

科技部補助專題研究計畫成果報告 期末報告

認知、態度、與身體性別關係：醫學教育中的醫學生同儕
身體檢查之探討

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中文摘要：本研究探討當代醫學教育脈絡下的同儕身體檢查所反應出的性別身體政治。本文以某大學醫學系四年級的同儕身體檢查課程為例，將之放在當代醫學教育的背景之下，探討在課程中出現的性別現象及其意義。分析的材料主要是授課教師的訪談及修課學生的問卷與焦點團體訪談。研究結果顯示，身體檢查課程的設計反映了晚近醫學教育中「同理心」的理念，學生不僅需要練習理學檢查的基本技術，同時也需要接受檢查，以體驗受檢查者的感受。然而，此一理念在幾項特定的檢查項目時引起了檢查者與受檢查者雙方程度不同的不舒服、尷尬甚至抗拒，這些包括女學生的胸部、乳房檢查、女學生的婦科檢查及男女學生的肛門指診。少數學生甚至認為，日後進入臨床接觸真正的病人時仍可學習這幾項檢查的技術，且這些檢查所帶來的不舒服感遠超過培養同理心的效果。

雖然歷來有不少的醫療教育者主張，學生作為未來的專業者，其專業訓練即在於抹除或習慣這類身體或心理反應，如面臨疾病與死亡的情緒抽離，但是學生的反應凸顯了醫學教育脈絡與醫療化脈絡的差異。在醫學教育脈絡下，許多的身體政治，如異性之間相互檢查身體隱私的部位，仍然遵循一般社會脈絡下的規範。學生認為在醫療化的情境之下，為醫療所需，如病人疾病的有無、正常與否的確認，身體檢查有其必要性，因而如此的身體性別政治所引起的不安與尷尬成為可被接受的。教師與學生的差距，顯示出的是專業訓練的爭議（同理心）背後的身體性別政治文化。

中文關鍵詞：同儕身體檢查、性別、醫學教育、同理心

英文摘要：The Gender Politics of Peer Physical Examination in Contemporary Taiwan Medical Education

This project has examined the gender politics of Peer Physical Examination (hereafter PPE) in contemporary Taiwan medical education. We studied the PPE course, which is a required course in the fourth year in the Department of Medicine in a University in Taiwan. We conducted interviews with several teachers and focused group interviews with medical students. Two surveys on students were also carried out. In order to understand the importance of the gendered aspect of PPE, we need to first understand the circumstances in which the course PPE emerged. The course PPE should be understood in the context of recent trend

in medical education in which, as a response to criticisms on the medical profession, much emphasis has been placed on the cultivation of sympathy. Therefore, the pedagogical purposes of PPE are two folds--not only should students learn the skills of how to do physical examination, but they are also expected to experience how their future patients might feel when being examined. However, the two purposes are compromised by the fact that some of the examination items often cause some unease or embarrassment to both the examiner and the examined. These are ones that are carried out on private body parts, including women' s chest, reproductive organs, and digital rectal examination. With the exception of DRE, all the others are gendered and corresponding strategies are being employed—women students are paired with women students, or even exempted from breast and pelvic exams. A few students even suggested that sympathy is not something that can be trained, at least not by taking PPE. Despite the fact that the training of the physician' s emotional quality has a long history, including keeping distant from the potential drama of life and death that he or she might encounter in clinical practice, students response to PPE reflects a distinction that is being made between educational and medical settings. For those examinations that might cause uneasiness, they prefer to learn the skills in a clinical setting in which the medical need can justify the uneasiness. In other words, the gender politics in the classroom has not been medicalized and is also one of the forms of regulation of heterosexuality.

英文關鍵詞： peer physical examination, gender, medical education, sympathy

研究計畫期末報告

當代台灣醫學教育中同儕身體檢查的性別身體政治

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本研究以某大學醫學系四年級的同儕身體檢查課程為例，探討當代醫學教育的性別身體政治。主要分析的材料是授課教師的訪談及修課學生的兩次問卷與三次焦點團體訪談。身體檢查課程的設計理念反映了晚近醫學教育對培養未來醫者「同理心」的重視，學生不僅需要練習理學檢查的基本技術，同時也需要接受檢查，以體驗受檢查者的感受。研究結果顯示，在實際課程中，無論師生，依據項目與身體性別關係的密切程度，而有不同的實施狀況與因應策略。有些項目通常會直接被略過不練習，尤其是一些容易引起檢查者與受檢查者雙方不舒服、尷尬甚至抗拒的項目，包括女學生的胸部、乳房檢查、男女學生的生殖系統檢查，少數的學生則是以男女朋友作為練習的對象。而男女學生的肛門指診，由於不僅容易尷尬也有生理上的不適，則施行情形不一，端看個別授課老師的態度。

除了肛門指診均使男女學生均造成不舒服感之外，其它引起不安的檢查項目均高度性別化，並且遵循一般異性戀體制下的身體性別政治，即女性的某些身體部位不宜暴露或被觸摸，尤其當接觸者為男性時更需要避免。針對如此的情形，多數學生的想法，日後進入臨床接觸真正的病人時仍可學習這幾項檢查的技術，且這些檢查所帶來的不舒服感遠超過技術訓練及培養同理心的效果。更何況學生尚有其他學習的方式，包括標準病人、觀看教學錄影帶等等。從這些練習與不練習及施行與否的策略看來，在教學脈絡下的身體接觸，仍遵循了所謂的性的調控 (regulation of sexuality)，即異性之間身體具有潛在性暗示的接觸仍須避免。

雖然歷來有不少的醫療教育者主張，學生作為未來的專業者，其專業訓練即在於抹除或習慣這類身體或心理反應，如面臨疾病與死亡的情緒抽離，但是學生的反應凸顯了醫學教育脈絡與醫療化脈絡的差異，及性別身體權力關係(女性避

免成為受檢者或身體被接觸者)。在醫學教學脈絡下，異性之間相互檢查身體隱私的部位，仍然多少遵循一般社會的性別身體規範。學生認為在醫療化的情境之下，為醫療所需，如病人疾病的有無、正常與否的確認，身體檢查有其必要性，因而如此的身體性別政治所引起的不安與尷尬成為可被接受的。教師與學生的差距，顯示出的是專業訓練與身體性別政治文化之間的張力。

同儕身體檢查課程

同儕身體檢查(Peer Physical Examination，又稱為同儕理學檢查)課程，主要在於訓練學生身體檢查的技能，是基礎的醫學訓練。身體檢查(physical examination)在醫療行為中是極重要的一環，詳實的身體檢查配合病史詢問，能讓醫師能在看診時，釐清病人的問題，以安排後續實驗室或影像檢查，給予病人正確的診斷及治療。在現行台灣的醫學教育中，一年級到三年級間主要課程為生物醫學基礎知識，包括生化、藥理、生理、病理等等，而關於人體構造，則是以解剖學奠定基礎。對於醫學生而言，除了書本上的知識之外，更重要的是醫療實作技巧，尤其是未來面對病人時正確的態度與技能，後者的訓練通常在四年級到七年級(102學年度起改為六年)進行。身體理學檢查是醫生靠自己的雙手，以及一些基本的隨身檢查器具，例如聽診器、筆燈、扣診槌、棉花棒等，實際接觸病患的身體，評估器官的機能表現，五官、頭頸部、肺部、心臟、腹部臟器、神經系統、生殖系統、骨骼肌肉，可說是醫生極重要的基本功夫，重要性不言可喻，一般醫師也認為無法被儀器取代。

身體檢查已有國際公認的步驟及執行的方式，醫學生學習身體檢查則有多種方法，包括最傳統的由老師帶著學生直接在病患身上練習，進展到讓醫學生事先看教學錄影帶學習，或是以模型模擬，或是在以志願者接受訓練後充當的「標準病人」(standard patient)身上學習；同儕身體檢查(Peer physical examination, PPE)則是一種讓醫學生們以同學間互相練習的方式，訓練身體檢查的能力。

除了醫學系之外，護理系也有一門類似的課程「身體評估」。過去護理系學生均為女性，1980 年代也開始有男學生入學。因此，身體檢查與評估課程中，男女生雖一起上課，但實習操作時，則男女分開練習。男生若需練習檢查乳癌，則使用模型，有男學生會以女朋友為練習對象。¹

如此，這一門課有幾個特殊性。其一，就授課教師的組成而言，多數是家庭醫學科的醫師，如此也形塑此課程的相關條件，例如，可以接觸哪一類的病人。家醫科強調預防醫學，且扮演臨床的第一線，並沒有病房，因此臨床教學方面，所能接觸的病人均為門診病人，教學的內容相對較少。

另一個特性也與家庭醫學科主導高度相關，²那就是相對於其他科別而言，在家醫科的脈絡下，身體檢查有其重要性。我們從家醫科的中心理念可見一斑，「提供民眾連貫性、整體性、協調性、預防性的醫療照顧，同時能結合生理、心理及社會三個層面來探究民眾的健康問題，使民眾及其家庭成員得到完整的全人醫療。」³相較於其他科別，家醫科同時也是較重視醫病關係。根據授課教師之一，提供仔細的身體檢查能建立病人對醫師的信任。在醫療儀器主導的當代，詳盡的身體檢查被視為是能夠建立良好醫病關係的重要方式之一。⁴授課教師認為即便是儀器相當發達，身體檢查仍有其重要性，可以初步發現疾病或問題，而儀器則是最後確認。良好的身體檢查可以避免儀器檢查的浮濫，因為它可以初步排除不必要的檢查。受訪者也提及，早期醫學訓練出來的醫師的《身體檢查技術都相當純熟——「像教我們的那時候的 PE 的老師是非常厲害。...他就摸甲狀腺他就說這個 30 克，喔，天哪怎麼知道 30 克。」⁵

在這樣的背景之下，同儕身體檢查作為一門醫一學系必修課，其教學理念主

¹ 王棋珍，〈醫護教育的身體檢查〉，性別與健康國際研討會，成功大學，2012。

² 各醫院成立家庭醫學科大約是在 1980 年代初期，而台灣家庭醫學科學會則成立於 1986 年，可說是相對年輕的專科。

³ 高醫附設醫院家庭醫學科沿革，<http://www.kmu.org.tw/www/fm/lm02a.htm> 讀取日期，2014/11/06。

⁴ 戰後以來由於醫療技術與儀器的發達，許多的醫療診斷逐漸仰賴儀器，牽動了許多的改變，包括特定疾病的興起，及醫師診斷手藝的式微。參考蔡玲雅、王秀雲〈從觸診到以管窺天：腹腔鏡與子宮內膜異位症的興起，1950s-2000s〉，科技醫療與社會，10(2010):73-128。

⁵ 受訪者 Y 醫師。

要有二，其一是訓練學生基本身體檢查的技能，其二則是同理心的培養。前者除了具有專業技能訓練的意義之外，也是基於上述的理念，良好且仔細的身體檢查有助於醫病關係，讓病人感受到醫師的關心。就後者而言，主要是讓學生有機會成為被檢查者，希望透過這樣的經驗能夠在未來同理病人的感受。根據受訪者 Y（1987 年 K 大醫學系畢業），早期的 PE（理學檢查）課程並沒有納入同儕身體檢查，主要是讓學生自行練習。至於何時開始加入同儕的檢查作為訓練學生的方法則不得而知。

從授課老師之一的問卷顯示，同儕相互檢查的優點為 1.由學生示範老師補充指導，可使同學發揮自我學習的負責態度。2.讓同學學習團隊合作完成互練準備的精神與實際。3.可經由互練體會到當醫師檢查病人碰觸病人的實際感受，而能在未來的學習提醒自己應補足的知識與態度。4. 可經由互練**體會到當病人被醫師檢查時的緊張或不安感受**，未來當醫師時較能體會當病人的感覺，而能在檢查時呈現同理的檢查態度與技巧。5.讓同學有彼此一起有更為親密相互學習的同甘苦友情。而其缺點則為：1.不管是否同性別相互檢查，都會有身體相互觸摸的尷尬感受。2.女性同學在互練示範會局限在較沒有碰觸敏感之部位。3.乳房檢查使用模型較無機會真正體會碰觸病人的真實感。4.相互檢查的同學都是年輕正常，無法學到異常的發現，只能靠病房學習補足。5.當醫師之同學若不會作時，當病人的同學常會暗示或先擺好檢查姿勢等被檢查，故會高估同學的檢查能力。

雖然這位授課教室明白表示，該課程並無教學上的困擾，但從這些優缺點的並列也可以看出教學理念與實際性別身體規範之間的衝突。

同儕身體檢查意味著學生不僅是檢查者也必須接受同學的檢查，成為被檢查者。學生作為在被檢查者偶而會引發疑義甚至有性騷擾的指控。例如，2008 年某技術學院護理系學生於身體評估時被要求簽署裸露同意書，「為了教學必須同意裸露」的性騷擾指控⁶。該事件的主要癥結是學生感受到被迫簽署同意書，且

⁶ 〈《學生異議》只准貼胸貼「另類被性騷擾」〉，《自由時報》，2008。

所同意的內容，需在全班同學前脫掉上衣，引起不安。學生的質疑，根據報導，「為什麼一定要讓自己的胸部在只准貼胸貼的情況下，讓所有的同學們觀看、讓老師觸摸？她認為照顧病人的身體是應該的，但並不表示護士就應接受私密部位被他人接觸觀看。」⁷類似如此的態度也可見於醫學教育中，也就是說學生願意檢查或是照顧病人的身體，但是對於自己的身體成為被檢查或練習的對象則較有可能抗拒。

值得注意的是，這些指控引發了不同立場者的說法。如教育部持「尊重學生隱私權」的立場；法界則認為老師於上課時令學生進行某些檢查恐怕有觸法之虞，且簽署裸露同意書根據民法，「法律行為違反公序良俗者無效」，所以同意書恐怕是無效的；亦有所謂學生保守之說，或說外國這類課程老師如何開放（裸胸）讓學生練習等等。這些種種的爭議其背後反應的是性別身體規範，也是一種性的調控制(regulation of sexuality)。

同儕之間相互檢查是身體檢查課程中重要的教學策略。學生作為檢查者相較於作為被檢查者，問題性及其程度並不相同，學生作為受檢者的情形較易引起不安。也因此，有些檢查項目就略過不做。

進一步來談，有些項目雖然男女均可接受，但有明顯的性別差異，且程度不一，有的僅需同性進行，有些則需要隱密空間。例如，胸部檢查。「如果要就是脫衣服什麼的，當然都是叫男生了....如果是女性如果說女性要互相檢查，他們一定都還是會到就是一個比較隱密的空間去」⁸

從歷史的角度來看，身體檢查並非是理所當然的。直到近代以前，很少有醫者會接觸病人的身體，於行醫時仍然遵循一般社會的禮節。直到近代醫學的發展對於生理解剖學的重視，身體檢查逐漸成為常規的醫療程序，同時也納入成為醫學教育中的內容。不過，早期的身體檢查訓練著重於檢查者的技術，並無讓學生成為受檢查者，因此並無同儕相互檢查的制度性設計。

⁷ 同上。

⁸ 學生焦點訪談，1/31/2013。

而醫療化更進一步地合理化身體檢查的常規性，然而在教學的情境中，並非醫療的情境，一些所謂的敏感部位的檢查於是便處於性別身體規範與醫療專業訓練的衝突之中。

本研究所呈現的問題值得進一步深入探討，尤其是身體檢查課程在不同歷史脈絡下的授課與學生的學習方式。在當代的脈絡下，同儕身體檢查處於不同規範的衝突之中：一方面有來自醫學教育對於同理心的想像，期待學生也能扮演受檢查者而同理病人的感受。另一方面，課堂中的學生的身體並非醫療化情境下的身體，女性學生對於要成為受檢者需要暴露身體的隱私，仍然感到不舒服而會有所抗拒。

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參加國際研討會報告

2014 American Association for the History of Medicine, Chicago

議程：

http://histmed.org/documents/AAHM2014_preliminaryprogram.pdf?_ga=1.7180145.256239739.1397294054

此次研討會由美國醫學史學會與芝加哥大學醫學院合辦，無論是議程內容或是大會安排的參訪均相當豐富。有幸參加此次研討會，keynote speech 由即將卸任會長(2012-2014)Nancy Tomes 主講 “Whatever Became of Good Old Doc?” The Image Crisis in American Medicine, 1945-1965”探討 1945-1965 之間美國醫師的形象，涉及了醫師的地位、收入等等問題。

最值得一提的是筆者也參加了會議期間的兩場午餐論壇，分別是由研究人體試驗的歷史學者 Susan Reverby 所主持的有關 IRB 及醫學倫理與研究倫理的討論，When Good People Do Bad Things: Can History Intervene? 及 Joanna Radin 所主持的 Medical History and Medical Anthropology。前者討論了 IRB 的一些問題，包括沒有達到原先設定的目標，同時也批評生醫倫理有時淪為本質化。有些機構的 IRB 審查也有淪為營利導向的狀況。

最後，筆者有幸能在此研討會上發表論文，同一場次另一位發表者恰好為一位甲狀腺外科醫師，於發表前後有不少的交流。另外聽眾中也有人正進行相關研究，將來可望持續交流。

以下為筆者發表之論文全文。

2014 AAHM Chicago

“Atomic Bombs” or the Knife: Competing Treatments for Hyperthyroidism since
WWII in Taiwan

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“Some doctors ‘misdiagnosed’ or ‘intentionally misdiagnosed’ patients, and treated cases of anxiety disorder as thyrotoxicosis. They even cut off patients’ thyroids....

Whoever has the above symptoms should go to a reliable physician or hospital for

detailed and correct examination.”ⁱ (Zheng Tai-an, M.D., 1978)

“In some hospitals in central and southern Taiwan, whenever they see a patient with a thyroid tumor, [regardless of its nature] they all resort to surgery.” (Liao Kuang-yi, M.D., 1980)

Thyroidectomy—the surgical removal of the thyroid—has been a treatment for both goiter and hyperthyroidism since the early twentieth century. In the case of hyperthyroidism in the West after WWII, however, radioactive iodine (RAI) became the standard treatment, while surgery came to be used only in special circumstances such as ophthalmopathy (i.e., eye problems).ⁱⁱ In East Asia, Koreans likewise came to resort to RAI in most cases [after WWII].ⁱⁱⁱ In contrast, even though RAI was introduced to Taiwan in the 1950s, surgery remained the dominant approach until at least the late 1990s. As the opening quotations suggest, thyroidectomy was excessive in post-WWII Taiwan across various contexts of misdiagnosis and over-reaction, including benign tumor cases.

Today, the treatments for hyperthyroidism include surgical removal of the thyroid gland, anti-thyroid medication, and radioactive iodine (RAI, nicknamed the atomic cocktail). Currently, there are approximately 10,000 thyroidectomies being performed annually in Taiwan.^{iv} During the period between 2000 and 2004, according to National Health Insurance figures, among 1157 new cases of hyperthyroidism, 949 (82%) took anti-thyroid medication, 202 (17.5%) received surgery, and only 6 cases (0.5%) used RAI treatment.^v Since the remission rate is high for anti-thyroid medication treatment, surgery and RAI are seen as the more permanent solutions.

This paper traces the history of the competing treatments for hyperthyroidism^{vi} in Taiwan since WWII, especially surgery and RAI. By doing so, I suggest that what was seen as the best treatment is historically contingent, depending on the social and material conditions of the treatment chosen, such as practitioners' skills, technological capacity, and patients' preconceptions. The fact that surgical clinics became relatively widely established after WWII and the limited access and handling of radioactive iodine are the two most critical aspects of the history. RAI and thyroidectomy co-existed as the treatment options, yet the two flourished in very different cultural contexts. The rivalry between the two reveals the tensions that existed between a number of medical specialties: internal medicine, psychiatry, surgery, and nuclear medicine.

Surgery

The dominance of surgery in medicine from the early twentieth century and the prevalence of thyroid goiter in Taiwan are two crucial aspects of the history of thyroidectomy. Since the introduction of missionary medicine in the nineteenth century, surgery was a distinguishing characteristic of western medicine. Among the main characters of surgical medicine in Taiwan were George L. Mackay (1844-1901) and David Landsborough (1870-1957). The surgical clinic was a common establishment throughout Taiwan by the mid-twentieth century.^{vii} In the popular media, medical journals, and recollections of surgeons, surgical achievements were often celebrated as "medical breakthroughs," which included operating on esophagus tumors, techniques for cutting parts of the liver, cutting the thyroid and stomach, and other surgical interventions. Surgeons also established their fame and authority based on certain surgical procedures.

One of the reasons surgeons were able to develop their surgical skills was the

fact that endemic goiter was a serious issue, and surgeons had abundant opportunity to do thyroidectomy. According to a survey published in 1940, its prevalence was 6.68% in Taipei, Taiwan, compared to 0.88% in Sapporo, Japan. The same survey also compared different ethnic groups in colonial Japan—Japanese 18%, Taiwanese 44.7%, and aborigines 61.1%. Goiter was also more prevalent in certain areas than others, and in the prevalent areas, even the pigs had a higher rate of goiter. The government of Taiwan initiated an iodine-salt project in 1958 and full coverage was completed in 1967, after which the goiter problem greatly improved. Yet, it did not completely vanish, and public health experts pointed to the problem of the source of drinking water. Island-wide running water did not become available until late 1980s.^{viii}

During the early decades of the twentieth century, surgical removal of the thyroid gland was offered by medical missionaries and western-trained Japanese surgeons.^{ix} (Taiwan was under Japan in the period between 1895 and 1945). For example, Sawada Heijirou (澤田平十郎), one of the leaders of Taipei Imperial University (now National Taiwan University) during the colonial period, was known for his thyroidectomy technique. Li Tien-yu (1913-1995), one of the prominent surgeons at National Taiwan University Hospital, remembered the thrill of doing thyroidectomy as an intern during the 1930s.^x Harry Miller (1879-1977), the American medical missionary who travelled around Asia, was also known for his surgical itinerary.

Yet, surgery was not always a good solution, at least before the 1970s. Reports of post-surgical death were not uncommon in the newspapers. For example, in 1953, surgeon Fu Chu Xiu performed a thyroidectomy on his cousin, Fu Ying Mei. A few hours later, the patient died from heart failure due to a drastic change in blood pressure.^{xi} Cases of death probably served as a form of regulation on the extent to

which a surgeon might be inclined to do surgery. Thyroidectomy, as a type of surgery, was seen as a procedure of moderate difficulty.^{xii} Compared to other surgeries, it was not the most frequently performed type. For example, during the year 1958, the annual statistics of Xu Clinic in Kaohsiung City, there were 127 cases of thyroidectomy, 12% of all total surgeries (1044).^{xiii}

However, some surgeon still made their fame by doing thyroidectomy. Take the aforementioned Harry Miller of the Seventh Day Adventist Hospital (later Taiwan Adventist Hospital) as an example. A news report marveled at his achievement: “During the 1920s, he was traveling around in Asia, and he performed 6 to 8 thyroidectomies daily. He had done about 3000 surgeries, and other surgeons remarked on how incredible this was.^{xiv} Miller began his missionary career in Asia in 1903, and he established the Seventh Day Adventist Hospital in 1954 in Taipei.^{xv} According to Miller’s biography, Miller had successfully reduced the mortality rate after surgery from 50% to 1%, and throughout his life he performed a total of 6000 thyroidectomies.^{xvi} Miller’s case reveals the true importance of thyroidectomy. In addition, Miller traveled around Asia to demonstrate his surgical technique. Due in part to the reduced mortality rate and the flourishing of surgical clinics during the 1960s, by the 1970s thyroidectomy became one among a number of excessively performed surgeries in Taiwan (the others were hysterectomy, stomach removal, and appendectomy).

Many contemporary accounts in the media indicate that cutting off certain body parts became very common in the 1970s, including hysterectomy, stomach removal, and appendectomy. In 1977, a legislative Yuan member Wei Pei-lan raised the question of surgical abuse: “Certain medical practitioners, in order to make money from labor insurance, have performed unnecessary thyroidectomy on women laborers.”^{xvii} Three years later, a National Taiwan University hospital surgeon, Liao

Kaung-yi, was quoted as saying, “Spare the knife, thyroid tumors may be malignant or benign, not all require surgery.” He also accused some hospitals in mid- and southern Taiwan as follows: “Whenever they see patients with thyroid tumor, they all use the knife.”^{xviii} By 1994, there were rumors of “thyroid-less villages” along with rumors of “uterusless villages.” There are certainly differences between hysterectomy and thyroidectomy, yet both uterus and thyroid were allegedly among the most frequently cut off main body parts. In the meantime, probably as an attempt to regulate the practice, the Taiwan Surgical Association and the Endocrine Society of the Republic of China also published a White Book for Thyroid, their recommendation was to use anti-thyroid medication first, and do surgery only after the physician’s evaluation determined it necessary.^{xix}

The Emergence of Radioactive Iodine

After WWII, the establishment of nuclear medicine as a specialty, in addition to advances in knowledge of the function of hormones, brought about different treatment options for hyperthyroidism.^{xx} Beginning in the 1950s, radioactive iodine (RAI) treatment imported from the US (where it had first been used on patients in 1942)^{xxi} became available and was presented by its promoters as one of the major breakthroughs of the nuclear age—as the biomedical application of physics. . Being a radioactive substance, it was tightly regulated in terms of its manufacture, handling, transport, storage, and application. It also requires special equipment, such as devices to protect against the radiation. Not surprisingly, RAI was preferred by internists but ran into successful opposition by the surgical tradition that had established its authority and popularity in Taiwan by the late 1960s.

In the early 1950s, Western-trained scientist Wu Jing announced in Taiwan that the twentieth century was the nuclear age, and that medicine had also followed this

trend, such that “radiation has claimed [mastery?] over the diseases that cannot be cured by medications and surgery.”^{xxii} This proved to be the prelude to the institutionalization of nuclear medicine in Taiwan, leading to the establishment of the Research Institute of Nuclear Medicine in 1956, with Dr. Wu as the director (Wu was also the Head of the Taiwan Department Health). The mission of the institute was to do research on nuclear medicine, and it also hired “internationally renowned scholars from abroad.” Its projects included the use of radio-isotope ⁶⁰Ku for clinical application, radioactive iodine 131 for thyroid diseases, phosphorus 32 for leukemia, and Au (gold)-198 for treating pleural effusion and ascites.^{xxiii} Other medical institutions such as the Taipei Veteran’s Hospital also established labs for radioactive iodine and scanning lab during the 1950s.^{xxiv} National Taiwan University established an isotope research center in 1957, emphasizing the following fact: “There are one thousand hospitals in the U.S. that are equipped with radioactive iodine treatment. In the future when National Taiwan University Hospital can purchase radioactive isotopes, iodine 131 and ⁶⁰Ku will be our priority.”^{xxv}

In the same year, iodine 131 was introduced to Taiwan and used on patients. For this special occasion, the hospital held a ceremony.

“Yesterday National Taiwan University Hospital began the use of radioactive iodine treatment on patients, which enables Free China to usher in a new era for the peaceful use of nuclear energy. In order to show the importance of this event, this first pill of radioactive drug was dropped into the mouth of the first patient by the Minister of Education, who is also the chairman of the Nuclear Power Committee.... This ceremony is taking place in the Research Center for Radioactive Medicine.. This was the most meaningful and most prosaic of ceremonies, since there were no unnecessary procedures, no speeches—only Minister Chang dropping a pill into the

mouth of a patient, the patient swallowing it with water, and the ceremony was over.”

“According to the head of the National Taiwan University Hospital, because of the support of the Atomic Energy Council and the Department of Health, they were able to purchase the drug and transport it to Taiwan. From now on, based on a contract with the U.S., radioactive iodine will be available. Radioactive iodine is best for treating hyperthyroidism, and the patient yesterday was indeed suffering from hyperthyroidism. The half-life of radioactive iodine is only 8 days, which poses a challenge for storage. It is ordered on demand; it will be air transported from the US upon request.... [T]he cost for air transport is especially high. The eight pills arrived last Friday and after today they will lose radioactivity...”^{xxvi}

Iodine 131 and nuclear power were heralded as scientific progress for peace. The significance of the event to nation-building and political stage-craft (including, most importantly, recognition of U.S.-Taiwan ties) is signaled by the fact that the Minister of Education and Director of the Atomic Council should be the person who “dropped” the pill into the patient’s mouth. It’s as if an analogy were being made between the radioactive pill and the atomic bomb. Little wonder that even after 2000, some internist still found himself busy explaining to the general public that RAI is NOT an atomic bomb.

Apparently, medical institutions and elites were eager to promote RAI, and several hospitals started research centers. By the end of the 1950s, Iodine 131 was seen as the alternative to surgery, and several papers were presented at medical meetings.

“Many men and women in Taiwan suffered from hyperthyroidism. In the past, surgical removal of the thyroid was a must.... Yang Hsueh-fang, Kao Tien-cheng, Wang Kuan-chu, Chang Chien-yao, Ho Chao-Ming, and Chen Ruei-san, of the National Taiwan University Isotope Research Institute gave a paper today at the annual meeting, and they explained that the application of radioactive iodine as a treatment for hyperthyroidism. This would make surgery unnecessary. For thyroid patients, this is good news. They have been using radioactive iodine to treat thyroid [disease] and until August [1959] they have accumulated 113 cases, and most of the treatment outcomes are very good.”^{xxvii} In addition, not only were the effects of iodine 131 praised--they were even described in magical terms: “One takes the iodine 131 as if drinking a glass of water, and will receive novel effects, iodine will release energy among the clusters of atoms, therefore slowing down the metabolism. The working of it is still unclear.”^{xxviii}

Despite the celebratory entrance of RAI in the 1950s, including several elite medical centers launching nuclear medicine, in practice the extent of the use of radioactive iodine clinically remained limited. In the early days of nuclear medicine, the air-transport of RAI from the US and its quick loss of efficacy presented real difficulties. It was also very expensive. Under these circumstances, RAI could hardly become a real rival for surgery in the north, not to mention places outside of Taipei where surgery had been established since the 1950s.

It was not until 1962 that Taiwan began to produce RAI locally, after the swimming-pool reactor (THOR) at National Tsing Hua University began operation.^{xxix} But the development was still circumscribed. By 1983, a physician in nuclear medicine was finally able to state: “Currently, as a result of the increased use of iodine 131, surgeon’s opportunities to practice are decreasing. This may increase

their misconduct in treating patients.”^{xxx} Four years later, 1987 saw the establishment of the Society of Nuclear Medicine. By now, RAI was finally in the position of competing with surgery.

From the point of view of internal and nuclear medicine, the use of RAI enabled avoiding the risk of surgery and it was also inexpensive. But being a radioactive substance, both medical and lay people were concerned with the risk of cancer. Young children and pregnant women or women who plan to become pregnant are not users of RAI. In 1978, medical research had stated that RAI did not increase the risk cancer, and it may even lower the risk of thyroid cancer.^{xxxii} Yet, as late as 2003, the internist Chang Tien-chun of National Taiwan University Hospital still lamented: “In Taiwan, whenever people hear the term radioactive iodine or atomic iodine, they retreat three day's march [*tuibi sanshe*], and I am forced to tell them that it's not an atomic bomb.”

In 1969, National Taiwan University Hospital allegedly treated 815 cases of patients with hyperthyroidism using RAI, and they claimed that the cure was over 80%, except for a few who were resistant to RAI and were then “persuaded to accept surgery.”^{xxxiii}

Even though the government-in-exile upheld RAI as the medical counterpart of nuclear power and ushered it in with staged rituals, RAI did not overtake the surgical approach as it did in the US. As late as the 1990s, surgery was still the major treatment option for this common disease in Taiwan. RAI was a latecomer and, with the exception of a few prestigious hospitals in Taipei such as the National Taiwan University Hospital, most medical institutions and clinicians were not equipped to use the substance. In the popular imagination, RAI was equated with the aftermath of the atomic bombing of Japan. The ways in which surgery was preferred point to

the importance of established social organizations and material conditions of medical practice as well as the post-Hiroshima image of radioactive materials.

Conclusion

Surgery had established its status as one of the major forms of medical treatment for many diseases by the mid-twentieth century in Taiwan, including thyroid diseases. And it was so common that it became excessive in some cases. In contrast, despite its glamorous arrival, the use of RAI initially was very limited by its technology and by patients' perceptions, and it did not seriously rival the thyroidectomy until the late 1980s.

Yet, in 2002, a well-respected endocrinologist working in a medical center in southern Taiwan was still troubled by some rumors that had purportedly been made up by some surgeons working in local clinics. According to the rumors (rumors about rumors, really), RAI was "bad for the health" due somehow to its atomic nature. Furthermore, it is still very common for patients with hyperthyroidism to go with the surgery.

This is my preliminary exploration of the history of the treatments of hyperthyroidism. More research remains to be done.

ⁱ Zheng Tai-an, M.D., "Thyrotoxicosis," *China Times*, 1978/12/17

ⁱⁱ A. J. Lowery and M. J. Kerin, "Graves' Ophthalmopathy: The Case for Thyroid Surgery," *Surgeon*, 7.5(2009): 290-96.

ⁱⁱⁱ Jihyun Ahn, "Historical Perspectives of the Treatment of Thyroid Disease," *South Korean Journal of Medical History*, 17(2008): 99-110.

^{iv} Shih-Ming Huang, Chen-Hsen Lee, Fang-Fu Chou, Koung-Yi Liaw, Tain-Chen Wu, and Taiwan Endocrine Surgeons Study Group, "Characteristics of Thyroidectomy in Taiwan," *J. Formosa Med. Assoc.*, 104.1(2005): 6-11.

^v Li Daichi, "Treatments for hyperthyroidism in Taiwan," MA Thesis, Graduate Institute of Preventative Medicine, National Taiwan University, 2009.

^{vi} Hyperthyroidism, the over production of the thyroid hormone, is a common disease

in Taiwan. Symptoms include palpitation, heat intolerance, weight-loss, and others. Its etiology has been a subject of debate, including notions of heredity, stress, and immunological disorder. Since the development of immunology, it has been categorized as an autoimmune disease. R. Hoffenberg, "Aetiology of Hyperthyroidism—II," *British Medical Journal*, 3(1974): 508-510. In 1970s Taiwan, in addition to the stress hypothesis, some psychiatrists had proposed that hyperthyroidism was caused by a threatened sense of security. Hu Haiguo, "Jai ChuangXien Du Zheng [hyperthyroidism]" *Dang Dai Yi Xueh* [Contemporary Medicine], (1974): 32-37.

vii Dujian Tsai, *The History of Surgery in Taiwan* (Taipei: Ton San Publishing and Taiwan Surgical Association, 2002)

viii Chang Tien-chun, "Retrospective and Prospective of Endemic Goiter in Taiwan," *Journal of Internal Medicine of Taiwan*, (2000):11-2.

ix Sheng Yu Ching (1895-1965), a well-known Chinese woman writer, was probably one of the first few who wrote a detailed account of her illness as a hyperthyroidism patient in 1935. After going through many Chinese physicians, she eventually accepted surgery from a medical missionary, very likely Harry Miller. Sheng Yu Ching, "Geng Sheng Ji" [Coming Back to Life] In Li Yu Ning ed., *Jidai Chunghua Zi Xu Shiwen Xuan* [Anthology of Women's Biographical Accounts in Modern China] (Taipei: United Publishing, 1980) Pp. 715-741.

x Lin Tien-yu, *Xinlin Shengya Yun ho Yueh* [My Career in Medicine] (Taipei: Commercial Press, 1990)

xi "Death after Surgery, Surgeon found not guilty," *United Daily*, 1953-04-30.

xii According to Li Shao-Ju (1927--), during the mid-1950, thyroidectomy was considered a "more difficult stage of complex surgical procedures." Li Shao Ju, "On the Beautiful Island of Formosa," <http://www.ntueg.com/Memoir/PDF/Lee3.pdf>, accessed date: 3/12/2013 ◦

xiii Kaohsiung Physicians' Association, *Medical History in Kaohsiung*, Kaohsiung, 1998.

xiv "Senior Doctor of Adventist Hospital flew to Lybia," *United Daily*, 1957-06-18 ◦

xv Ernest Wagner, Untitled, *California and Western Medicine*, 48.6(1934): 474.

xvi "Harry Miller Collection," Center for Adventist Research, James White Library, Andrews University, Michigan, 2008.

xvii "Certain doctors use the knife at will, patients with Laborer's insurance let them cut women laborers' thyroid, legislative member urged the government to take action," *China Times*, 1977/11/8.

xviii "Spare the knife, thyroid tumors may be malignant or benign, not all require surgery," *China Times*, 1980/3/5.

xix Li Shu-chuan, "White cover book for treatment of hyperthyroidism," *Ming Sheng Daily*, 1994/03/26.

xx Li Di-ying, Hung Zheng-de, "Thyroidectomy," *The Journal of Taiwan Otolaryngology-Head and Neck Surgery*, 30.1(1995):70-83.

xxi Saul Hertz (1905-1950) and A. Roberts pioneered RAI in 1942.

xxii "The Development of Radiology in Today's World," *United Daily*, 1953/04/11 ◦

xxiii Director of Nuclear Medicine Experimental Institute Wu Ching 〈原子醫學實驗院吳靜兼任院長，首先從事健康檢查及蒐集症狀病源等工作〉，*United Daily*, 1956-12-03 ◦

xxiv 盧榮愛，陳宏達 〈新陳代謝科 ISO 9001/2000 認證實錄〉，參見：

http://history.vghtpe.gov.tw/portal_e9_page.php?button_num=e9&cnt_id=8&search_field=&search_word=&up_page=2

^{xxv} “Radioactive substances for Medical Purposes, Taidai Hospital Research Center Breaks Ground Today,” *United Daily*, 1957-06-12。

^{xxvi} 〈放射性碘 131 藥丸，自美空運抵台治病，六甲狀腺患者首獲治療 張其昀昨親將藥丸為病人服用〉，《聯合報》，1957-10-25。

^{xxvii} 〈台灣省醫學會第十四屆年會〉，《United Daily》，1959-11-23

^{xxviii} “Atomic Medicine for Heart Diseases,” *United Daily*, 1960-07-17

^{xxix} 鄭舒文，〈核能戰爭與和平〉，《經濟日報》，1984-05-10。

^{xxx} 曾凱元、黃妙株，〈放射性碘—131 治療甲狀腺機能亢進症〉，《當代醫學》10.6(1983): 521-22.

^{xxxi} William H. Beierwaites, “The Treatment of Hyperthyroidism with Iodine-131,” *Seminars in Nuclear Medicine*, 8.1(1978): 95-103.

^{xxxii} 張天鈞，〈用放射性碘治療甲狀腺機能亢進〉，《當代醫學》，30.11(2003):873-874。

^{xxxiii} *Economic Daily News*, 1970, March 4th.

科技部補助計畫衍生研發成果推廣資料表

日期:2014/11/17

科技部補助計畫	計畫名稱: 認知、態度、與身體性別關係: 醫學教育中的醫學生同儕身體檢查之探討
	計畫主持人: 王秀雲
	計畫編號: 101-2629-S-006-001- 學門領域: 性別與科技研究
無研發成果推廣資料	

101 年度專題研究計畫研究成果彙整表

計畫主持人：王秀雲		計畫編號：101-2629-S-006-001-				計畫名稱：認知、態度、與身體性別關係：醫學教育中的醫學生同儕身體檢查之探討	
成果項目		量化			單位	備註（質化說明：如數個計畫共同成果、成果列為該期刊之封面故事...等）	
		實際已達成數（被接受或已發表）	預期總達成數（含實際已達成數）	本計畫實際貢獻百分比			
國內	論文著作	期刊論文	0	1	100%	篇	
		研究報告/技術報告	0	1	100%		
		研討會論文	1	2	100%		
		專書	0	0	100%		
	專利	申請中件數	0	0	100%	件	
		已獲得件數	0	0	100%		
	技術移轉	件數	0	0	100%	件	
		權利金	0	0	100%	千元	
	參與計畫人力（本國籍）	碩士生	1	0	100%	人次	
		博士生	0	0	100%		
博士後研究員		0	0	100%			
專任助理		0	0	100%			
國外	論文著作	期刊論文	0	1	100%	篇	
		研究報告/技術報告	0	0	100%		
		研討會論文	0	0	100%		
		專書	0	0	100%		章/本
	專利	申請中件數	0	0	100%	件	
		已獲得件數	0	0	100%		
	技術移轉	件數	0	0	100%	件	
		權利金	0	0	100%	千元	
	參與計畫人力（外國籍）	碩士生	0	0	100%	人次	
		博士生	0	0	100%		
博士後研究員		0	0	100%			
專任助理		0	0	100%			

<p>其他成果 (無法以量化表達之成果如辦理學術活動、獲得獎項、重要國際合作、研究成果國際影響力及其他協助產業技術發展之具體效益事項等，請以文字敘述填列。)</p>	<p>研究成果於性別與健康國際研討會上發表，引發醫學與護理教育界的討論。日後將可以持續累積這方面的成果。</p>
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	成果項目	量化	名稱或內容性質簡述
科 教 處 計 畫 加 填 項 目	測驗工具(含質性與量性)	0	
	課程/模組	0	
	電腦及網路系統或工具	0	
	教材	0	
	舉辦之活動/競賽	0	
	研討會/工作坊	0	
	電子報、網站	0	
	計畫成果推廣之參與(閱聽)人數	0	

科技部補助專題研究計畫成果報告自評表

請就研究內容與原計畫相符程度、達成預期目標情況、研究成果之學術或應用價值（簡要敘述成果所代表之意義、價值、影響或進一步發展之可能性）、是否適合在學術期刊發表或申請專利、主要發現或其他有關價值等，作一綜合評估。

1. 請就研究內容與原計畫相符程度、達成預期目標情況作一綜合評估

達成目標

未達成目標（請說明，以 100 字為限）

實驗失敗

因故實驗中斷

其他原因

說明：

2. 研究成果在學術期刊發表或申請專利等情形：

論文： 已發表 未發表之文稿 撰寫中 無

專利： 已獲得 申請中 無

技轉： 已技轉 洽談中 無

其他：（以 100 字為限）

部分成果已於 2013 年第十一屆性別與健康國際研討會發表，題目為「醫護教育的身體檢查」。目前正撰寫更完整的論文，即將投稿 2015 第十三屆性別與醫療國際研討會。

3. 請依學術成就、技術創新、社會影響等方面，評估研究成果之學術或應用價值（簡要敘述成果所代表之意義、價值、影響或進一步發展之可能性）（以 500 字為限）