated as below.

Sub-standards	Applicability	Importance
5.1.4 The hospital includes health promotion services in its operating procedures (e.g., clinical guidelines or pathways) and are available in all clinical departments.	<u>70%</u>	78%
5.2.1 The hospital routinely collects health promotion intervention information and makes it available to staff for evaluation.	<u>74%</u>	76%
5.2.2 The hospital has a quality control protocol for organizing health promotion activities.	<u>72%</u>	76%
5.2.3 The hospital is involved in the research and development of health promotion.	<u>70%</u>	<u>70%</u>
5.2.4 The hospital performs satisfaction surveys on the information it provides to its patients and uses feedback to improve its quality management system.	76%	<u>70%</u>

# Results

## Importance, comprehensibility, & applicability

---

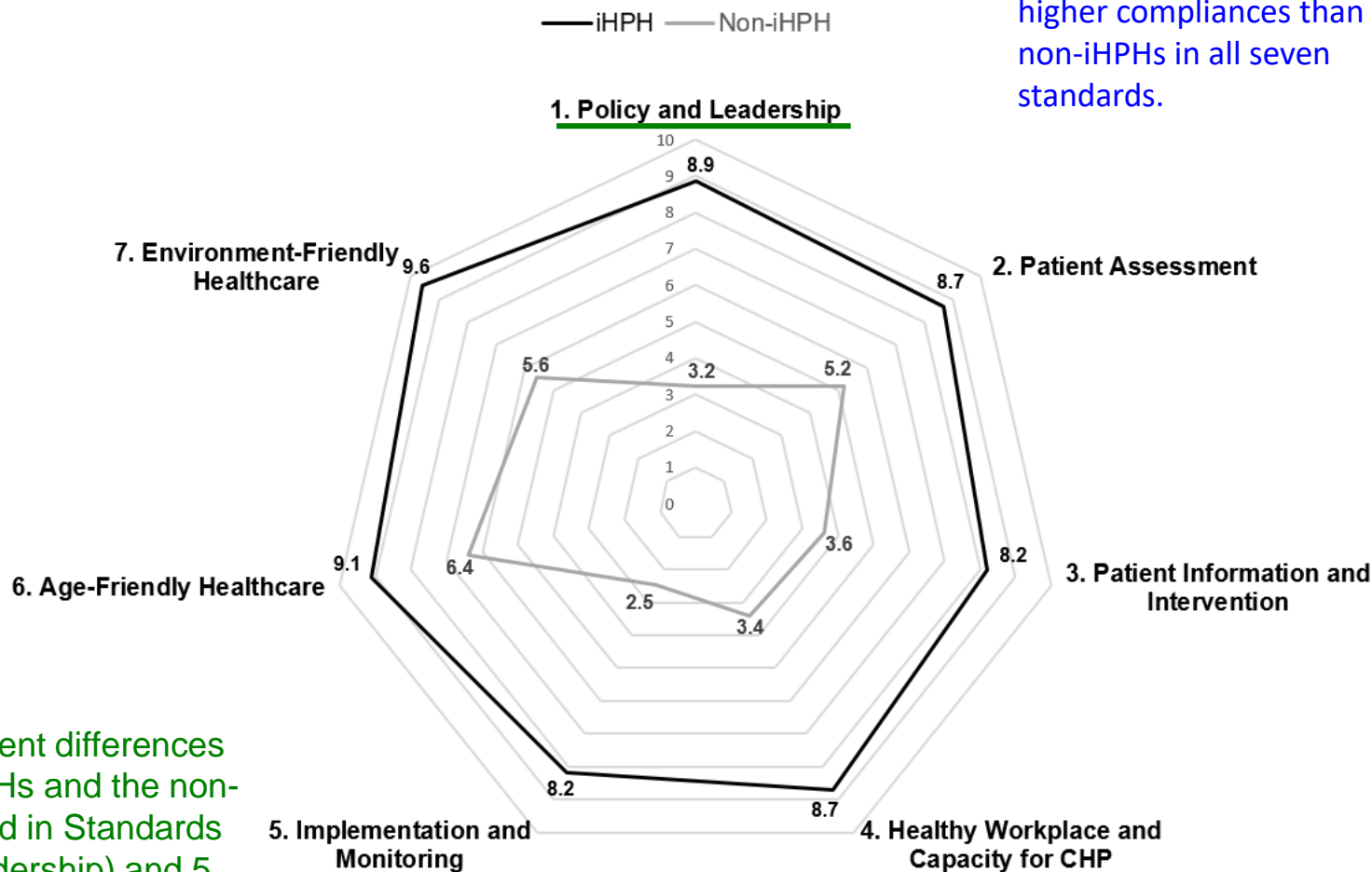
- According to the findings from narrative feedback
  - Small or district hospitals found difficulties incorporating health promotion services into their operating procedures (sub-standard 5.1.4) and conducting satisfaction surveys of information for patients (sub-standard 5.2.4)
    - they recommended access to national clinical guidelines or pathways;
  - One children's hospital expressed difficulties in committing to the prevention of tobacco or betel nuts, which is a required item in the tool but not a highly relevant concern as a children's hospital.
  - In the research and development of CHP (sub-standard 5.2.3), six small hospitals expressed a lack of confidence in their research capacity.

# Results

## What did iHPHs and non-iHPHs do differently?

31 iHPHs  
15 non-iHPHs

- The iHPHs had significantly higher compliances than the non-iHPHs in all seven standards.



- The most prominent differences between the iHPHs and the non-iHPHs were found in Standards 1 (policy and leadership) and 5 (implementation and monitoring)

# Discussion

---

- The implementation of health promotion in hospitals still have room to be desired worldwide, leaving some undesirable gaps to be filled.
- Examples
  - Unmet information needs were found in newly diagnosed breast cancer patients (Halbach et al., 2016)
  - Unmet dietary information was found among colorectal cancer survivors (Pullar et al., 2012).
  - A review found that high prevalence estimates of work-related musculoskeletal disorders were found among surgeons (Epstein et al., 2018),
  - A high level of burnout were found among ICU professionals (Chuang et al., 2016).
- Those incidents might be because that health promotion was implemented on an ad hoc basis or in an un-systematic manner, which was not integrated into quality management system and did not receive adequate organizational support.
- The iHPH self-assessment tool is meant to address such problems and assist hospitals to build capacity for implementing a multi-pronged health promotion **in a systematic way** and to achieve optimal health outcomes.
- Organizational capacity building for health promotion in structure and process could contribute to desirable outcome in light of Donabedian's structure-process-outcome conceptual framework (Donabedian, 2003).
- **Facilitated by the iHPH self-assessment tool, hospitals could create a comprehensive cross-disciplinary platform to coordinate *relevant* health promotion tasks, build supportive infrastructure, and develop routine operations so as to achieve optimal health outcomes.**

# Discussion

---

- This self-assessment tool for HP in hospitals can serve as a reference for other countries with their hospitals committed to HP.
- Hospitals over the globe encounter comparable challenges:
  - prevalent non-communicable diseases
  - Population ageing , proportion of population aged 60 : 13 % of the global population, 25% in Europe, and 22% in Northern America
  - Limited health literacy is a problem on a global scale, such as 47% in Europe [61] (Sørensen et al., 2015) and 55% in Southeast Asian (Rajah et al., 2019)
  - shared decision-making has not been widely adopted owing to a lack of systematic promotion at national, regional, or organizational levels (Joseph-Williams et al., 2017; Scholl et al., 2018).
  - health care sectors are one of the major contributors to the carbon footprint. ex. 7% in Australia over 2014-2015 [67] and 10% in the USA in 2016 [68].
- Separately dealing with these many challenges is less effective for hospitals (Bernardo et al., 2015).
- Thus, an integrative self-assessment tool is called for to lend itself to hospitals in synergistically responding to various health needs.

# Discussion

---

- The integrative self-assessment tool could provide a reference to international hospitals that commit to implementing a multi-pronged health promotion in a world of multi-faceted challenges.
- This tool was only validated in Taiwan, and further validation in other countries is needed if the tool is to be adopted internationally.





守護健康

衛生福利部 國民健康署

Health Promotion Administration,  
Ministry of Health and Welfare

# Thank You for your attention



中國醫藥大學

CHINA MEDICAL UNIVERSITY

