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研究課題名(和文) がんに対する正しい知識・態度・意識の涵養を目指す小中学生向けがん教育教材の開発

研究課題名(英文) Developing Educational Materials for Primary and Junior High School Pupils to Promote Awareness and a Correct Understanding of Cancer

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研究成果の概要(和文)：幼児期に身につけた生活習慣は成人期に持ち越され、その内容によってはがんのリスクを高める行動に繋がる。本研究の目的は、学童の健康教育の歴史が長い英国・豪州のがん教育を参考に、小中学生向けの教材を開発する。両国では、効果的な教材の開発の為に保健医療省と教育省が連携している。英国では小児期の肥満が問題となり、保育園から食生活と運動習慣が健康教育に含まれている。気候のよい豪州では、屋外での活動は一般的であるが、皮膚がんのリスクが増加する為、紫外線への曝露を避けるように学校単位で指導される。どちらの国でも、学校単位でのHPV教育が効果的に行われている。現在、英国の教材を日本で使えるよう翻訳を進めている。

研究成果の概要(英文)：About 40% of cancers are lifestyle related and 1 in 2 Japanese will die of cancer. Since many unhealthy lifestyle habits are formed as a child, schools should teach children about leading a healthy lifestyle. By looking at how health and cancer education is taught in the UK/Australia, countries with a long history of health promoting schools, we aimed to develop education materials for Japanese children. In the UK and Australia, Departments of Health and Departments of Education collaborate to create effective educational materials. In the UK, childhood obesity is seen as the main cancer risk in adulthood, so promoting healthy eating and exercise is encouraged from nursery school. In Australia, with fine weather, outdoor activities are common, but increase skin cancers risk when older, thus school-based health education emphasizes avoiding UV radiation. Both countries have effective school-based HPV education. We are presently translating UK educational materials for use in Japan.

研究分野：応用健康科学

キーワード：健康教育 がん教育 教材開発 ヘルスプロモーション 小・中学生

### 1. 研究開始当初の背景

About 40% of cancers are lifestyle related and one in two Japanese will die of cancer. In 2007, the Japanese Cancer Control Law was enacted, promoting a healthy lifestyle through healthy eating, exercise and no smoking. Since many unhealthy lifestyle habits are formed during childhood, it is important that children are taught about how to lead a healthy lifestyle and one of the best places to do this is in school.

### 2. 研究の目的

By investigating how health and cancer education is taught in the UK and Australia, countries with a long history in this field, we hoped to be able to develop cancer/health education materials for Japanese primary and junior high school children, with a particular focus on HPV and cervical cancer prevention, since the HPV vaccine is given during adolescence.

### 3. 研究の方法

We visited 4 primary schools in Scotland, the WHO Collaborating Centre for International Child & Adolescent Health Policy Child and Adolescent Health Research Unit at the University of St Andrews, Jo's Cervical Cancer Trust, Cancer Research UK, the Australian HPV Cancer Registry and the Cancer Council Victoria, in Australia, to obtain insight into how health/cancer education was taught to children and you adults.

### 4. 研究成果

Given their different geographical locations, the UK and Australia have different environmental risk factor for cancer, the sun in Australia, and obesity in the UK. While, the good weather encourages children, to be active and pay outside, reducing their chance of becoming overweight or obese, exposure to UV radiation from an early age, increases their risk of skin cancer later in life. For this reason, most of cancer prevention activities in schools have a large focus on skin cancer prevention. Conversely, due to the poor weather in the UK, children are more likely to be indoors, and in the present digital age, on an iPad or computer. This inactivity increases their risk of being overweight and/or obese, a well-known risk factor for many cancers later in life, so many interventions and initiatives have been

developed to deal with this issue. HPV-related cancers are common to both countries, and this issue has been tackled well with successful HPV immunization programmes. In both countries, the Departments of Health and the Departments of Education cooperate and work closely together to develop a curriculum most suitable for the children's health education needs.

### Report 1: Health/Cancer Education in the UK (Scotland)

#### -The Curriculum for Excellence

[https://www.educationscotland.gov.uk/Images/all\\_experiences\\_outcomes\\_tcm4-539562.pdf](https://www.educationscotland.gov.uk/Images/all_experiences_outcomes_tcm4-539562.pdf)

In Scotland, the Curriculum for Excellence is aimed at 3-18yr olds in order that they develop the following 4 capacities to become: successful learners, confident individuals, responsible citizens and effective contributors. The curriculum has eight areas, one of which is Health and Well-being, which is taught across all 16 years of the curriculum, even including the younger ages. An example of how this works would be to use colors to teach about healthy foods with 3-5yr olds. Obesity is a serious problem for Scottish children and as well as all schools having to provide 2 hours of physical education per week, national government programs such as Jog Scotland and local government programs such as BEST Fife (Figures 1.1 and 1.2) provide children with free access to running clubs and sporting facilities.



Fig 1.1 Healthy Eating



Fig 1.2 BEST

For adolescents, as well as classes on the hazards of smoking and excess alcohol consumption, HPV vaccination takes place in S1, S2 providing both girls and boys with an opportunity to learn about HPV related cancers (See Report 2).

-The WHO Collaborating Centre for International Child & Adolescent Health Policy Child and Adolescent Health Research Unit at the University of St Andrews (<http://www.cahru.org/>)

The Child and Adolescent Health Research Unit (CAHRU) is a specialist research unit that conducts research on all age groups of children from the early years to the late adolescence when young people are embracing on young adulthood. Past studies have included: Evaluation of the Fit for Girls programme; Control of Adolescent Smoking Study (CAS); Health Promoting School Profiling; Scottish Physical Activity Research Collaboration (SPARColl); Walking Behaviour in Adolescent Girls and Young People, Physical Activity and Food Choices Study (Figures 1.3 and 1.4).

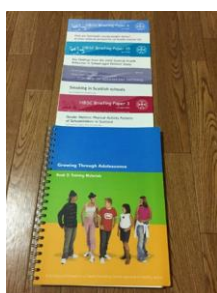


Fig 1.4  
CAHRU publication 1



Fig 1.3  
CAHRU publication 2

In Scotland, the notion of Health Promoting School is still strong and the NHS works in close collaboration with the Department of Education at both the regional and national level. School dinners are provided for free to primary 1-3 pupils and free fruit is also available to these age groups.

### Health/Cancer Education in Australia - National SunSmart Schools

Due to the high incidence of malignant melanomas, a large focus of health/cancer education in Australian children is sun-care. The Australian Cancer Council has introduced a National SunSmart Schools Program to tackle this issue, since children are in schools when UV radiation levels peak (<http://www.cancer.org.au/preventing-cancer/sun-protection/sunsmart-schools/>).

Measures include, shaded play areas, reschedule/minimise outdoor activities during peak UV periods of the year and teaching, modeling and reinforcing and reinforcing positive sun protection behavior. Online resources for primary schools are also available (Figs 1.5-1.6). (<http://www.cancer.org.au/preventing-cancer/sun-protection/sunsmart-schools/pri>

[mary-school-resource.html](http://www.cancer.org.au/preventing-cancer/sun-protection/sunsmart-schools/pri)). The 'positive' side to the good weather, is Australian children are more active than their UK counterparts, so obesity is less of an issue.



Fig 1.5 Sun-protective clothing



Fig 1.5 Sunglass promotion

### -HPV Related Cancers

Australia was the first country to introduce a national cervical cancer vaccination programme. From 2007, girls aged 12-13yrs have been vaccinated against HPV and from 2013, boys of the same age have been included, making it an 'HPV-related' cancers vaccination programme. There was a 2 year catch-up programme for girls to the age of 26yrs and a 2 year catch-up for boys up to the age of 15yrs. Both catch-up programmes have now finished.

Professor Racheal Skinner of Sydney University has developed an educational intervention programme for school, and the Cancer Council also have a variety of online resources. As with the UK, uptake is high and with robust safety and effectiveness surveillance, the programme is proceeding smoothly.

<http://takechargehpv.org/#/home>  
<http://www.hpvvaccine.org.au/>  
<http://www.hpvregister.org.au/>

### Report 2:

### A Comparison of Differences in Approach to School-based Cervical Cancer Education in Scotland and Japan

HPV vaccines are used in national immunization programmes globally. All evidence suggests that HPV vaccines are both safe and effective, safety concerns continue to appear in online/offline media. While the death of a British schoolgirl hours after HPV vaccination had no adverse effect on UK uptake rates (Figure 2.1), media reports of extensive pain following HPV vaccination in Japan have led uptake rates to plummet from >70%-1% (Figure 2.2). Using government data, we analyzed why these differences occurred based on education and government interventions.

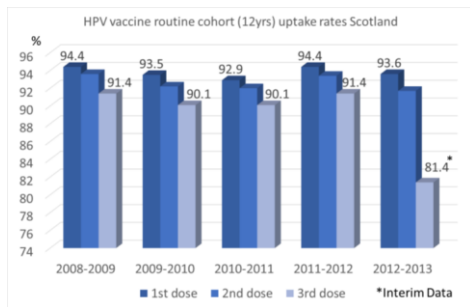


Fig 2.1 HPV vaccine uptake rates Scotland ISD Scotland

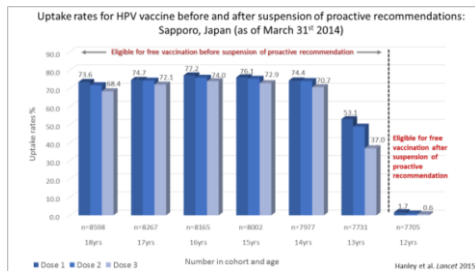


Fig 2.2 HPV vaccine uptake rates Japan (Hanley et al. Lancet 2015)

## Results

In Scotland, the national government is responsible for health and education and the HPV vaccination program had/has a high degree of political commitment. Before the programme commenced, special working-groups were established that included communication and education and epidemiology and surveillance streams (Figures 2.3 and 2.4).

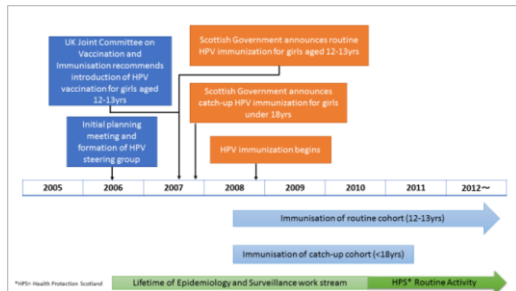


Fig 2.3 Planning and Implementation of the HPV Vaccine Programme in Scotland

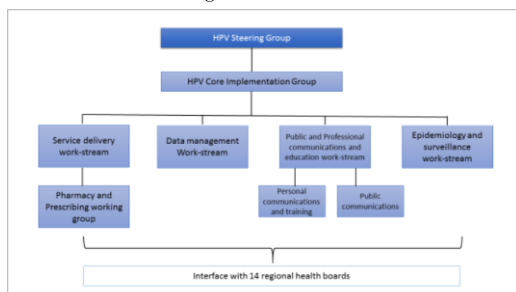


Fig 2.4 HPV Core Implementation Groups (Adapted from Potts et al. Eurosurveill 2013)

Members were communications experts, epidemiologists, and representatives from schools, general medical practice, and the national health telephone

help-line. Qualitative and quantitative studies were performed to investigate pupil/parental/teacher attitudes towards HPV vaccination. Based on the results, school-based educational materials were developed and a homepage created where parents had access to all materials and a free helpline they could call with any concerns (Figure 2.5).



Fig 2.5 Educational Materials for the HPV Vaccine Programme in Scotland

In Japan the vaccine was introduced without any forward planning or any system to evaluate the vaccination programme (Figures 2.6).

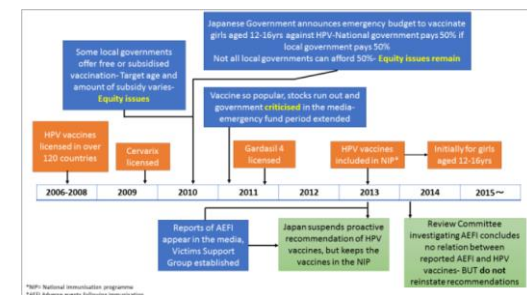


Fig 2.6 Planning and Implementation of the HPV Vaccine Programme in Japan

Educational materials in Japan were developed by advocacy groups or by the drug companies leading to suspicion and distrust of both vaccine efficacy and safety. Furthermore, there was no place for parents to discuss any concerns.

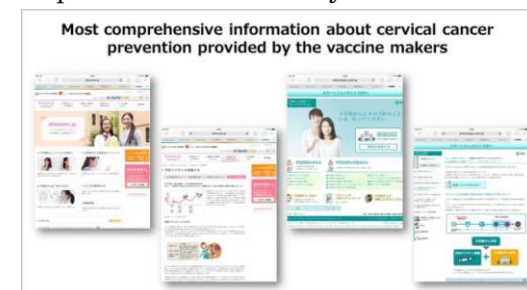


Fig 2.7 Japanese government educational materials

Conclusion: In Scotland, a structured, managed approach to HPV vaccination achieved high and inclusive uptake. Risk communication through robust offline and online publications helped parents

make a confident well informed decision about vaccinating their daughter against HPV. In Japan, issues with risk communication and risk management, along with no government school-based educational programmes, combined with an unrestraint media environment and lack of reassurance and systematic addressing of events by the government led to mistrust in the vaccine and cessation of uptake, despite the vaccine still being free and in the NIP.

#### 5. 主な発表論文等

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[その他]

国際シンポジウム開催（同時通訳有）：  
子宮頸がん予防の戦略：検診とワクチン-教育と啓発による女性の認識向上を目指して  
月日：2016 年 3 月 15・16 日  
場所：北海道大学

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  8. 櫻木範明（北海道大学医学部産婦人科・教授）
  9. シャロン・ハンリー（北海道大学医学研究科総合女性医療システム学講座・特任助教）
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