# Oral Presentation 10 O10-1

## Public-Access AED Pad Application in Pediatric Out-of-hospital Cardiac Arrest

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**Background** : Public-access automated external defibrillation (AED) pad application may improve survival outcomes in pediatric out-of-hospital cardiac arrest (OHCA) by facilitating earlier rhythm analysis and higher-quality cardiopulmonary resuscitation (CPR). However, the factors associated with AED pad application and their impacts on one-month survival in pediatric OHCA remain unclear.

**Methods** : From the All-Japan Utstein Registry and Emergency Transport Records (2021–2023), we enrolled pediatric OHCA patients aged 0–17 years old in whom resuscitation was attempted before Emergency-Medical-Services (EMS) arrival. Multivariable logistic regression analyses were performed to estimate adjusted odds ratios (aORs) and their 95% confidence intervals (CIs) for factors associated with public-access AED pad application and with one-month survival.

**Results** : A total of 3,352 pediatric patients was analyzed and 185 patients (5.5%) received public-access AED pad application. Younger children (1–4 years old), nighttime occurrence, arrests occurring at home or roadside, and non-cardiac origin were significantly associated with a reduced probability of public-access AED pad application. In contrast, arrests occurring at school, witnessed by passersby, and receipt of bystander CPR were associated with increased probability of public-access AED pad application. One-month survival was significantly higher in the pad application group compared to the non-application group (52.4% vs. 9.8%). Especially, first documented rhythm of ventricular fibrillation was most strongly associated with increased 1-month survival (aOR, 10.65; 95% CI, 6.74–16.82).

**Conclusion** : Patient characteristics and various situational and systemic factors can influence public-access AED pad application. Disseminating public-access AED availability in public settings may improve survival in pediatric OHCA.

# Marital Control and Intimate Partner violence Association with Antenatal Care and Pregnancy Outcomes

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**Introduction** : Intimate partner violence (IPV) is a major public health problem linked to reduced maternal healthcare utilization and adverse pregnancy outcomes. While previous studies demonstrated an association between IPV and Marital control (MC), little is known about how MC independently affects maternal healthcare. Aim of this study was to evaluate the understudied role of MC along with IPV on antenatal care, and pregnancy outcomes.

**Methods** : This study analyzed data from Pakistan Demographic and Health Survey 2017-2018. Exposure to IPV (physical, sexual, emotional) and MC were primary predictors. Based on most recent birth record, outcomes included number of antenatal care visits, receipt of tetanus toxoid injections during pregnancy, institutional delivery and pregnancy termination. Multivariable logistic regression analysis was used to examine effects of exposure variables on each of outcome variables separately after controlling for socio-demographic variables.

**Results** : Data from 4085 ever-married women was analyzed. MC behaviors by husband such as accusations of unfaithfulness (aOR=1.59; 95%CI: 1.16-2.20), jealousy (aOR=1.14, 95%CI: 1.12-1.78) and social restrictions (aOR=1.40; 95%CI: 1.04-1.89) were significantly associated with inadequate tetanus toxoid injections during pregnancy. Jealousy was also linked with higher odds of home delivery (aOR=1.29; 95%CI: 1.02-1.63). MC indicators like jealousy (aOR=1.28; 95%CI: 1.08-1.51), constant monitoring (aOR=1.31; 95%CI: 1.07-1.58) and social restrictions (aOR=1.35; 95%CI: 1.08-1.68) augmented the risk of pregnancy termination. Among IPV types, physical (aOR=1.30; 95%CI: 1.10-1.55) and sexual (aOR=1.39; 95%CI: 1.03-1.87) violence increased the risk of pregnancy termination.

**Conclusion** : Women exposed to MC behaviors and IPV are at increased risk of inadequate maternal healthcare and pregnancy termination. Recognizing and addressing both forms of abuse in maternal health programs is essential for improving outcomes.

# Factors related to immunization uptake among the stateless children in northern Thailand

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Immunization is a significant health care tool to protect against crisis-related threats to human health, particularly in underserved populations such as hill tribes and stateless people in Thailand. A mixed method aimed to identify the barriers to and facilitators of the use of vaccines among five-year-old hill tribe and stateless children living in the border areas of northern Thailand and Myanmar. Logistic regression was used to detect associations in the quantitative data, and content analysis was used for qualitative data analysis. A total of 188 cases and 188 controls were analyzed; 54.0% were boys, and 54.3% were Akha. Children without a birth certificate (AOR = 8.57), children who received a vaccine at a provincial/district hospital (AOR = 14.76), private hospital or clinic (AOR = 7.29), children aged 6-12 years living with $^{3}$ 3 family members (AOR = 3.61), children living with mothers who were non-Thai citizens (AOR = 4.40), children living with mothers who had not attended school (AOR = 4.08), children living with a primary caregiver who was Yao (AOR = 4.58) or Lisu (AOR = 2.94, children living with a Christian or Muslim primary caregiver (AOR = 2.76), and children living with elderly individuals who brought them for vaccinations (AOR = 2.30) had greater odds of having incomplete vaccination than children with the opposite characteristics. Communicable challenges, different perspectives on vaccines among different generations, seeking a new life for younger generations, stages of citizenship, mobility, disasters, and a lack of effective health policies were detected as barriers and facilitators to vaccination. A proper public health policy to deliver vaccines by reducing the determination of citizenship increasing accessible services should be a primary concern to improve coverage for hill tribe and stateless children living in border areas of Thailand and Myanmar.

# Association between Assisted Reproductive Technology and Neurodevelopmental Outcomes in Offspring

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With the global rise in Assisted Reproductive Technology (ART), concerns have emerged regarding its potential influence on these delicate developmental processes. Evidence on the long-term neurodevelopmental health of children conceived via ART is limited. The Big Children's Environmental Health Study is a large-scale, population-based birth cohort in South Korea, designed to track nearly all births from 2015 onwards by linking maternal and child health data from the National Health Insurance Service. While the use of ART has increased globally, comprehensive research on the long-term neurodevelopmental health of children conceived via these methods is still needed. This study aims to investigate whether children born after maternal ART, specifically In Vitro Fertilization (IVF), have an increased risk of developmental disorders compared to those conceived naturally. We will identify a cohort of mothers with a confirmed pregnancy between 2018 and 2019 using the Big-CHENS database. Mothers who underwent embryo transfer within one month of their pregnancy confirmation will be defined as the ART group, while the remaining mothers will form the natural conception control group. Mothers with a history of Intrauterine Insemination (IUI) within the 90 days prior to pregnancy confirmation will be excluded. The primary outcome was the incidence of developmental disorders in the offspring. Secondary outcomes were congenital anomalies and birth weight. We used a time-varying Cox model to calculate the hazard ratios (HRs) and 95% confidence intervals (CIs). The models will be adjusted for potential confounders, including the mother's obstetric history and medication exposure during pregnancy. A total of 60,888 mother-child pairs were included in the ART group. We found a positive association between exposure to IVF treatment throughout the whole pregnancy and neurodevelopment delay in their offspring.

# Development of a Prediction Model for Childhood Overweight Using Life Course Data

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Childhood obesity can influence adult health outcomes, making continuous monitoring and timely intervention essential. In Japan, health data are collected at multiple life stages but remain fragmented and unlinked. This study linked life course data to develop models predicting overweight at ages 3, 6, 11, and 14, based on the 18-month health checkup, and evaluated their feasibility for practical use. We linked data from maternal and child health handbooks, infant health checkups, and school physical examinations of participants in the Tohoku Medical Megabank Project Birth and Three-Generation Cohort Study. The analysis included 1,160 children (584 boys, 576 girls) with available school health records from 2018 to 2022. Model 1: sex, overweight status at 18 months, parity, maternal age at delivery, maternal body mass index (BMI), and maternal smoking and alcohol history. Model 2: all Model 1 variables plus birth weight and BMI change from birth to 18 months. Both models predicted overweight status at ages 3, 6, 11, and 14. Model performance was evaluated using receiver operating characteristic (ROC) curves. In Model 1, the area under the curve (AUC) values for predicting overweight were 0.644 at age 3, 0.732 at age 6, 0.782 at age 11, and 0.633 at age 14. In Model 2, the AUCs were 0.715, 0.732, 0.785, and 0.633, respectively. Adding birth weight and early BMI change improved prediction at age 3 but did not substantially change later predictions. Including birth weight and early BMI trajectory enhanced accuracy for predicting overweight at age 3, but overall performance remained modest, with no AUCs exceeding 0.8. For long-term prediction, especially at age 14, the relatively low accuracy highlights the need to incorporate additional complementary variables. Despite these limitations, the study demonstrates the potential of life course data to predict childhood overweight, supporting opportunities for prevention and early intervention in pediatric obesity.