

出國報告（出國類別：開會）

參加第 9 屆亞洲健康識能國際會議－ 全方位探研健康識能與實地考察

服務機關：衛生福利部國民健康署

姓名職稱：羅素英組長、黃巧文研究員

派赴國家/地區：泰國/普吉島

出國期間：112 年 5 月 13 日至 112 年 5 月 18 日

報告日期：112 年 7 月 31 日

摘要

亞洲健康識能學會(Asian Health Literacy Association, AHLA)為亞洲推動健康識能相關議題重要的交流平台，成立於 2013 年，由台灣及 20 幾個亞洲、北美、以色列、中亞等國家公共衛生醫療專家所組成的國際組織，長期推動亞洲與世界各國健康識能的接軌與提升。該學會自 2013 年起每年舉辦一次國際會議，2023 年第 9 屆亞洲健康識能國際會議於 112 年 5 月 14 日至 17 日於泰國普吉島舉辦，大會主題為「All for Health literacy」，全方位探究健康識能。

本屆國際會議集結產、官、學、研各領域專家及團體進行多元探討健康識能的發展與推動，議題包括健康識能與自我保健/自我管理、健康識能和錯誤健康資訊、健康識能與有效的健康溝通、心理健康識能、健康識能與健康公平、數位科技促進健康識能、健康識能對經濟和就業的影響、組織健康識能與高績效組織、社區健康識能與社區生活品質、健康識能和獲得高品質教育、數位健康識能/電子健康識能、健康識能是促進健康的有利因素、政策和政治層面的健康識能、促進臨床實踐的健康識能能力建構、健康識能和非傳染性疾病預防、弱勢群體的健康識能、學校和教育環境中的健康識能、環境健康識能、高齡化社會的健康識能及健康識能與 COVID 防治等。透過會前會工作坊普吉島健康識能推動的實地考察包括初級和二級保健單位的健康識能推廣、專題演講、口頭和海報發表與頒獎、及會後會環境健康識能設置及泰式烹飪班（文化健康識能）等方式，吸引了來自東亞、南亞、東南亞、大洋洲、歐洲及美洲等 20 幾個國家，近 400 位專家學者和行政主管意見領袖參與。

衛生福利部國民健康署由羅素英組長以口頭發表「The Development of Health Literacy Toolkit in Taiwan」及本署委託的「石化工業區附近居民環境健康識能計畫」1 篇口頭發表「Association of environmental health literacy (EHL) with risk perception, avoidance behaviors, and trust for stakeholders among residents in Taiwan」，與 1 篇海報「Environmental health literacy assessment scale development for residents living near the petrochemical industries」，共計 3 篇發表和與會來自全球各地的健康識能同好進行交流，分享我國健康識能推動的實務經驗。

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壹、目的

- 一、參加第 9 屆亞洲健康識能國際會議，瞭解全球健康識能發展的趨勢，及世界衛生組織、國際及亞太地區健康識能組織合作之推動情形。
- 二、強化健康促進國際交流，透過 2 篇口頭發表「The Development of Health Literacy Toolkit in Taiwan」及「Association of environmental health literacy (EHL) with risk perception, avoidance behaviors, and trust for stakeholders among residents in Taiwan」，與 1 篇海報發表「Environmental health literacy assessment scale development for residents living near the petrochemical industries」，分享推動健康識能及「臺灣健康識能行動綱領」、健康識能工具包、健康傳播素材徵選經驗，展現推動各項健康識能與健康促進政策成果，提升國際能見度。
- 三、增進國際健康識能領域的夥伴關係，開展國際合作機會，並汲取其他國家推動健康識能的經驗，實地考察泰國普吉島健康識能實務推動的狀況，包括初級和二級保健單位的健康識能推廣、環境健康識能設置及泰式烹飪班（文化健康識能）等方式，作為日後規劃提升國內健康識能政策推動之參考。

貳、過程

一、行程

日期	行程
5月13日(六)	啟程至泰國普吉島
5月14日(日)	參加「第9屆亞洲健康識能國際會議」會前會工作坊-實地考察泰國普吉島初級和二級保健單位的健康識能推廣
5月15日(一)	參加「第9屆亞洲健康識能國際會議」開幕典禮、專題演講、平行會議、口頭發表、海報及攤位展示
5月16日(二)	參加「第9屆亞洲健康識能國際會議」專題演講、海報及攤位展示與開幕典禮
5月17日(三)	實地考察泰國普吉島 環境健康識能設置 泰式烹飪班(文化健康識能)
5月18日(四)	賦歸

二、內容說明

(一)第9屆亞洲健康識能國際會議概況

亞洲健康識能學會(Asian Health Literacy Association, AHLA)為亞洲推動健康識能相關議題重要的交流平台，由台灣及20幾個亞洲、北美、以色列、中亞等國家公共衛生醫療專家所組成的國際組織，長期推動亞洲與世界各國健康識能的接軌與提升。該學會自2013年起每年舉辦一次國際會議，2023年第9屆亞洲健康識能國際會議於112年5月14日至17日假泰國普吉島舉辦，大會主題為「All for Health literacy」，全方位探究健康識能。

本屆國際會議集結產、官、學、研各領域專家及團體進行多元探討健康識能的發展與推動，議題包括健康識能與自我保健/自我管理、健康識能和錯誤健康資訊、健康識能與有效的健康溝通、心理健康識能、健康識能與健康公平、

數位技術促進健康識能、健康識能對經濟和就業的影響、組織健康識能與高績效組織、社區健康識能與社區生活品質、健康識能和獲得高品質教育、數位健康識能/電子健康識能、健康識能是促進健康的有利因素、政策和政治層面的健康識能、促進臨床實踐的健康識能能力、健康識能和非傳染性疾病預防、弱勢群體的健康識能、學校和教育環境中的健康識能、環境健康識能、高齡化社會中的健康識能及健康識能與COVID防治等。透過會前會工作坊普吉島健康識能推動的實地考察包括初級和二級保健單位的健康識能推廣、專題演講、口頭和海報發表與頒獎、及會後會環境健康識能設置及泰式烹飪班(文化健康識能)等方式，吸引了來自東亞、南亞、東南亞、大洋洲、歐洲及美洲等20幾個國家將近400位專家學者和行政主管意見領袖參與。

衛生福利部國民健康署由羅素英組長以口頭發表「The Development of Health Literacy Toolkit in Taiwan」及本署委託的「石化工業區附近居民環境健康識能計畫」計畫主持人郭憲文教授口頭發表「Association of environmental health literacy (EHL) with risk perception, avoidance behaviors, and trust for stakeholders among residents in Taiwan」，與本署與計畫團隊共同海報發表「Environmental health literacy assessment scale development for residents living near the petrochemical industries」，共計3篇發表和與會來自全球各地的健康識能同好進行交流，分享我國健康識能推動的實務經驗。

(二)會議重點摘述

1.5月14日會前會工作坊-實地考察 (Site Visit)

(1)主題：實地參訪查龍地區健康中心(基層保健單位)和與次級保健單位查龍醫院交流健康識能的推廣(Health Literacy Promotion in primary and secondary care units- Cha-long)

摘要：查龍地區是泰國普吉島普吉府南部的一個分區。它是首都區的八個分區之一，查龍健康中心和查龍醫院是該地區基層和次級保健單位，此次大會安排查龍社區長者健康促進的民族舞蹈做為歡迎儀式，查龍健康中心(Nawaminthaciinal Health Center)主任和護理長分享該所如何針對民眾健康問題來介入解決的做法。查龍區的前三大健康議題分別是車禍事故傷害、慢性疾病和懷孕婦女貧血等健康問題。查龍衛生所護理長首先分享該區懷孕婦女健康促進網絡夥伴關係，包括衛生所同仁是各項活動的啟動與協調者、查龍醫院是參與計畫和解決健康問題的執行者、公衛社區網絡組織參與家訪及查龍區政府提供相關經費。泰國的健康識能推廣模式是以泰國健康識能學會理事長(President of Thai Health Literacy Promotion Association, THLA)Dr. Wachira Pengjuntr 發展出來的模式，全國公衛體系統一以此「V 字模式」來推動，包括可近性(Acess)、認知力(Cognitive)、溝通(Communication)、決策(Decision)、自我管理(Self-Management)及媒體識能(Media literacy)，分享以此行動策略來解決協調該社區孕婦面臨健康識能的解決法，媒體識能特別以動畫卡通製作歌唱影片宣導懷孕婦女及其家人如何幫助產婦呼吸放鬆的現場示範。其他還包括道路安全健康識能計畫的推動，計畫由中央補助地方政府，運用婦女志工(婆婆媽媽的力量)熱心參與道路安全的規勸、宣導與維護，和我國國小的導護志工媽媽很接近，但更擴大到非校園，且該社區婦女志工網絡在道安推動的投入很多，與交通警察合作維持交通安全。



圖 1 歡迎儀式介紹該社區老人民族舞延緩失智失能推動的成果展



圖 2 全球各地的與會參訪者與 Dr. Wachira Pengjuntr | President of Thai Health Literacy Promotion Association (THLA)在衛生所前合影

Chaloem Phra Kiat 60th Birthday Nawaminthachinal Health Center, Phuket Province

PRIORITY OF CHALONG PCU HEATH PROBLEM

Rank	Problem	Risk	Cost	Volume	Policy	Difficulty	Total score
1	Traffic accident	150	80	80	80	20	410
2	Non-communicable disease	120	80	60	80	20	360
3	Pregnant women	130	70	90	60	20	350
4	Elderly	120	80	60	60	20	340
5	Dengue Fever	90	60	80	60	30	320

圖 3 查龍區的前 5 大健康議題，以懷孕婦女健康促進做分享

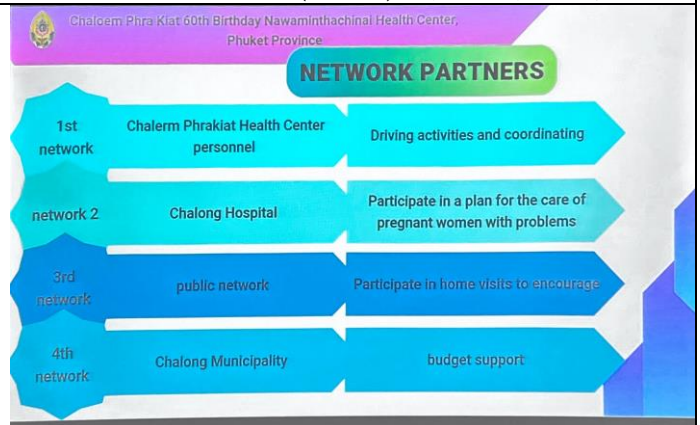


圖 4 查龍區懷孕婦女健康促進的健康識能推動夥伴關係

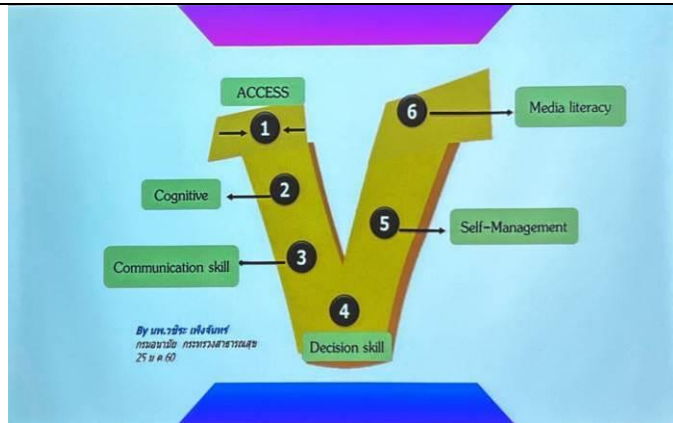


圖 5 泰國健康識能學會發展的健康識能推動架構 Access, Cognitive, Communication, Decision, Self-Management, Media literacy



圖 6 Media literacy 以動畫卡通製作歌唱影片宣導懷孕婦女及其家人如何幫助產婦呼吸放鬆的現場示範

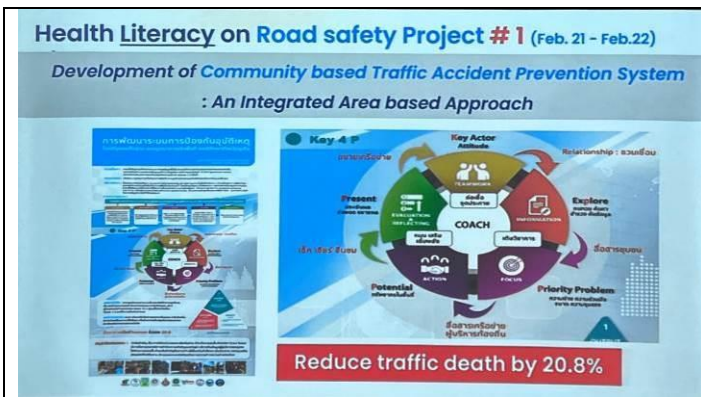


圖 7 道路安全健康識能計畫#1 策略



圖 8 道路安全健康識能計畫#2 策略



圖 9 道路安全健康識能計畫#3 策略



圖 10 道路安全健康識能計畫#4 策略



圖 11 羅組長素英(前排左 1)與參訪團分享台灣在社區營養與安全帽事故傷害防制法規等健康促進的實務經驗



圖 12 與參訪團領隊 Jarumon Boonsingru (中間)、翻譯(左 1)及印尼專家(右 2)合影

羅組長素英於會中與各國參訪專家分享臺灣在社區營養、準爸爸健康手冊

與安全帽事故傷害防制法規等健康促進的實務經驗，各國與會者也分享與

泰國在健康促進推動上的異同點，就跨國的交流這場蠻多元性的，由於文化與政治背景不同，各國經驗亦有差異性。

2.5 月 15 日開幕

開幕以知名南泰傳統民族舞蹈團體的表演開場，泰國傳承數百年的民族舞蹈曾被聯合國教科文組織選為非物質文化遺產的傳統文化，開場的設計展現泰國文化底蘊。本屆會議由普吉島省長Narong Woonsiew先生首先致開幕詞，介紹普吉島的健康照護、觀光及泰式料理整個健康識能促進體系。接著是此次主辦大會活動的孔敬大學 (KKU) 校長 Charnchai Panthongviriyakul 教授以預錄影片表達歡迎之意，後續由亞洲健康識能協會 (AHLA) 主席Angela Leung教授、國際健康促進與教育聯盟 (IUHPE) 副主席 Stephan Van de Brouke教授及泰國公共衛生部 (MoPH)常務秘書Opart Karnkawinpong博士等從國際健康識能的實證與推動提出對未來發展的願景，開幕橋段搭配。

大會並於開幕式頒發全球貢獻獎(Global Health Literacy Awards)及AHLA網絡成就獎(AHLA Network Achievement Awards)，我國前監察委員、AHLA榮譽主席、台灣秀傳醫療集團國際總監張武修教授並榮獲第九屆亞洲健康識能國際會議頒發全球貢獻獎，為我國爭取最大的榮耀。

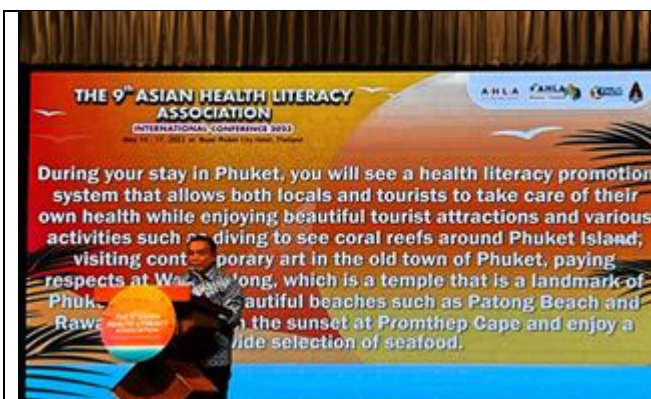


圖 13 普吉島省長 Narong Woonsiew 先生開幕致詞



圖 14 開幕式大合影



圖 15 以影片螢幕共同倡議全球健康識能



圖 16 我國張武修教授獲頒全球貢獻

4. 5月15日專題演講

(1)主題:主題演講 1(Keynote 1)智慧醫療與全球 ESG 的健康識能(Health Literacy on Smart Health Care and Global ESG)

講者: 張武修教授(Prof. Peter Chang), AHILA 榮譽主席; 台灣秀傳醫療集團國際總監

摘要: 張教授講述其創立 AHILA 迄今 10 年的健康識能推展歷程, 師法全球健康識能推動團體包括世界衛生組織、歐盟、美國疾管署、加拿大識能中心、加拿大公共衛生協會、健康識能全球工作小組、紐西蘭健康識能協會、英國健康識能協會、國際健康識能協會、愛爾蘭國家成人健康識能及《上海健康促進宣言》等。闡述提升健康識能對民眾有極大的價值, 依實證顯示可以減少民眾疾病的預防和發生, 生病後亦能快速有效地恢復健康, 節省醫療支出, 並且提升醫療人員的專業能力, 更可強化國人自主健康管理能力、深化社區健康照護。於此次大會提出未來 10 年全球健康識能應朝智慧醫療與職場 ESG 健康識能推展, 特別以其任教的北醫大學與美國 Tuft 大學有職場健康促進的推動, 結合國家永續發展(SDGs)計劃, 提出工作場所是提升民

眾健康識能最重要的一個場域，倡議企業在環境、社會和公司治理 (ESG)對於社會健康促進的具體參與和貢獻，繼續將健康識能對人權的核心保障延續擴展到對地球的永續經營。



圖 17 美國健康識能網站的卡通圖讓民眾了解健康識能(<https://world.edu/lifelong-learning-part-time-undergraduate-provision-crisis/>)

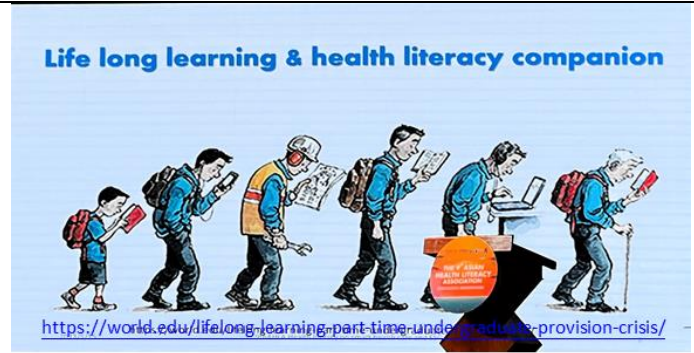


圖 18 世界教育網站的卡通圖來說明終身學習和健康識能(<https://world.edu/lifelong-learning-part-time-undergraduate-provision-crisis/>)



圖 19 全球健康識能朝智慧醫療與 ESG 發展

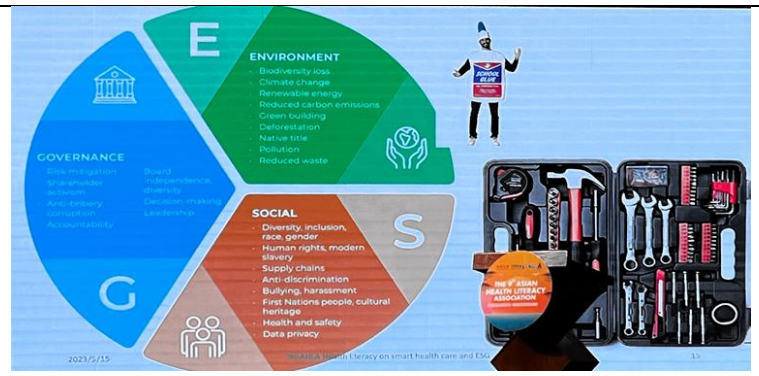


圖 20 倡議企業發展環境、社會和公司治理(ESG)工具包

(2)主題：主題演講 2 (Keynote 2)健康識能在解決健康方面的社會不平等中的作用(The role of health literacy in addressing social inequalities in health)

講者：比利時天主教魯汶大學 Stephan Van den Broucke 教授

摘要：Broucke 教授表示，全球健康不等存在於年齡、性別、社經地位、種族與身心障礙差異的社會決定因子，而社經地位差異是造成健康差異的重要原因之一，但社會經濟地位 (SES) 並不是直接影響健康的主因，而是健康識能(Health Literacy)，並進一步提出可能的機轉。強調健

健康識能是社會經濟健康差異的可改變風險因素，透過健康識能在不同使用對象之設計(不同使用對象如衛生醫療專業人員、媒體、一般民眾)而有不同，健康識能亦可善用社群媒體，將健康促進概念推廣至醫療衛生專業、媒體與民眾，增進全民的識能以降低健康不平等。



圖 21 全球健康不等存在於年齡、性別、社經地位、種族與身心障礙的差異

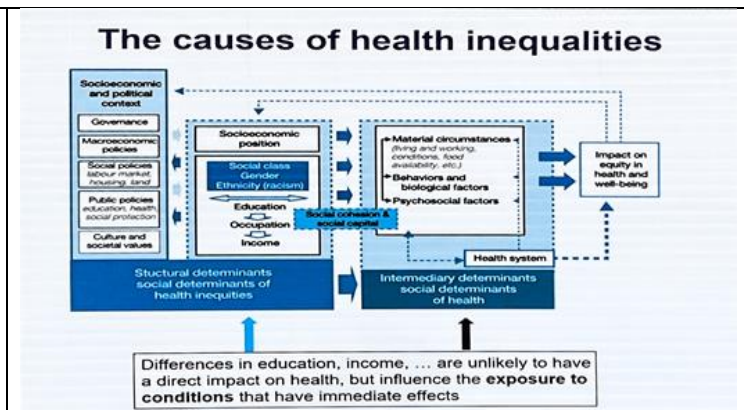


圖 22 健康不平等的原因起源於影響健康的社會決定因素(WHO)

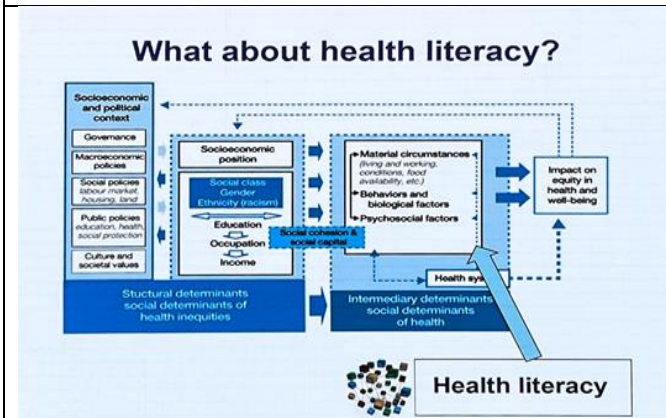


圖 23 在社會決定中介因素中，健康識能具降低健康不平等的重要角色

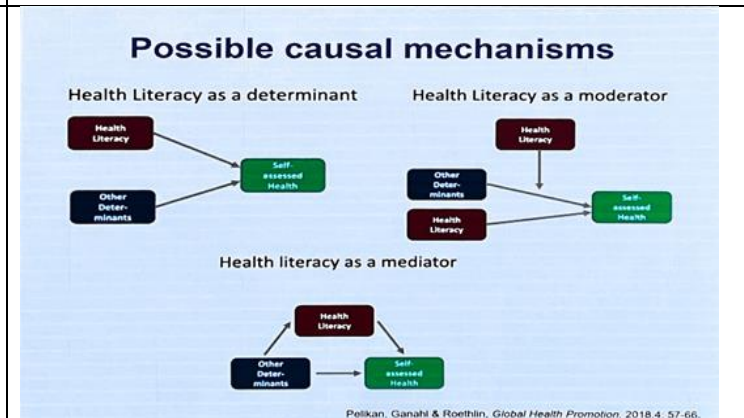


圖 24 引用 Pelican 教授提出的健康識能機轉：健康影響的決定因子、仲介質及調節劑重要 3 個機轉

5. 5月15日平行會議口報

(1)主題：「The Development of Health Literacy Toolkit in Taiwan」，分享推動健康識能及「臺灣健康識能行動綱領」、健康識能工具包、健康傳播素材徵選經驗

講者：衛生福利部國民健康署羅素英組長

摘要：分享推動健康識能及「臺灣健康識能行動綱領」、健康識能工具包、健康傳播素材徵選經驗，展現推動健康識能與健康促進政策成果，提升國際能見度。分享臺灣在發展國內健康識能調查工具，作為健康識能政策擬定與計畫推動之參考；發展「健康識能友善素材審查指標」及使用指引，除擴大健康傳播效益外，亦辦理全國性健康素材徵選活動，將符合健康識能作品上架至「健康九九」衛生教育資源平台，供醫療衛生人員、媒體工作者、民眾下載，以達資源共享。並從不同健康領域進行資訊交流，以提升健康識能友善環境等。

「臺灣健康識能國家行動綱領」架構以衛生系統為主軸，教育系統與社會文化系統為合作夥伴。衛生系統的組織架構由上而下為中央衛生主管機關、地方衛生主管機關以及基層的執行場域，包括：醫療場域、社區基層醫療保健單位、衛生所以及職場。本行動綱領規劃健康識能的推動策略，可從健康資訊品質、數位科技、生活場域、醫療場域、專業人力、焦點群體與健康議題、研究與發展等7大方向啟動。

另「臺灣健康識能國家行動綱領」策略目標，包括：(1)改善健康資訊品質，提供可信賴、易獲取、易理解且可執行的健康資訊。(2)發展數位科技，強化健康資訊傳播與運用，建立民眾自我健康管理自主權。(3)強化生活場域健康識能的培育環境，提升民眾健康識能。(4)促進醫療衛生場域的改變，以達健康識能友善。(5)培育健康識能人力，提供健康識能服務。(6)提升民眾健康識能，尤其是特別需關注的群體與健康議題，使民眾能自我管理健康與進行合適的醫療決策。

(7)擴展健康識能的研究與發展，作為推動健康識能實務的依據。

報告中亦介紹「健康識能工具包」為提升全民健康識能，特發展本土性的健康識能推動資源，以工具包的形式，打包每一個健康識能服務推動的相關工具，包括口語溝通包、長者溝通包、指路包、健康數值包、問問題包及影音教材包等6篇，以提供醫療服務人員與民眾間達到良好有效溝通，促進健康醫療資訊品質之工具。

另，亦說明衛生福利部國民健康署在推廣健康資訊和概念，透過多元管道廣泛宣導，辦理「健康九九+網站」為提供民眾健康相關資訊而設立，是衛生教育資訊入口網站，希望提供民眾及衛生教育人員正確與即時的衛生教育資訊與識能。與會各國專家對於「健康識能工具包」非常感興趣，並立即下載英文版等相關資料，平行場次主持與談人澳洲雪梨大學教授Prof. Don Nutheam、與會專家們與QA時段，提問有關工具包使用的對象，分享國健署「健康九九+網站」係提供不同使用對象，包括醫療衛生人員、媒體工作者、民眾，免費下載以達資源共享。並從不同健康領域進行資訊交流，提供各類宣導資源線上觀看、下載與影音資料瀏覽外，讓民眾在使用上有全新的體驗，同時也導入互動web2.0的功能，如YouTube影音，讓民眾更貼近網路生活。網站同時也透過單元整合、增強檢索功能與即時健康資訊的提供，讓更多的民眾及專業人士能認識與利用，使民眾在更方便與友善的網際網路平台下獲得更豐富、正確與即時的的健康資訊，進而提升瀏覽民眾數量及服務品質，營造促進國人健康生活，提升健康識能友善環境。



圖 25 羅組長素英的分享國健署健康識能工具包



圖 26 主持人 Don Nutbeam 教授提問



圖 27 主持人 Don Nutbeam 教授請現場與會者提問



圖 28 同場次報告者 Usha Sharma 提問



圖 29 與會者來自香港的學者提問



圖 30 場次主持人、報告者及與會者合影

(2)主題：「Involving undergraduate students from the health field to answer questions from underserved population on social networks」

講者: Maria Cristiane Barbosa Galvao, Professor at Ribeirao Preto Medical School, University of Sao Paulo, Brazil

摘要: 巴西 Ribeirao Preto 醫學院社會醫學系 Cristiane 教授是本屆大會最佳口頭報告獎的得主, 她與該校其他教授合作, 藉由招募醫學生志工, 指導學生應用知識轉譯的過程, 運用 3 本創新理論(節儉創新、U 型理論負責任的創新) 及社會學「推拉理論」的方法學, 發展「拉力/推力/推拉混合力模式」(如下圖)的健康訊息傳遞方式, 利用社群網絡(IG、FB、Twitter 等)病友提問, 讓醫學生在社群媒體自我介紹並以葡萄牙語來關懷並回復該國醫療資源不足的慢性病族群醫學資訊需求, 同時增進醫學生與低識能民眾溝通的能力。

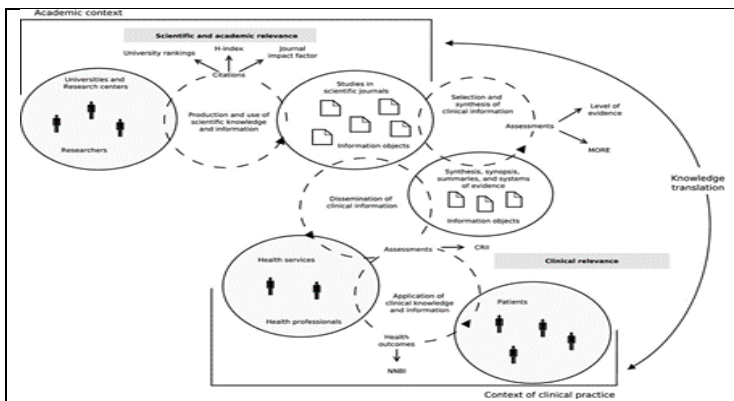


圖 31 知識轉譯的過程

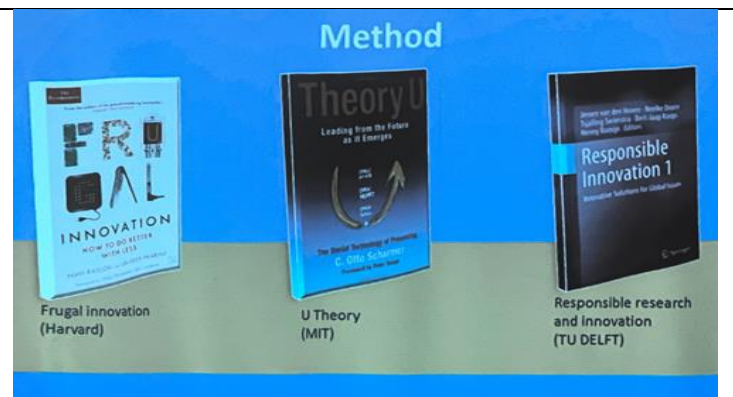


圖 32 教導醫學生運用 3 本創新理論(節儉創新、U 型理論與負責任的創新)的概念來做作民眾衛教

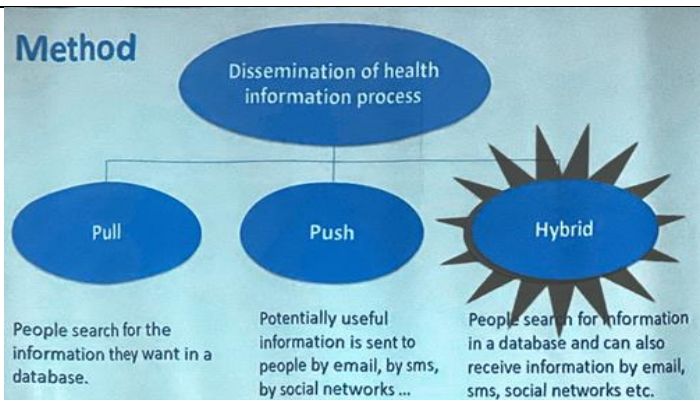


圖 33 「拉力/推力/推拉混合力模式」的健康訊息傳遞 Pull/push/hybrid Model



圖 34 回答社群提問糖尿病的草藥(pull)同時提問自行服草藥的風險(push)

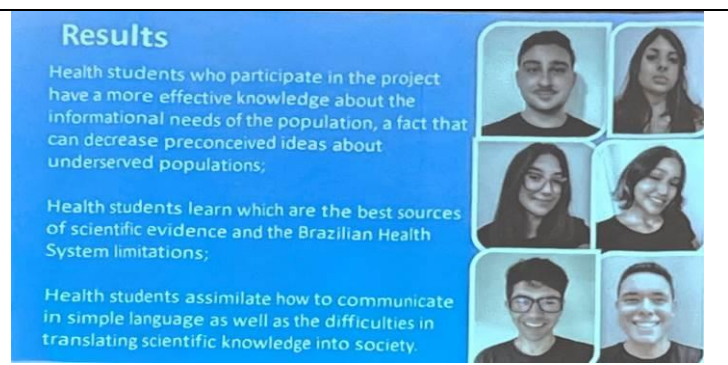
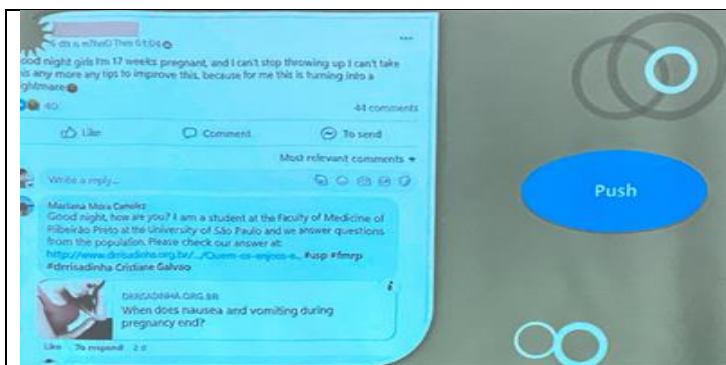


圖 35 回答社群懷孕初期嘔吐問題(pull)同時提問懷孕嘔吐停止的時間(push)

圖 36 增進醫學生與低識能民眾溝通的能力

6. 5月14日海報展示



圖 37 此次海報展示以泰國投稿最多，全國公衛體系統以 THLA 理事長 Dr. Wachira Pengjuntr 發展出來的”V”模式，來推動。

7. 5月16日專題演講

(1) 主題演講 5 健康識能全球視角(Health Literacy Global Perspective)

講者：國際健康識能學會(IHLA)理事長 Kristine Sørensen 博士

摘要：丹麥籍的 Sørensen 理事長開場化身童話故事播音員，借童話故事來說明健康識能的工具無法一體適用於每個人及每個情境，需要以人為中心提供真正的需求，這樣的說故事方式生動活潑，贏得滿堂喝采。她進一步強調健康識能的能力建構(capacity building)，除強化醫療專業人員的健康識能外，對大眾健康識能應從小培養，並引用 Nutbeam 教授提出健康識能的功能性(functional)、互動性(interactive)、批判性(critical)三層次的健康識能，來闡述不同情境下幾個人到群體識能進化程度的差異，及對生活事件與處境掌握不同的控制權。為不同授眾提供量身訂做的健康識能，猶如各式不同的杯子蛋糕般令人喜愛。

(2) 主題演講 6 國際健康識能政策和實踐(International Update on Health Literacy Policies and Practices)

講者：美國塔夫茨大學醫學院 Sabrina Kurtz-Rossi 教授助理。

摘要：這場以視訊演講，網羅全球的健康識能政策和實踐，整理如下：

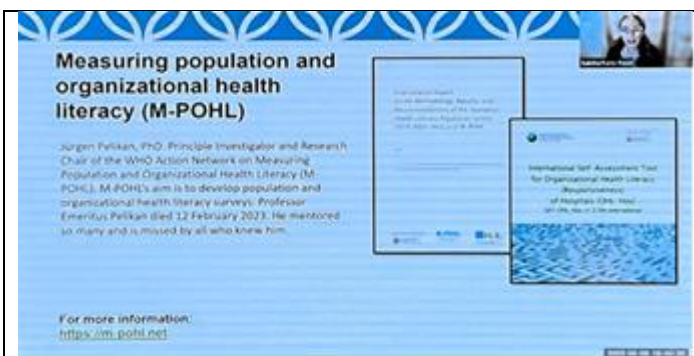


圖 38 Pelican 教授提出的 WHO M-POHL 健康識能 (M-POHL - WHO Action Network on Measuring Population and Organizational Health Literacy <https://m-pohl.net/>)



圖 39 2020 年 WHO 出版 4 冊 NCD 健康識能 ([Global Coordination Mechanism on the Prevention and Control of NCDs \(who.int\)](http://www.who.int))

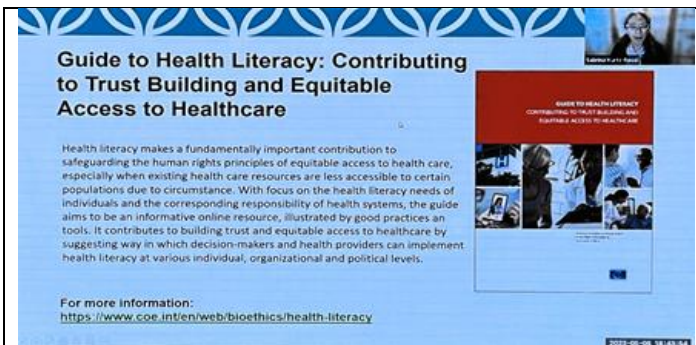


圖 40 歐洲議會出刊的健康識能指引
<https://www.coe.int/en/web/bioethics/health-literacy>



圖 41 德國對識能障礙者提升健康識能的線上課程
<https://www.i-hla.org/webinars>



圖 42 瑞典對移民及難民提升健康識能的線上課程
<https://www.i-hla.org/webinars>



圖 43 巴西公衛專業人員之健康識能能力建構
<https://journals.plos.org/plosone/article/doi/10.1371/journal.pone.0271361>



圖 44 非洲馬利共和國發展糖尿病健康識能
<https://www.who.int/news-room/events/>

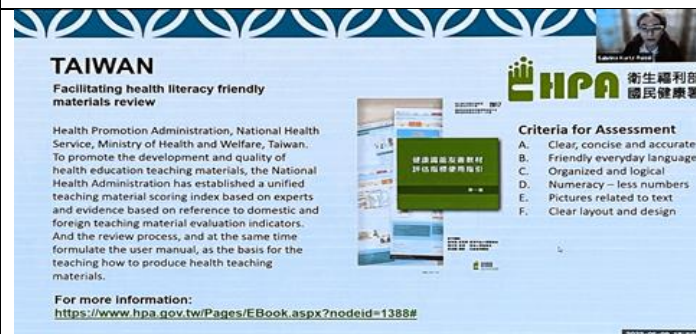


圖 45 台灣健康識能友善教材評估指標使用指引
<https://www.hpa.gov.tw/Pages/EBook.aspx?nodeid=1388>



圖 46 泰國將健康識能納入國家發展計畫
(<https://www.nationthailand.com/in-focus/40015426>)

圖 47 國際健康識能學會 (<https://www.i-hla.org/>)

(3) 主題演講 7 解決感染中的健康識能問題(Addressing Health Literacy in Infection)

講者：AHLA 理事長 Angela Leung 教授

摘要：梁教授分享其在香港新冠疫情期間，以創新互動式卡通圖的教學訓練方式，來教導機構的照護者 WHO 即時公布的自我防護方式，並在嚴峻的時期以隨機試驗研究法來確認教學的效益。

(4) Keynote 8 婚育意向與實現的全球視角：健康識能與生活方式 (Global Perspective on Marriage and Childbearing Intention and Realization: Roles of Health Literacy and Lifestyles)

講者：台北醫學大學 Tuyen Van Duong 教授，AHLA 理事長

摘要：目前世界上 234 個國家有 40 個國家人口呈現負成長。已經有相當多區域的人口結構為幼年人口小於老年人口，人口金字塔呈現縮減型金字塔型的狀態。新冠疫情影響年輕男女們結婚與生育的意願，特別是養兒育女的經濟壓力，生育力在亞洲國家如中國、南韓和台灣均呈下降趨勢，中國已婚青年生育意願的相關因素研究，社會經濟地位、育兒觀念和 COVID-19 誘發因素對生育意願的影響最大。透過影響年輕人結婚與生育意願的識能研

究，發展對年輕族群煮菜、生活型態、性生活功能與社會支持的識能，是近年新興的健康識能發展議題。

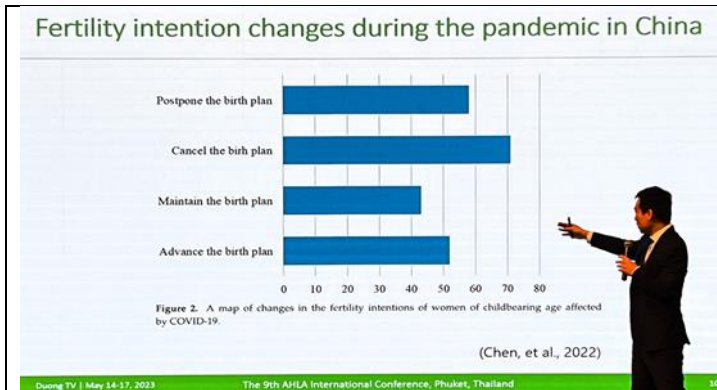


圖 48 7 成中國民眾因新冠疫情取消生育計畫

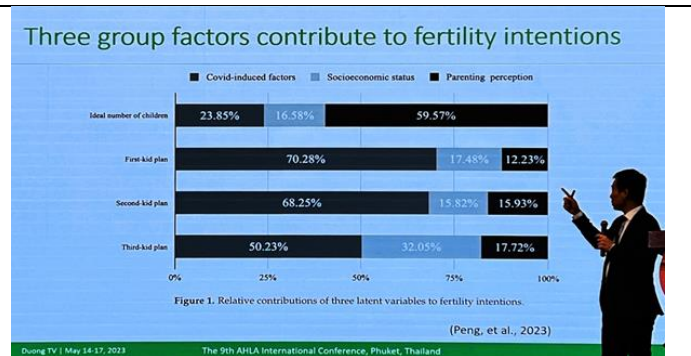


圖 49 中國已婚青年生育意願與社經地位、育兒觀念和 COVID-19 對生育意願的影響最大

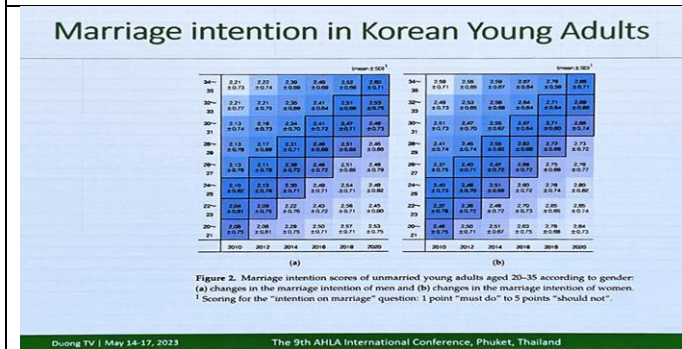


圖 50 韓國年輕男女的結婚意願逐年下降

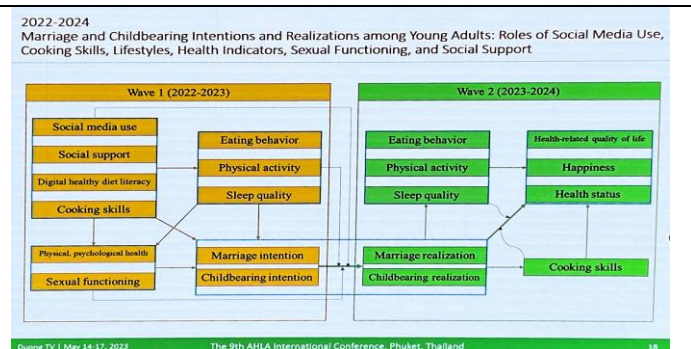


圖 51 發展對年輕族群煮菜、生活型態、性生活功能與社會支持的識能

(5) 主題演講 9 推動泰國健康識能的公私合力 (Public Private Partnership for Driving Health Literacy in Thailand)

講者：Nuttapun Supaka 博士，泰國健康促進基金會 (Thai Health Promotion Foundation 簡稱 ThaiHealth) 合作與國際事務部主任兼學術與創新部主任

摘要：泰國健康促進基金會是根據泰國 2001 年該國《健康促進基金會法》成立的自治政府機構 (autonomous government agency)，理事會成員由總理(同我國行政院長)擔任主席，公共衛生部長擔任第一副主席，獨立專家擔任第二

副主席，設有管理委員會和評估委員會管理基金會業務。委員會成員包括來自九個中央部會的代表和八名來自不同學科的獨立專家。設置一位執行長，在管理委員會的政策指導下，透過各種社群網路和合作夥伴執行健康促進的政策推動，並以公私協力合作夥伴關係的建立和實施系列健促計劃和專案，實現全民健康目標。年預算約 120 億美元，預算來自菸稅和酒稅的 2%。Supaka 主任說明該會制定 10 年目標，重視社會行銷(social marketing)及健康的商業決定因素，並分享該會如何強化健康社區、提高弱勢族羣的健康識能、推動假訊息查核中心計畫及發展數位健康識能，每年與超過 2 萬個單位公私協力，推動各項健康促進活動，受到 WHA 及國際的肯定。



圖 52 年預算來自 2%菸稅和酒稅，約 120 億美元

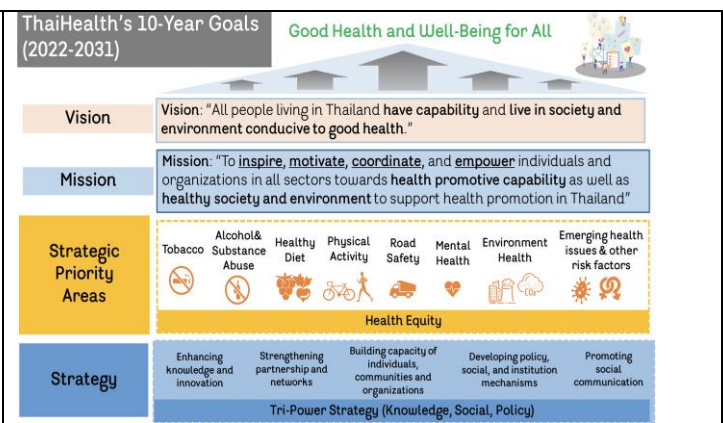


圖 53 ThaiHealth 的組織願景與使命等

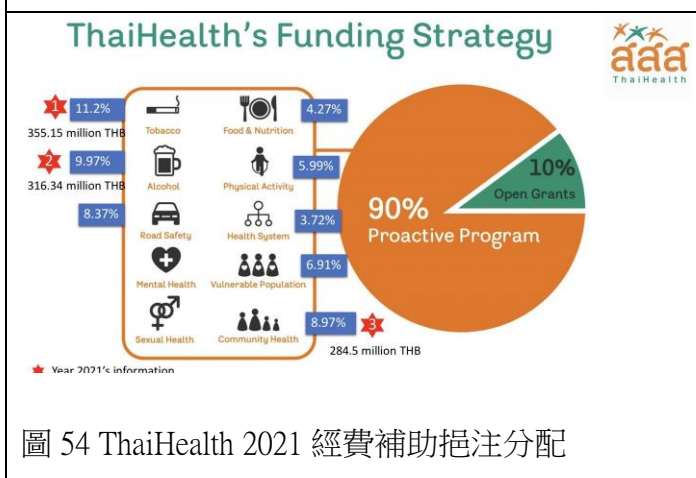


圖 54 ThaiHealth 2021 經費補助挹注分配



圖 55 ThaiHealth 每年與超過 2 萬個單位公私協力



圖 56 ThaiHealth 社會行銷 (social marketing) 做法

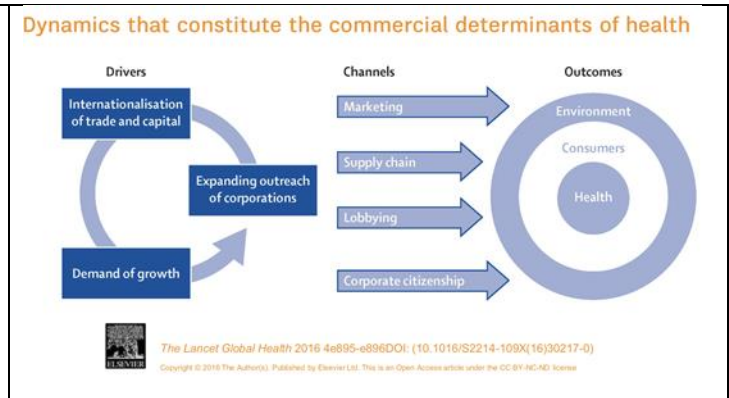


圖 57 健康的商業決定因素

The Collaborative Fact Checking Project

- COFACT Thailand is supported by the ThaiHealth together with partners and partners who believe that the solution to the problem of fake news in the digital age is to Making everyone become a fact checker and creating a space for collective fact-finding.
- More than 30,000 people have joined Collaborative Fact Checking (Cofact) Thailand to combat fake news during the Covid-19 pandemic.

COFACT
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圖 58 推動假訊息查核計畫

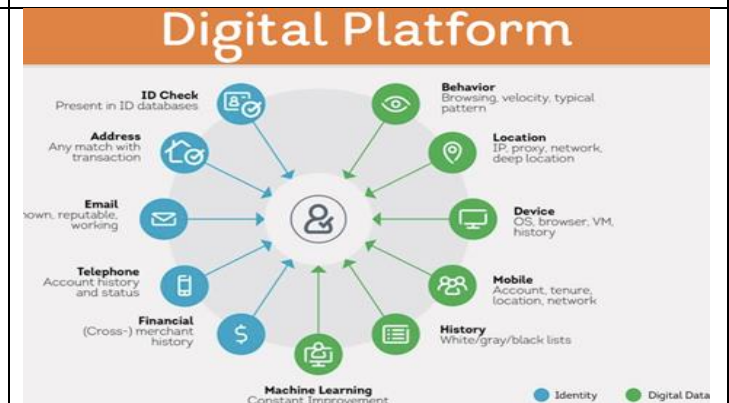


圖 59 發展數位平台

(6) 主題演講 10 提高健康識能：從理論到實踐(Improving Health Literacy: Moving from Theory to Practice)

講者：澳大利亞悉尼大學 Don Nutbeam 教授。

摘要：Nutbeam 教授從國際上健康識能研究量的逐年增加談起，以其發展的功能性(functional)、互動性(interactive)、批判性(critical)三層次的健康識能的理論，抽絲剝繭的論述如何改善健康識能(如圖架構模式)，透過教育和有技巧的溝通，「全面防護」(universal precautions) 的理念及推動「健康照護機構」讓民眾易於獲得、理解、應用健康資訊與服務，照護民眾健康等，近似本

署健康識能機構實務指引的論述。並提到未來以 AI 輔助民眾識能提升的方法，及未來引用 chatGPT 和 OpenAI 也應加註出處以表尊重。Covid-19 期間 WHO 針對假訊息(錯誤資訊 misinformation 和造假資訊 disinformation)不斷提醒，這部分的規範和處置，是各國政府需要持續需要關注的議題。



圖 60 改善健康識能的架構模式

Health Literacy – moving from theory to practical action

The background:

- Health literacy is **content and context specific**
- Most people experience difficulty in finding and using health information – **universal precautions are required**
- **Health literacy can be improved** through education and skilled communication
- Making change requires attention both to **people’s skills and abilities and contextual demands and complexity**

圖 61 從理論到實踐

Health Literacy – moving from theory to practical action

What are our responsibilities?

- As trusted sources of health information we have a responsibility to **get communication right**
- Frontline workers need **training in effective health communication**
- Health organisations should demonstrably **value and support effective health communication**
- Established communication techniques are effective and practical to use in the community and clinical practice – **we need to put into practice what we already know**

圖 62 從理論到實踐

Health Literacy – moving from theory to practical action

What does effective communication for health literacy look like?

- **Right message, to right person, at right time** using preferred media
- **Public and patient engagement** at all stages in communication development and delivery is feasible and leads to better outcomes
- **Interactive communication** builds transferable skills and confidence
- **Collaborative learning** creates trust and mutual respect between learners, and between educator and learner

圖 63 從理論到實踐

8.小組討論

我們參加健康識能驅動：全球和泰國經驗(Health Literacy Driving: Global and Thailand experience)及健康識能的全球視角(Global Perspective in Health Literacy)兩場小組討論，主持人分別為 AHLA 副理事長 Wongs Laohasiriwong 教授(孔敬大學公衛系主任)及 AHLA 名譽理事長 Peter Chang 教授

摘要：全球和泰國經驗部分，最值得關注是泰國的健康識能經驗，THLA 理事長 Wachira Pengjuntr 博士表示，泰國健康識能的發展起自國家改革委員與國家改革指導大會的推動，建立國家健康識能和健康溝通的委員會，並於 2017

年寫入泰國憲法中，規範國家要增進民眾的健康促進識能，列入國家健康發展計畫及最新國家策略(NATIONAL STRATEGY 2018 - 2037)中，由於有法律的規範，政府長期投入經費推動各項健康是能促進的計畫。健康識能的全球視角與談中，請與談學者預測未來 10 年健康識能的發展重點，澳洲雪梨大學 Don Nutbeam 教授表示將著重在性、心理及個人化健康預防的識能發展，特別是醫療科技發展，精準科技醫療如 DNA 檢測的進步，民眾需要這類健康識能來早期發現問題，及早預防疾病。針對政府如何治理健康識能，AHLA 主席 Kristine Sørensen 博士表示應著重在氣候變遷的識能，以庶民語言讓民眾理解，Sørensen 博士認為全世界政府科技能力不如業界，唯有與科技業合作才有可能達到治理能力；Nutbeam 教授則認為各國政府應與 WHO 共同合作來推動健康識能，並應著重社區發展，以有效達到治理。

9. 5月17日環境健康識能場域實地訪視

摘要：提升環境健康識能，被認為是一個具有潛力的介入策略，能民眾免於環境危險因子之危害，並提升其健康狀態。然而，健康識能研討會辦理場地在泰國南部的普吉島，是泰國最大的海島。「普吉島」源自於馬來西亞，所代表的意思就是「山丘」。它是泰國南部最小的府城，距離首都曼谷有 862 公里，是泰國境內唯一有行省轄治地區的島嶼，佔地共有 543 平方公里，南北長 48 公里，東西寬 21 公里，面積大概與新加坡相近，島上的主要地形是綿延的山丘，點綴著盆地，並有 32 座離島，有美麗的海灘、奇形怪狀的小島、鐘乳石洞、天然洞窟等自然景觀，再加上沿岸海水清澈湛藍，海底世界美不勝收，普吉島被外界稱為「熱帶天堂」。

而距離研討會會場很近的「普吉老城區」，研討會期間的環境文化觀察，有馬來西亞和華人的風格，多數是中葡式建築。有近 500 年歷史的老城區，散發著濃濃的殖民、移民多元化色彩。普吉島由於長年高溫，潮溼，季節變化性不大，加上優美的海灘與湛藍的海水，普吉島成為亞洲最著名的渡假聖地之一。普吉島是泰國最大的海島，自然資源豐富，周邊各個離島也各具特色。一年四季氣候溫暖，四~五月和九、十月是最炎熱和潮濕的季節。在環境文化體驗的過程中，與泰國、印度、越南、全球健康識能理事長 Prof. Kristine Sorensen 等有諸多互動，他們亦分享到臺灣參加「全球健康與福祉論壇」、「全球健康識能國際研討會」、「亞洲健康識能國際研討會」的環境人文美食體驗等美好經驗。Prof. Kristine Sorensen 未攜帶任何遮陽、防曬等物品，除主動提供遮陽帽外，亦與其討論島嶼型態的地區要兼顧健康，「預防熱傷害」的保護措施就相當重要，國民健康署亦會利用多元傳播管道宣導，以提升民眾對於熱傷害防護之健康識能。

10.5 月 17 日泰式烹飪班（文化健康識能）實地訪視

摘要：大會原排定泰式烹飪班（文化健康識能）實地訪視，由烹飪教練實地帶領參觀當地的泰國市場，教導如何選擇新鮮的食材，依據購買的食材實際製作泰式料理，但於 5 月 16 日下午臨時通知因人數不足取消此行程，由於對這個主題有興趣，故改自費參加離旅館不遠的藍象泰式烹飪學校課程。

藍象餐廳是 1980 年始於比利時布魯塞爾的泰式餐廳，由米其林星級泰國籍主廚 Nooror Ssmany Steppe 和比利時籍的丈夫共同經營，主推泰國皇家家常菜。其烹飪學校以小班授課教授泰國古法的食物製作，強調以泰式研鉢搗碎在地當季天然新鮮辛香料的調製技法，香氛(Aroma)是泰式料理的

靈魂，運用香料的調味能同時提升風味和顏色，另注重食材處理與冰箱管理的保存，講究對碗盤本身及擺飾的美學，並強調保持食材營養與美味的健康識能烹飪技巧，這個餐廳並推動全穀雜糧，除提供泰國白米外還有黑米的選擇。泰式烹飪班讓我見識到泰國菜的文化健康識能，廚藝學校附設在餐廳下，並迎合現代人忙碌無法準備食物，將自家餐廳膾炙人口的菜製成即食調理包在全世界販售的模式，及用香氛刺激味覺及嗅覺，可以做為高齡老人質地調整飲食入菜，發展即食調理包與料理組合包，及開設質地調整飲食課程的參考。



圖 64 注重食材的保存



圖 65 小班授課食物製作



圖 66 推動全穀雜糧，餐廳提供白米與黑米選擇

參、心得與建議

此次會議最大的收穫是能與國際級的專家交流，專家在平行場次對發表者內容的提問，常能一語道破研究或計劃設計或推動的盲點，對邏輯推理很有幫忙，並能從中汲取各國政策與實踐的做法與新知，特別是實際參訪泰國不同單位的健康識能推動，並與泰國健康促進基金會Nuttapun博士交流，他無私提供演講簡報，並推薦該會網站資訊，學習許多泰國健康促進實務工作推動的經驗。

比較此次研討會與過去發表在公務出國報告的內容，有一些較新的議題，包括(1)透過婦女參與交通安全的倡議與交通秩序的維護，協助警察在交通安全宣導的工作。(2)透過倡議企業在環境、社會和公司治理(ESG)對於社會健康促進的具體參與和貢獻，將健康識能對基本人權的保障擴展到對地球永續健康。(3)針對已婚夫妻不生育的問題，可發展對年輕族群做菜、生活型態、性生活功能與社會支持的婚育識能。(4)發展個人化健康預防的識能，轉譯精準預防醫學成為民眾易懂的健康識能教材。(5)政府可與科技業合作，強化國人健康識能治理能力。(6)研發社區健康促進與健康識能推廣的政策，以有效達到分區治理。(7)政府衛生單位應關注假訊息(錯誤資訊和造假資訊)，制訂相關管理機制。(8)健康識能也可納入環境健康識能如氣候變遷的識能及健康飲食文化識能，貼近民眾的日常。

茲就此次會議對未來十年健康識能發展對策，提出以下建議：

- 一、可透過職場健康促進平台來提升民眾健康識能，邀集企業倡議共同推動健康識能，將健康識能融入職場健康促進手冊。
- 二、研發社區健康促進與健康識能推廣的政策，以有效達到分區治理。
- 三、政府衛生單位應關注假訊息(錯誤資訊和造假資訊)，制訂相關管理機制。
- 四、發展個人化健康預防的識能，轉譯精準預防醫學成為民眾易懂的健康識能教材。
- 五、發展環境健康識能如氣候變遷的識能及健康飲食文化識能。

肆、附錄

一、大會議程

9th AHLA International conference Schedule May 14 – 17, 2023 at the Royal Phuket City Hotel, Phuket, Thailand

Date	Topic	Place	Notes
May 14, 2023			
12.00 – 16.00	Registration	Hotel, 1st Floor, in front of hotel lobby	
13.00 – 16.00	Site Visit 1 Health Literacy Promotion in primary and secondary care units	Cha-long	Paid Option
15.00 – 17.00	Workshop 1 Psychometric Properties of Health Literacy Survey Tools <i>Assoc. Prof. Tuyen Van Duong, Taipei Medical University,</i> <i>Vice-president, AHLA</i>	Room C	Paid Option
17.30 – 19.30	Reception Dinner (Invited Guests Only)	Hotel, 19 th Floor	
18.00 – 22.00	Site Visit 2 - Healthy Literate Community	Phuket Old Town	Free
Date	Topic	Place	Notes
May 15, 2023			
08.00 – 16.00	Registration	In front of Room A	
08.45 – 09.30	Open Ceremony Opening Performance Welcome Remarks to Phuket <i>- Mr. Narong Woonsiew, Governor of Phuket</i> Opening Remarks by KKU <i>- Prof. Charnchai Panthongviriyakul, President, Khon Kaen University (KKU)</i> Opening Remarks by AHLA <i>- Prof. Angela Leung, President, Asian Health Literacy Association (AHLA)</i> Address by IUHPE <i>- Prof. Stephan Van de Brouke, Vice President, International Union for Health Promotion and Education (IUHPE)</i> Welcome Remarks by Permanent Secretary of the Ministry of Public Health (MoPH), Thailand <i>- Dr. Opart Karnkawinpong</i>	Room A	

Date	Topic	Place	Notes
	Appreciation Awards ceremony - <i>Global Health Literacy Awards</i> - <i>AHLA Network Achievement Awards</i> Group Photoshoot		
09.30 - 09.50	Coffee Break	In front of Room A	
09.50 - 10.15	Keynote 1 Health Literacy on Smart Health Care and Global ESG <i>Prof. Peter Chang, Honor President of AHLA; International Director, Show Chwan Medical Group, Taiwan</i>	Room A	
10.15 - 10.40	Keynote 2 The role of health literacy in addressing social inequalities in health <i>Prof. Stephan Van den Broucke, University of Catholic Louvain, Belgium</i>	Room A	
10.40 - 12.00	Panel Discussion 1 Health Literacy Driving: Global and Thailand experience <i>Prof. Angela Leung, President, AHLA,</i> <i>Dr. Narong Sahamethapat, Thailand's Senator,</i> <i>Dr. Suwannachai Wattanayingcharoenchai, Director General, Department of Health (DOH),</i> <i>Chairperson: Prof. Wongsra Laohasiriwong,</i> <i>Dean of Faculty of Public Health, KKU;</i> <i>Vice President of AHLA</i>	Room A	
12.00 - 13.00	Lunch Break Lunch Symposium 1 Real World Experience: Thailand's Health Literacy National Policy <i>Dr. Wachira Pengjuntr, President of Thai Health Literacy Promotion Association (THLA),</i> <i>Assoc. Prof. Roy Batterham, Thammasat University,</i> <i>Kamolnut Muangyim, PhD, Sirindhorn College of Public Health, Chonburi,</i> <i>Wimon Roma, DOH and THLA,</i> <i>Moderator: Assoc. Prof. Chanuantong Tanasugarn</i>	1 st or 19 th Floor Room C	
	Poster Presentation 1 (P1-P36)	In front of Room A	
13.00 - 13.40	Keynote 3 Mental Health Literacy <i>Dr. Amporn Benjaponpitak, Director General, Department of Mental Health</i>	Room A	

Date	Topic	Place	Notes
13.40 - 14.20	Keynote 4 Digital Health Literacy and Innovation for Promoting Health Throughout the Life Course <i>Prof. Diane Levin-Zamir, University of Haifa, Israel</i>	Room A	
13.00 - 14.20	Oral Presentation 1 Organizational Health Literacy and High-performance Organization	Room C	
	Oral Presentation 2 Health Literacy and NCDs prevention	Room D	
	Oral Presentation 3 Health Literacy and COVID prevention and Control	Room E	
	Oral Presentation 4 Health Literacy in vulnerable populations	Room G	
	Oral Presentation (Online) 1	Room F	
14.20 - 14.40	Coffee Break		
14.40 - 15.20	Panel Discussion 2 Phuket Sandbox: Best practice for Public Private Partnership perspective <i>Mr. Bhumikitti Ruktaengam, Chairman, Sustainable Tourism Development Foundation,</i> <i>Dr. Withita Jangiam, Senior Professional Level of Medical officer, Samutsakorn Provincial Public Health Office,</i> <i>Moderator: Miss Nantawan Sriputtha,</i> <i>CRM officer, Bangkok Hospital Phuket</i>	Room A	
14.20 - 15.20	Poster Presentation 2 (P37-P70)	In front of Room A	
15.20 - 16.00	Panel Discussion 3 One School One Anamai Teacher for Student' s Health Literacy <i>Dr. Sarawut Boonsuk, Deputy Director, DoH,</i> <i>Dr. Phuriwat Khamaikawin, Director of the Excellence in Science Education Bureau, Secretary-General of the Basic Education Commission, Ministry of Education,</i> <i>Representative, Secretary-General of the Office of the Vocational Education Commission, Ministry of Education,</i> <i>Princess Chulabhorn Science High School' s students,</i> <i>Chairperson: Prof. Frank Peter Schelp, KKU</i>	Room A	
14.40 - 16.40	Oral Presentation 5 Health Literacy and Effective Health Communication	Room C	
	Oral Presentation 6 Mental Health Literacy	Room D	
	Oral Presentation 7 Digital technology for Health Literacy	Room E	

Date	Topic	Place	Notes
	Oral Presentation 8 Health literacy capacity to foster clinical practices	Room G	
	Oral Presentation (Online) 2	Room F	
18.00 - 20.00	Welcome Reception (Register and Intent to join)	Room A	
Date	Topic	Place	Notes
May 16, 2023			
08.00 - 12.00	Registration	In front of Room A	
09.00 - 09.30	Keynote 5 Health Literacy Global Perspective <i>Dr. Kristine Sørensen, President, IHLA</i>	Room A	
09.30 - 10.00	Keynote 6 International Health Literacy Policies and Practices <i>Asst. Prof. Sabrina Kurtz-Rossi, Tufts University School of Medicine, USA</i>	Room A	
10.00 - 10.20	Coffee Break		
10.00 - 11.30	Poster Presentation 3 (P71-P111)	In front of Room A	
10.20 - 11.00	Keynote 7 Addressing Health Literacy in Infection <i>Prof. Angela Leung, President, AHLA</i>	Room A	
11.00 - 11.40	Keynote 8 Global Perspective on Marriage and Childbearing Intention and Realization: Roles of Health Literacy and Lifestyles <i>Assoc. Prof. Tuyen Van Duong, Taipei Medical University, Vice-president, AHLA</i>	Room A	
10.00 - 12.00	Oral Presentation 9 Health literacy in schools and educational contexts	Room C	
	Oral Presentation 10 Health literacy as an enabling factor in promoting health	Room D	
	Oral Presentation 11 Digital Health Literacy / e-health literacy	Room E	
	Oral Presentation 12 Health Literacy and Self-Care / Self-Management	Room G	
	Poster Presentation (Online)	Room F	
11.40 - 13.00	Lunch Break	1 st or 19 th Floor	
12.00 - 13.40	AHLA EB Meeting	Room C	
13.00 - 13.40	Keynote 9 Public Private Partnership for Driving Health Literacy in Thailand	Room A	

Date	Topic	Place	Notes
	<i>Dr. Nuttapun Supaka, Director of Partnership and International Affairs Section and Director of Academic and Innovation Section, Thai Health Promotion Foundation</i>		
13.40 - 14.20	Keynote 10 Improving Health Literacy: Moving from Theory to Practice. <i>Prof. Don Nutbeam, The University of Sydney, Australia</i>	Room A	
14.20 - 15.20	Panel Discussion 4 Global Perspective in Health Literacy - <i>Prof. Angela Leung, President, AHLA</i> - <i>Prof. Wongsra Laohasiriwong, Dean of Faculty of Public Health, KKU; Vice President of AHLA</i> - <i>Assoc. Prof. Tuyen Van Duong, Taipei Medical University; Vice-president, AHLA</i> - <i>Dr. Kristine Sørensen, President, IHLA</i> - <i>Prof. Stephan Van de Brouke, Vice President, IUHPE</i> - <i>Prof. Don Nutbeam, The University of Sydney, Australia</i> - <i>Dr. Wachira Pengjuntr, President, THLA,</i> <i>Chairperson: Prof. Peter Chang,</i> <i>Honor President of AHLA; International Director, Show Chwan Medical Group, Taiwan</i>	Room A	
15.20 - 15.40	Coffee Break		
15.40 - 16.00	Closing Ceremony - Best Oral and Poster presentation award - The 10 th AHLA 2024 Invitation	Room A	
16.30 - 22.00	AHLA Dinner (Invited Guest Only)	Phuket Fantasia	

Date	Topic	Place	Notes
May 17, 2023			
07.30 - 10.00	Registration	Hotel, 1st Floor, in front of hotel lobby	
07.30 - 16.30	Site Visit 3.1 Environmental Health Literacy settings	Phi Phi - Ma Ya Bay - Pileh Lagoon - Khai Island	Paid Option
09.30 - 13.30	Site Visit 3.2 Thai Cooking Class (Cultural Health Literacy)	Phuket Old Town	Paid Option

ORAL PRESENTATION SCHEDULE

CODE	Presenter	Title	Time	Room
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CODE003	Janthiya Nativipattum	Situation and evaluation of Health Literacy Organization in health care organizations participating in project "Sasuk Oonchai 2022" of Health Region 7, 2022.	Date: 15th May 2023 Time: 13:00-14:20	Room C
CODE030	Malinee Aimekong	Upgrading the Public Health Service Unit in the 4th Health Region to become a Health Literacy Organization: Using a model of motivation and participation from the registration of a Sasukoonchai website		
CODE070	Haiyan Fu	The assessment tools of organizational health literacy in medical institutions		
CODE092	Kamolnat Muangyim	How to develop primary health care organization in Thailand into health literate primary health care organization?		
CODE138	Usha Rani	Organizational Health Literacy and Patient Health Literacy at the beginning of the COVID-19 pandemic in South India		
CODE040	Fesanmie Amarillo	Fitspiration Culture on social media and its impact on eating habits and weight control behaviors among nursing students	Date: 15th May 2023 Time: 13:00-14:20	Room D
CODE135	Le Duc Huy	Insight into global research on health literacy and heart diseases: A bibliometric analysis		
CODE167	Karl Peltzer	National cross-sectional data on health literacy of undiagnosed type 2 diabetes among adults in Sudan		
CODE205	Alexander Thomas Mboma	Health Literacy and Digital Healthy Diet Literacy as Associated with Health-related Quality of Life among Diabetic Patients with Long COVID		
CODE098	Jumnion Suwannachat	Improving eating literacy for people with uncontrolled blood glucose type-2 diabetes mellitus		
CODE055	Pham Thi Minh Thu	Negative impact of fear of COVID-19 on long COVID as modified by health literacy: a multiple-health centers survey in Vietnam	Date: 15th May 2023 Time: 13:00-14:20	Room E
CODE061	Daniswara Agusta Wijaya	Impact of health literacy and resilience on COVID-19 fear: Study among Indonesian COVID-19 survivors		
CODE075	Pakorn Tungkasereerak	Effectiveness of electronic media to promote health literacy in COVID-19 prevention among children with intellectual disabilities		
CODE079	Neil Madulara Martin	Visual Voice of the Youth Under Lockdown Protocol Amidst Covid-19 Pandemic: A Photovoice		
CODE090	Han T. Vo	Associations of health literacy and		

		digital healthy diet literacy with post-traumatic stress symptoms in long COVID-19		
CODE019	Thisophon Thongthai	Health Literacy in Early Childhood Rearing of Parents in the Middle Zone of Northeastern Thailand	Date: 15th May 2023 Time: 13:00-14:20	Room G
CODE039	Maria Cristiane Barbosa Galvao	Involving undergraduate students from the health field to answer questions from underserved population on social networks		
CODE081	Maria Cristiane Barbosa Galvao	Ana Maria: Instrument to capture librarians' perception about information products and services with focus on individuals with Down Syndrome		
CODE101	Endang Widyorini	The Relation Between Resilience and Subjective Happiness among Covid-19 survivor with comorbidities: The Mediating Role of Fear of COVID-19		
CODE031	Pragya Sharma	Prescribing Pattern of Antidepressants among Patients with Depression in a Mental Hospital of Nepal	Date: 15th May 2023 Time: 13:00-14:20	Zoom
CODE099	Benedicta Audrey Putri Trisnadewi	Relationship among fear of COVID-19, health literacy, and COVID-19 survivors' quality of life		
CODE199	Aunchalee Jittrapirom	Digital Health Literacy of Healthy among Pregnancy Women in Suratthani Province: A Case Study for Promoting Health Literacy		
CODE223	Houng Sar Mon	Health literacy on Tobacco Use among working aged people		
CODE225	Than Myint	Factors influencing cervical cancer screening uptake among reproductive aged women (30-60 years) in Maesot, Tak province, Thailand		
CODE156	Tatjana Murau	Sociodemographic differences in Digital Health Literacy among informal caregivers in Germany		
CODE013	Sarath Lekamwasam	Health literacy and economic downturn: A conceptual abstract based on the current Sri Lankan economic situation	Date: 15th May 2023 Time: 14:40-16:40	Room C
CODE077	Zhan	Public health policy in Republic of Kazakhstan: understanding of health literacy among population		
CODE121	Mariusz Duplaga	What determines the attitudes toward the pandemic: conspiracy beliefs or health literacy?		
CODE172	Hai Duong	Telemedicine in outpatient care for chronic diseases: A systematic meta-analysis		
CODE228	Wassana wangpimoon	Pharmaceutical literacy and drug		

		calendar service in tuberculosis patients, Nhongkrugori Hospital		
CODE036	Burin Suraaroonsamrit	Suicide literacy in Thai people	Date: 15th May 2023 Time: 14:40-16:40	Room D
CODE105	Margaretha Sih Setija Utami	Psychometric properties of health literacy scale for covid survivors		
CODE149	Thu Huong Nguyen	Status of Stress, Anxiety, Depression of Surgical Patients at Vinmec Timescity International Hospital in 2022 and Some Related Factors		
CODE158	Nopporn Tantirangsee	Development of the depression and suicidal ideation screening test		
CODE054	Rawipreya Punarong	Effects of mental health literacy and community-level capability development on sustainable health promotion of model community		
CODE021	Piyanan Photichai	Electronic Media Usage in Early Childhood in Khon Kaen Province Under the Supervision of Primary Caregivers of Various Ages	Date: 15th May 2023 Time: 14:00-16:60	Room E
CODE066	Ngamnetr Eiamnakha	Rehabilitation for Bedridden Patient by Using Telehealth		
CODE152	Chanisa Hengruamyat	The effectiveness of AI-assisted health literacy promotion innovation for diabetes risk group in Raksukkapap Clinic, Regional Health Promotion Center 5 Ratchaburi		
CODE164	Navinee Kruahong	Promotion of mental health literacy in social media society: thematic analysis of a twitter conversation		
CODE166	Anchana Sapon	The effectiveness of SMART NCDs program for establishing health literacy in diabetic patients, Bantakhun hospital, Surat Thani province, Thailand		
CODE053	Usha Ghimire	Impact of Local Community Health Workers' Response on Maternal and Child's Health in Rural Nepal: A COVID-19 pandemic Overview	Date: 15th May 2023 Time: 14:40-16:40	Room G
CODE082	Chen-Su Lin	The Development of Health Literacy Toolkit in Taiwan		
CODE226	Than Zaw	Health literacy on type 2 diabetes mellitus among Tuberculosis patients		
CODE119	Samal Issabekova	Health Literacy of The Population of The Republic of Kazakhstan		
CODE125	Hsien-Wen Kuo	Association of environmental health literacy (EHL) with risk perception, avoidance behaviors, and trust for stakeholders among residents in Taiwan	Date: 15th May 2023 Time: 14:40-16:40	Zoom
CODE132	Cecilia Wong T.T.	The impact of a training program for domestic workers in preventing fall of older people in the community		
CODE169	Shane Andrelei D. Perez	Self-care practices of hypertensive adult female patients in the City of		

		Marikina amidst the COVID-19 lockdown: a phenomenological inquiry		
CODE173	Josephine Ferren Heryanto	Relationship among fear of COVID-19, resilience and quality of life in Indonesian adolescents COVID-19 survivors		
CODE196	Umaporn Kamlungdee	The experience in applying health literacy of uncontrolled diabetic patients in Bang Sai Hospital Network		
CODE200	Loan Thi Dang	Anxiety, depression among hemodialysis patients during the COVID-19 pandemic: the roles of health literacy, hemodialysis dietary knowledge, and physical activity		
CODE220	Padmore Adusei Amoah	Social capital and quality of care and health information: Rethinking health literacy among community-dwelling older persons in Hong Kong		
CODE157	Tatjana Murau	Technology commitment among informal caregivers in Germany: results of an online survey		
CODE201	Enny Rachmani	Developing an Online Assessment Tool (Si Cerdik) for Measuring Digital Health Literacy		
CODE025	Suwusith Changthong	Health Literacy in Food Handler of School in Khon Kaen municipality		
CODE028	Suthra Auapisithwong	Effectiveness of a Life Skills Enhancement Program (LSEP-V) for Vocational Students in Thailand: A quasi-experimental study from a middle-income country		
CODE056	Maria Cristiane Barbosa Galvão	Pediatric patient literacy and storytelling	Date: 16th May 2023	
CODE136	Pakasinee Gawee	The analysis results of adolescent leadership development model in health region 1	Time: 10:00-12:00	Room C
CODE139	Ploynate Chananantpojchaniti	The effectiveness of Ianna smart child program for self-care behaviors of obesity secondary school students		
CODE178	Premyuda Narkarat	Effect of social media model to improve sexual health literacy among secondary school female students in southern provinces, Thailand		
CODE010	Prof Sarath Lekamwasam	Association of health literacy with metabolic control and vascular surrogates among patients with diabetes attending outpatient clinics; a cross-sectional study	Date: 16th May 2023	
CODE073	Pakorn Tungkasereerak	Effects of health literacy program (NESTPlus) on unprepregnancy and abortion teenage life skill protection in higher education institution	Time: 10:00-12:00	Room D
CODE114	Soe Moe	Role of health literacy in the prevention of emerging and re-emerging diseases: medical		

		students' perception		
CODE170	Margaretha Sih Setija Utami	The correlation between eco-literacy and pro-environmental behavior of university students		
CODE198	Wiphawadee Potisopha	Translation and Cross-cultural Adaptation of the Thai-Brief Health Literacy Screening Tool		
CODE113	Mila Nu Nu Htay	Digital health literacy on COVID-19 and its association with sense of coherence and well-being among youths of East and South-East Asia	Date: 16th May 2023 Time: 10:00-12:00	Room E
CODE184	Phoenix K.H. Mo	Longitudinal Effect of Electronic Health Literacy on Health-promoting Lifestyles among Chinese Older Adults: A Three-wave Longitudinal Study		
CODE224	Nyunt Win	Health Literacy among Myanmar Migrant Workers in Khon Kaen Province, Thailand: A cross-sectional study		
CODE227	Wor Mi Thi	Prevalence of limited hypertensive health literacy among Myanmar migrant workers in Northeastern Thailand		
CODE134	Nonthaphat Theerawasttanasiri	Health Literacy and Self-care Behaviors to prevent PM2.5 Impact of Village Health Volunteers at Special Economic Area in Chiang Rai Province		
CODE148	Sujitra Chaiwatthanakorn	Effectiveness of a self-perineal wound care promotion program for postpartum mothers: Self-Assessment of perineal wound healing	Date: 16th May 2023 Time: 10:00-12:00	Room G
CODE187	Yue Tian	The impact of Health Literacy on Quality of Life and Healthcare Utilization: A Cross-sectional Study in Hong Kong		
CODE190	Emyr Reisha Isaura	The Important Role of Health Literacy in Health Eating Behavior among Adults During the Covid-19 Pandemic		
CODE171	Suchitra Sumonnok	Antenatal care services model promoting iodine deficiency prevention literacy among pregnant women in health region-9 during the new normal		

二、投稿簡報及海報

The Development of Health Literacy Toolkit in Taiwan

Health Promotion Administration (HPA),
Ministry of Health and Welfare
Mei-Chuan Chang¹, Chao-Chun Wu²,
Shu-Li Chia², Shu-Ying Lo², Chen-Su Lin²,
May, 2023

1 Department of Nursing, Tzu Chi University, Taiwan, R. O. C.
2 Health Promotion Administration, Ministry of Health and Welfare, Taiwan, R. O. C.

Elements of a Health-Literate Society

Figure 28.2: Attributes of an enabling health -literate

International Handbook of Health Literacy(2019)

Integration of Resources: Principles

- Existing Resources
 - Open resources of government
 - Resources of individual units
- Lacking Resources
 - Consolidation of resources
 - Output strategy
 - Etc.....
- Resource Management
 - Copyright ownership
 - Content accuracy
 - Regular schedule update
 - Compliance with HL principles
- Access to Resources: Convenience

Taiwan Health Literacy Action Plan

- With the **healthcare system** at its core, the **education system** and **social-cultural systems** are vital partners in cooperation.
- Seven major dimensions

Taiwan Health Literacy Action Plan Strategic Objectives(1)

- Enhance the **quality of health information**, by providing accurate, accessible, clear, and actionable health information.
- Develop digital technologies**, and strengthen the dissemination and utilization of health information, empowering individuals to manage their health independently.
- Create a supportive environment for developing health literacy in **various areas of life**, and promote the enhancement of health literacy among the general population.
- Promote changes in **healthcare settings** to create a more health literacy-friendly environment.

Taiwan Health Literacy Action Plan Strategic Objectives(2)

- Cultivate a workforce** that possess health-literate competencies and provide health-literate services.
- Enhance the health literacy of the general population, particularly for **focus groups and health issues** that require special attention, enabling individuals to self-manage their health and make more informed medical decisions.
- Expand **research and development** in health literacy as the basis for promoting the implementation of health literacy.

Taiwan's Health Literacy Action Plan – Strategic Action Program(1)

1. Health Information Quality	1-1. Establish a monitoring system for the quality of health information. 1-2. Popularize health literacy principles through health -educational materials.
2. Digital Technology and Health Literacy	2-1. Establish a digital platform for health communication. 2-2. Develop smart and comprehensive health management resources. 2-3. Reduce information inequality among high -risk groups with limited access to digital resources.
3. Life Domains and Health Literacy	3-1. Enhance health literacy through all levels of education. 3-2. Enhance health literacy in the workplace. 3-3. Improve health literacy through non -profit organizations. 3-4. Promote health literacy through mass media.
4. Healthcare Settings	4-1. Promote health literacy -friendly certification in medical and community -based healthcare facilities. 4-2. Develop resources for promoting health literacy -friendly institutions. 4-3. Promote shared decision -making between healthcare providers and patients. 4-4. Develop user -friendly health information resources.

Taiwan's Health Literacy Action Plan – Strategic Action Program(2)

5. Promotion of a Health-literate Workforce	5-1. Training of health literacy promotion personnel by administrative agencies. 5-2. Training of healthcare professionals in health literacy. 5-3. Development of health literacy training for medical and nursing students. 5-4. Promotion of health literacy to key stakeholders.
6. Focus Groups/Health Issues and Health Literacy	6-1. Focus groups and health issues covered by "Universal Health Coverage." 6-2. Health literacy for vulnerable groups such as the elderly, indigenous people, and new immigrants. 6-3. Health literacy on environmental issues.
7. Research and Development in Health Literacy	7-1. Develop and survey tools for measuring health literacy. 7-2. Develop and test interventions to improve health literacy.

Tools and Resources for Health Literacy


- Continue to gather and consolidate existing health literacy-related resources from major domestic and foreign health resource websites into a comprehensive resource list.

Tools and resources: inclusion criteria

- Tools or resources that assist people (healthy individuals, patients, caregivers) in acquiring, understanding, evaluating, and applying health information.
- Tools or resources that enable healthcare professionals or healthcare institutions to implement health literacy-related measures.
- Research or evaluation tools related to health literacy.

Tools and resources: exclusion criteria

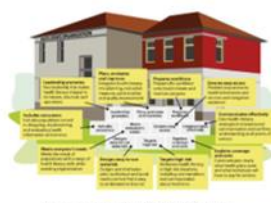

- Health education tools or resources related to specific diseases or health issues.
- Resources that cannot be directly acquired online or require approval before use.
- Tools or resources that are not in Chinese or English.



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Health Service Settings (Health Professionals)

The 10 Attributes of Healthcare Organizations
– according to medical research from the National Academy of Sciences

Source: Adapted from WHO-health literacy

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Community Health Professionals Health Literacy Promotion Self-Assessment Form

【衛生福利部國民健康署】
健康識能專業中心服務年表
(107-108年)

社區(衛生所)健康識能推動
年表

Six Major Work Dimensions


- Primary health policies
- Person engagement
- health literate workforce
- Supportive environment
- Health literacy services
- Health literacy promotion activities



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Health Literacy Action Template

Centered around health information as the core strategy for improvement.




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Health Literacy Toolkit(1)

Health Data Pack Help the patients and the public to understand the meaning behind the numbers, units, statistics and graphs in a simple manner.

Navigation Pack Plan guidance on in-hospital health resources, so that people can reach their destination and obtain service information according to the guidance during the medical process.

Query Pack Improve the public's ability to ask questions about their medical treatment, through questioning to express values and needs for disease care, enabling medical professionals to further understand and arrange accordingly.



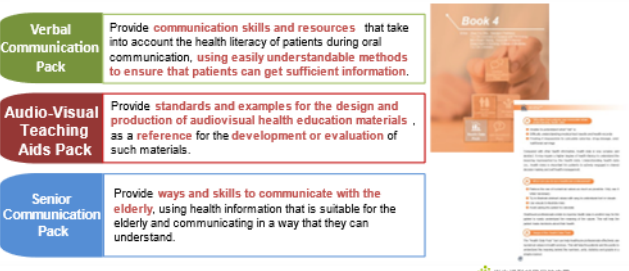
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Health Promotion Administration,
Ministry of Health and Welfare

Health Literacy Toolkit(2)

Verbal Communication Pack Provide communication skills and resources that take into account the health literacy of patients during oral communication, using easily understandable methods to ensure that patients can get sufficient information.

Audio-Visual Teaching Aids Pack Provide standards and examples for the design and production of audiovisual health education materials, as a reference for the development or evaluation of such materials.

Senior Communication Pack Provide ways and skills to communicate with the elderly, using health information that is suitable for the elderly and communicating in a way that they can understand.



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Health Promotion Administration,
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Health Literacy Toolkit(3)

Health Literacy Toolkit Publishing and Distribution

- The "Taiwan Public Health Annual Conference" is released and provided to attendees by the HPA.
- Health bureaus (offices), libraries, universities and medical institutions throughout Taiwan.
- Electronic files are uploaded to the Health99 website.




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Health Literacy Toolkit Animation Production

Animation Production for the Toolkit

- Develop 3 animated videos, with the themes respectively centered around "Elderly Communication", "Elderly Website Design", and "Health Numeric Expression".



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Health Literacy Toolkit

Hypertension

To showcase text and graphs, colors can be used to help older patients understand their blood pressure level.

Diabetic Nephropathy Risk

- Using visual dots to help people visualize the risk of nephropathy in diabetic patients.
- In the image, 30-50 out of 100 diabetic patients will develop kidney disease.

Medication

Use graphics to explain when, how much and how to take medication. The images used should be relatable to everyday understanding. Avoid unfamiliar and confusing images.

Health Promotion Module, Ministry of Health and Welfare 16

Conduct a Remote Interactive Training and Counseling Program for the Basic Version Package

Construct a synchronous remote learning method

Health Promotion Module, Ministry of Health and Welfare 17

Health Literacy-Friendly Material Review Indicator User Guide

Health Promotion Module, Ministry of Health and Welfare 18

Health Literacy-Friendly Review Indicator

This tool covers 6 dimensions and 21 rating items.

<p>A. Content</p> <ol style="list-style-type: none"> Main message is clearly presented on the cover or in the header. Emphasizes the execution of healthy behaviors. Content has a reasonable scope and is closely related to the topic. Has a summary or key review. The credibility of the content. 	<p>B. Language and Style</p> <ol style="list-style-type: none"> Everyday colloquial language and tone. Explanation of technical terms. Cultural appropriateness. 	<p>C. Organization and Editing</p> <ol style="list-style-type: none"> Has logical coherence. Appropriately divided learning blocks. Proper listing of items.
<p>D. Numeracy</p> <ol style="list-style-type: none"> The presentation of numbers is easy to understand. Avoids calculation. 	<p>E. Visual Aids</p> <ol style="list-style-type: none"> Has visual aids for explanation. The application of visual images is primarily used to aid message understanding. Visual images are not overly flashy, and do not distract readers' attention. Visual image messages are clearly presented and easy to understand. 	<p>F. Layout and Design</p> <ol style="list-style-type: none"> Use visual clues to facilitate reading. The layout is easy to read. Visual aesthetics and art editing. Clear audio and visual effects.

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Various units are invited to provide suitable teaching materials for sharing on a public platform every year

Health Promotion Module, Ministry of Health and Welfare 20

Health99 Website - A Public/Shared Platform for Health Literacy

Health Promotion Module, Ministry of Health and Welfare 21

Health 99+

- Health 99+ Website Optimization
 - Optimize the website interface for convenient browsing on both computers and mobile devices.
 - Membership: 107,920 people

<https://health99.hpa.gov.tw/>

Health Promotion Module, Ministry of Health and Welfare 22

Health 99+

- Health 99+ Website Optimization
 - Add a material list image viewing function.

Health Promotion Module, Ministry of Health and Welfare 23

Health 99+

Health 99+ Website Optimization

- ▣ Increase the precision of searches with multiple sets of keywords and customizable search criteria.

關鍵字:



Health 99+

Health 99+ Website Optimization

- ▣ Provide quick entry support for media and professionals.



Health 99+

Health 99+ Website Optimization

- ▣ Provide social medial sharing functions (Line, Facebook)



Health 99+

Health 99+ Website Optimization

- ▣ A "Shopping Cart" style browsing feature to allow multiple selections before requesting the materials all at once.



Health 99+

Health 99+ Website Optimization

- ▣ Addition of a new zone for medical inquiries, which provides options to download or email forms, and also offers additional reading materials.



Health 99+

Expand Health Education Zone Themes

- ▣ Chronic Disease Prevention Zone
- ▣ Menopause Health Zone
- ▣ Cancer Prevention Zone
- ▣ Mommy-to-be Health Zone
- ▣ Weight Management Zone
- ▣ Active Aging Zone
- ▣ Tobacco Control Zone
- ▣ Shared Health Zone
- ▣ Children's Health Section
- ▣ Healthy Youth Zone



Health Promotion Administration, Ministry of Health and Welfare – Health99 Website



<https://health99.hpa.gov.tw/theme/1>

HPA
Shared Health
Decision-making Zone

Nutrition standard setup

- Publish the latest version of Taiwan "Daily Dietary Guidelines" and "Daily Food Guides"
- Formulate the "My Meal" healthy eating graphics and mnemonic chant



The visualization of the Daily Dietary Guidelines



Six tips of My Meal for a healthy diet

Palm

Fist

Thumb tip = 1 teaspoon

A glass of milk twice a day

Fist-sized amount of fruits for every meal

Slightly larger amount of vegetables than fruits

Same amount of rice as vegetables

Palm-sized amount of protein foods

One teaspoon of nuts and seeds

My Meal song : <https://reurl.cc/NA8jlm>

衛生福利部國民健康署
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Nutrition(1)

一包鹹魚絲
居然就占了
1837 毫克

成人每日建議攝取量
不宜超過2400毫克

吃鍋進補 小心金鈣破表

高鈉湯底 (一鍋兩吃)

鮑菜白肉鍋 1950
麻桂鍋 1350
奧香鍋 1200

高鈉沾醬 (一鍋兩吃)

豆瓣醬 756
醬油 750
辣椒醬 742

！成人每日鈉建議攝取量不宜超過2400毫克！

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Nutrition(2)

常見火鍋料營養成分哩咿災

炸豆腐	肉丸	花枝丸	魚丸
熱量 47kcal	47kcal	42kcal	29kcal
油脂 3.9g	3.9g	1.8g	2.1g
鈉含量 0mg	16mg	14mg	54mg

吃蔬食鍋也能補充蛋白質！

綠豆腐	傳統豆腐	小方豆干	豆包
熱量 74kcal	70kcal	64kcal	63kcal
油脂 4.2g	2.7g	3.4g	3.3g

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Nutrition(3)

> 3 Tips for Choosing Chocolate for Couples to Spend Valentine's Day

情人節選擇巧克力的3要訣

1. 產品成分：可可含量、糖、脂肪、牛奶、牛奶巧克力、牛奶巧克力、牛奶巧克力

2. 包裝與標示：日期、產地、營養成分、成分表、成分表、成分表

3. 價格與品質：品質、品質、品質

巧克力含糖量大公開

德芙牛奶巧克力	金莎牛奶巧克力	吉百利牛奶巧克力
63.3g	51.9g	49.5g

巧克力的小知識

巧克力的成分：糖、可可、可可脂、牛奶、牛奶、牛奶

巧克力的種類：牛奶巧克力、牛奶巧克力、牛奶巧克力

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Other Issues to be developed...

Health Literacy Friendly Practices

- Community health literacy program
- Administrative leadership and management
- Feedback and guidance
- Health literacy program
- Improving oral communication
- Shared decisionmaking plans between doctors and patients
- Health literacy human resources
- Simplifying content forms
- Incorporation of the opinions of target groups
- Improving written communication
- Shame-free environment
- Health environment navigation
- Enhancing the readability of health education materials
- Clear and easy-to-understand

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Figure 23.1: The occupational health literacy

There are still many health literacy issues to be developed in following settings.

- Workplace
- School
- Community
- Indigenous communities
- Diverse ethnic groups
- Etc....

Organizational level (Policy, Plan, Performance etc.)

Interpersonal level (Organizational and colleagues)

Personal level (Personalized)

International Handbook of Health Literacy (2019)

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Your Health Companion!

– Safeguarding the Nation and Promoting Health!

Promotion

Prevention

Protection.

Participation.

Partnership!

Person-centered Care

Person engagement

Person empowerment

衛生福利部國民健康署
Health Promotion Administration, Ministry of Health and Welfare

Environmental health literacy assessment scale development for residents living near the petrochemical industries

衛生福利部國民健康署
Health Promotion Administration, Ministry of Health and Welfare

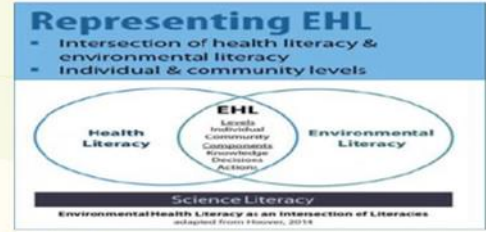
Association of environmental health literacy (EHL) with risk perception, avoidance behaviors, and trust for stakeholders among residents in Taiwan

Hsien-Wen Kuo¹, Chao-Chun Wu², Shu-Li Chia³, Shu-Ying Lo², Chien-Ming Chou², Ping-Yi Lin³, Wen-Miin Liang⁴, Mai-Chuan Chang⁵, Jung-Wei Chang³

¹Institute of Environmental and Occupational Health Sciences, National Yang Ming Chiao Tung University, Taipei, Taiwan
²Health Promotion Administration, Ministry of Health and Welfare, Taipei
³Department of Nursing, Chungkuang University, Taichung, Taiwan
⁴Department of Health Service Administration, China Medical University, Taichung, Taiwan
⁵Department of Nursing, Tu Chi College of Technology, Hualien, Taiwan.

2023/8/2 EHL in Taiwan The content of this research may not represent the opinion of the Health Promotion Administration, Ministry of Health and Welfare MDHW110DHPA-H-114-134404

$$EHL = HL + EL$$



What is environmental health literacy?

Introduction

Measurement of Environmental Health Literacy

- Ability of Accessing
- Understanding
- Appraising
- Acting for assessing the association between environmental factors and health risk



2023/8/2 EHL in Taiwan 3

Critical Literacy

Create = Evaluate

Interactive Literacy

Analyze = Apply

Functional Literacy

Understand = Recognize



Environmental Health Literacy as an Asset
 Adapted from Nutbeam 2000; 2008 and Finn and O'Fallon 2017

2023/8/2 EHL in Taiwan 4

Evidence of Petrochemical industry

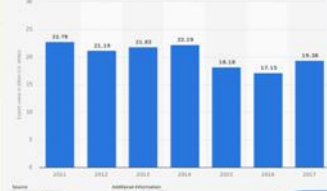
- Environmental pollutants associated with adverse health effects (Pan et al. 1994; Huang et al. 2016; Shun et al. 2021)
- High levels of pollutants (VOCs and metals) emitted from petrochemical industries (Yuan et al., 2022; Hsu et al. 2018; Yen & Horng, 2009)



2023/8/2 EHL in Taiwan 5

High economic values

Value of chemical product exports from Taiwan from 2011 to 2017 (in billion U.S. dollars)



2023/8/2 6

Motivations

- Frequently conflicts occurred in high pollution area
- Lack of evidence in measurement of EHL for residents
- Risk communication needs by high levels of EHL for population



2023/8/2 EHL in Taiwan 7

Materials and Methods

Study Population

Petrochemical area		non-petrochemical area
Southern	Central	97
60	46	

Mixed Methods

- Qualitative Interviews by focused group interview
- Quantitative methods by Questionnaire interview

2023/8/2 EHL in Taiwan 8

Questionnaire design

1. Literature reviewed and focused group (content analysis)
2. Pretest by small group (N=20 peoples)
3. Reliability test (Cronbach's alpha =0.89)
4. Content validity (CVI=91.0%) and structure validity (Confirmatory principle analysis for four domains)
5. EHL included four domains of accessible, understanding, appraisal, and action/application.

2023/8/2

EHL in Taiwan

9

Statistical analysis

- 1. One-way ANOVA : to examine the association between demographics and EHL, EK, ATE, RAB, EAE, DOS, and SOI.
- 2. Multiple linear regression after adjusting for age, gender, and education: adjusted scores of EHL, EK, ATE, RAB, EAE, DOS, and SOI among the three groups
- 3. Interactive effect and mediation effect : EHL and ATE on RAB, EAE, and DOS.

2023/8/2

EHL in Taiwan

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Results ① Age and educational level affect EHL

	Accessible ability (20)	Understanding ability (20)	Appraisal ability (25)	Action ability (15)	Total EHL
Area					
Non-petrochemical	13.3±1.0	11.7±1.2	17.4±1.3	11.3±1.3	53.7±10.8
Southern Petrochemical	13.4±1.5	12.4±1.0	17.5±1.5	10.3±2.5	53.5±11.0
Central Petrochemical	12.8±1.7	13.1±2.3	16.4±1.2	11.6±2.3	52.9±2.2
p	0.802	0.025	0.348	0.035	0.823
Gender					
Male	12.9±1.2	12.5±1.0	17.4±1.8	11.3±2.3	53.9±12.1
Female	12.3±1.5	12.0±1.0	17.2±1.0	10.9±2.1	52.4±9.5
p	0.278	0.285	0.648	0.278	0.348
Age(years)					
20-39	11.3±1.0	11.3±1.1	16.7±1.8	10.5±2.3	49.6±11.9
40-59	13.7±1.1	12.4±2.3	18.6±3.2	11.7±2.0	56.4±8.0
>=60	12.1±1.9	13.5±2.9	15.4±1.6	10.8±2.4	51.4±10.3
p	<0.001	0.001	<0.001	0.003	<0.001
Education level					
<Senior high school (N=70)	11.2±1.0	12.0±1.4	15.6±1.9	10.5±2.6	49.8±12.3
College/university (N=90)	12.8±1.6	11.8±1.0	17.9±1.0	11.4±1.9	53.9±9.7
> graduate (N=33)	14.3±2.8	12.7±2.0	18.9±2.5	11.5±1.8	57.6±5.4
p	<0.001	0.230	<0.001	0.010	0.003

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EHL in Taiwan

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② Area were significant differences regarding EK,EAE,MTO

	Environmental Knowledge(EK)	Attitude toward environment(ATE)	Risk Avoidance behaviors(RAB)	Environmental action Experiences(EAE)	Mistrust toward outsiders(MTO)	Sources of information(SOI)
Area						
Non-petrochemical	24.1±2.2	27.2±1.8	27.3±1.6	31.9±1.5	15.1±1.2	20.9±1.5
Southern Petrochemical	23.9±2.2	27.4±1.2	28.7±1.5	33.7±1.6	15.8±1.4	21.4±1.4
Central Petrochemical	20.6±1.5	27.4±1.7	28.6±1.9	27.8±1.3	14.2±1.0	20.8±1.4
p	<0.001	0.697	0.087	<0.001	0.023	0.486
Gender						
Male	23.1±1.9	26.6±1.3	26.8±1.9	31.1±1.7	14.9±1.3	20.2±1.9
Female	23.4±1.1	27.9±1.4	28.7±1.4	31.9±1.6	15.2±1.8	21.3±1.6
p	0.475	0.033	0.006	0.415	0.504	0.095
Age(years)						
20-39	23.5±1.2	27.3±1.4	27.3±1.9	31.5±1.9	15.7±1.0	19.9±1.0
40-59	24.3±2.2	27.7±1.5	28.3±1.3	32.5±1.0	14.7±1.0	21.3±1.2
>=60	21.3±1.5	27.1±1.4	28.7±1.6	31.6±1.2	14.9±1.9	21.0±1.2
p	<0.001	0.772	0.188	0.116	0.093	0.065
Education level						
<Senior high school (N=70)	22.3±1.0	27.5±1.9	28.8±1.2	31.2±1.7	15.1±1.5	21.3±1.2
College/university (N=90)	24.0±2.0	27.4±1.5	27.3±1.2	32.1±1.2	15.0±1.3	20.9±1.2
> graduate (N=33)	24.6±1.6	27.7±1.3	27.9±1.4	31.8±1.6	15.8±1.9	21.5±1.7
p	<0.001	0.931	0.105	0.599	0.420	0.194

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EHL in Taiwan

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③ Three Group found significant differences regarding EK,EAE,MTO

	A. Non-petrochemical residents N=97	B. Southern petrochemical residents N=60	C. Central petrochemical residents N=46	P1 A-B	P2 A-C
EHL	52.67±1.16	55.38±1.39	52.94±1.76	0.894	0.271
EK	23.73±0.30	24.29±0.36	21.30±0.44	<0.001	<0.001
ATE	27.17±0.54	27.87±0.64	27.24±0.80	0.943	0.528
RAB	27.44±0.53	28.58±0.63	28.09±0.78	0.480	0.617
EAE	31.69±0.66	33.93±0.78	27.88±0.94	0.001	<0.001
MTO	15.24±0.35	15.97±0.41	14.52±0.50	0.226	0.024
SOI	20.98±0.52	20.53±0.62	21.25±0.75	0.755	0.448

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EHL in Taiwan

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④ Some significant differences founds regarding EK,EAE,MTO

	EHL	KTE	ATE	RAB	EAE	MTO	SOI
KTE	0.186**	1.0					
ATE	0.083	0.165*	1.0				
RAB	0.060	0.089	0.300**	1.0			
EAE	0.295**	0.493**	0.200**	0.151*	1.0		
MTO	0.133	0.469**	0.077	0.091	0.166*	1.0	
SOI	0.355**	0.090	-0.041	-0.101	0.325**	0.254**	1.0

*p<0.05, **p<0.01, ***p<0.001

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EHL in Taiwan

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⑤ Higher scores in both EHL and ATE have significantly higher scores in RAB,EAE,MTO

EHL	ATE	Risk avoidance behaviors(RAB)	Environmental action Experiences(EAE)	Mistrust toward outsiders(MTO)
Low	Low	26.7±1.0 [Ref]	28.1±1.1 [Ref]	14.9±0.6 [Ref]
High	Low	27.8±1.1	31.3±1.3*	14.8±0.7
Low	High	28.4±1.0	29.4±1.2	14.8±0.7
High	High	29.1±1.0*	31.9±1.2**	16.3±0.6**

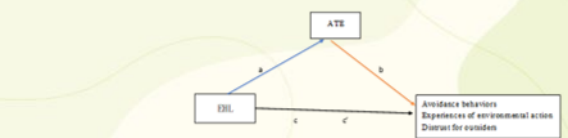
*p<0.05, **p<0.01, ***p<0.001

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⑥ ATE affect RAB,EAE, EHL affect EAE



	a	b	c	c'	Indirect effect (%)
Risk avoidance behaviors(RAB)	0.031(0.034)	0.263***(0.072)	0.036(0.034)	0.029(0.033)	22.0
Environmental action Experiences(EAE)	0.031(0.034)	0.226*(0.096)	0.156***(0.042)	0.146***(0.042)	4.6
Mistrust towards outsiders(MTO)	0.031(0.034)	0.042(0.050)	0.037(0.022)	0.037(0.022)	3.4

*p<0.05, **p<0.01, ***p<0.001

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Conclusions

Environmental Health Literacy

+

skills and risk avoidance behaviors

↓

Decisions for health protection

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Conclusion

2. Community -based participatory research needs to bring the potential influence to enhance EHL for all

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3. Conclusions

- The significance of EHL lies in its potential to **empower individuals** to become more active and **engaged in protecting** the environment and promoting their own health.
- It is crucial to **increase EHL for residents** living near to petrochemical factories.

EMPOWER

RISK AVOIDANCE RISK TAKING

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Health education posters posted in Communities

Promotional leaflet

石化工業區 環境健康能 人包

Citizen's awareness using promotional document and video

Dissemination by Social media (FB, Line)

THANKS FOR LISTENING

MCHW110-HPA-H-114-134404
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三、與會專家合影



圖 67 與AHLA理事長Prof. Angela Leung及所有講者在講台前共同合影



圖 68 與澳洲雪梨大學Don Nutbeam教授