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Alcohol consumption by parents of Pacific families residing in New Zealand: Findings from the Pacific Islands Families Study

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ABSTRACT

Harmful alcohol consumption amongst Pacific people (those of Polynesian descent) is recognized as a public health priority in New Zealand, yet little epidemiological information exists on this pattern of drinking. Using a large birth cohort study, which includes the mother, father and child triad, this study aims to determine the prevalence and change in any harmful drinking levels prenatally, antenatally and in the postpartum period for mothers and fathers, and to measure the concordance of both partners' reports of that drinking in an ethnically representative sample of Pacific families within New Zealand. Participants were selected from births where at least one parent was identified as being of Pacific ethnicity and a New Zealand permanent resident (1376 mothers and 825 fathers at baseline); many of whom are young to middle aged adults. These participants have been prospectively followed-up multiple times since. The Alcohol Use Disorders Identification Test consumption questions (AUDIT-C) were used over successive measurement waves to define any and harmful drinking levels. Recommended screening thresholds were employed. Longitudinal analyses on complete cases and imputed data, accounting for differential attrition, were undertaken and reported. Clear temporal patterns of alcohol consumption emerged for both mothers and fathers, together with significant and important ethnic differences. Moreover, there was considerable movement in alcohol consumption categories between consecutive measurement waves for both mothers and fathers. Among couples, there was significant asymmetry in drinking patterns and poor statistical agreement. However, 9.1% (14.1% in imputed analyses) of Pacific children aged 2 years had both parents indicated for harmful drinking. The significant important heterogeneity and ethnic differences suggest that both ethnic-specific and pan-Pacific interventions and prevention strategies are likely needed for successful interventions. More emphasis should be placed on targeting and addressing parents' alcohol misuse, particularly in the antenatal or postnatal period.

Introduction

Within New Zealand, Pacific people are defined as those who have Polynesian ethnic origin – regardless of their country of birth. Pacific people number around 345,000 and comprise 7.8% of the national population (Statistics New Zealand, 2012b). They are a relatively young, highly urbanized, mostly New Zealand-born, ethnically diverse, and rapidly growing population. This ethnic diversity is manifest in differing cultures, languages, and behaviors (Burrows, Williams, Schluter, Paterson, & Langitoto Helu, 2011). However, Pacific people suffer from an excess of social, health, and economic deprivation (Ministry of Health, 2005). There is a growing recognition that issues which have a significant impact on Pacific people's lives need to be understood for appropriate intervention, of which alcohol stands out (Alcohol Advisory Council of New Zealand, 2009).

Across and within Pacific communities there is no single unified view of alcohol, and the concept of drinking itself has various interpretations by different ethnic and age groups (Ministry of Health, 1997). Notwithstanding, the best available evidence suggests that while there are proportionately more Pacific abstainers than in the general New Zealand population, those Pacific people who do drink are relatively more likely to drink to more harmful levels than their non-Pacific counterparts; although there is considerable variation in available prevalence estimates (Alcohol Advisory Council of New Zealand, 2009; Huakau

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et al., 2005; Ministry of Health, 2009; Pacific Research and Development Services and Centre for Social and Health Outcomes Research and Evaluation, 2004). There are also notable gender differences in alcohol consumption between Pacific people, with significantly more men consuming alcohol than women. The 2007/2008 New Zealand Alcohol and Drug Use Survey revealed that 61.2% (71.8% men and 51.4% women) of Pacific adults consumed alcohol within the last 12 months compared with 85.2% (88.4% men and 82.7% women) of the total population; while 2006/2007 figures revealed that 24.5% (33.8% men and 13.6% women) of Pacific adults consumed potentially harmful levels of alcohol within the last 12 months compared with 20.1% (30.6% men and 13.6% women) of the total population (Ministry of Health, 2009). Alcohol consumption in pregnancy was declared by 20.2% of Pacific women in the 2007/2008 New Zealand Alcohol and Drug Use Survey compared with 27.7% of women in the total population (Ministry of Health, 2009). While an increasing proportion of Pacific women are drinking (Ministry of Health, 1997, 2009), their communities, especially the men, have been slower to accept this behavior (Ministry of Health, 1997).

Maternal alcohol consumption during pregnancy can cause significant chronic morbidity to the developing fetus, including birth defects and fetal alcohol syndrome (Elliott, Coleman, Suebwongpat, & Norris, 2008). Moreover, parental alcohol misuse has been widely documented to impact on children's health (Girling, Huakau, Casswell, & Conway, 2006; Johnson & Leff, 1999), increasing the likelihood of developing mental health problems; engaging in violent and delinquent behavior; being physically abused; performing poorly in school; abusing alcohol or drugs themselves; and experiencing depression in adulthood (Balsa & French, 2012). Given the increasing rates of drinking among Pacific people (Ministry of Health, 2009), the disproportionate amount of harm resulting from this drinking (Alcohol Advisory Council of New Zealand, 2009), and the potential impact on child development by drinking parents (Balsa & French, 2012; Elliott et al., 2008; Girling et al., 2006), it is perhaps surprising that no epidemiological information exists about the alcohol consumption patterns of Pacific parents over time, alcohol consumption concordance between parents, and associated ethnic differences.

Using a standardized, psychometrically robust instrument of alcohol consumption repeatedly employed in a large birth cohort, this paper aims to determine the prevalence of any and harmful drinking levels at multiple intervals postpartum (and for maternally recalled prenatal and antenatal periods), and measure the concordance of both partners' reports of that drinking in an ethnically representative sample of Pacific couples.

Materials and methods

Study design

The Pacific Islands Families (PIF) Study follows a cohort of Pacific infants born at Middlemore Hospital, South Auckland, between 15 March and 17 December 2000.

Participants

Participants include the mother, father and child triad. All potential participants were selected from births where at least one parent was identified as being of Pacific Islands ethnicity and a New Zealand permanent resident. Recruitment occurred through the Birthing Unit, in conjunction with the Pacific Islands Cultural Resource Unit, and consent was sought to make a home visit.

Procedure

Approximately 6-weeks postpartum, potential participants were visited at home by female Pacific interviewers fluent in both English and Pacific language(s). Once eligibility was confirmed and written informed consent obtained, mothers participated in one-hour interviews concerning family functioning and the child's health and development. With written informed consent, home visits were repeated approximately 1-year, 2-years, 4-years, 6-years, and 9-years postpartum. At the 1-year, 2-years and 6-years interviews, mothers were asked to give permission for a male Pacific interviewer to contact and interview the child's father. With permission, and written informed paternal consent, fathers also participated in one-hour interviews. Detailed information about the cohort, utilized instruments, and procedures is described elsewhere (Paterson et al., 2006, 2008).

Primary measures

Any alcohol consumption was assessed using the Alcohol Use Disorders Identification Test (AUDIT) first consumption question (Saunders, Aasland, Babor, de la Fuente, & Grant, 1993). Consumption was categorized into binary drinking and non-drinking classifications. *Harmful drinking* was assessed using the three AUDIT consumption questions (AUDIT-C) (Bush, Kivlahan, McDonell, Fihn, & Bradley, 1998). Recommended screening thresholds were employed ($\geq$4 points for men and $\geq$3 points for women) to define binary harmful drinking and non-harmful drinking categories (Bradley et al., 2007; Frank et al., 2008). AUDIT-C was elicited at the 6-weeks, 1-year and 2-years measurement waves for mothers (pre-pregnancy and pregnancy self-reports were also elicited at the 6-weeks interview), and at the 1-year, 2-years and 6-years measurement waves for fathers. The AUDIT-C is a valid screening tool, with specificity and sensitivity similar to the full AUDIT (Bradley et al., 2007), and has been successfully applied across various different ethnic groups (Frank et al., 2008).

Socio-demographic variables

Socio-demographic variables included age, ethnicity, highest educational qualification, years lived in New Zealand, smoking status, maternal report of household income, and maternal report of marital status. Ethnicity classifications included: 'Other Pacific' for participants who identified equally with two or more Pacific Island groups or with a Pacific Island ethnic group that was not Samoan, Tongan or Cook Island Maori; and 'Non-Pacific' for participants who were eligible for the PIF Study due to the Pacific ethnicity of their partner. At all measurement waves, maternal and paternal smoking status was assessed using the question: "How many cigarettes did you smoke yesterday?". Participants who answered with 0 cigarettes were defined as 'non-smokers', and those replying with $\geq$1 cigarettes were classified as 'smokers'.

Statistical analysis

All analyses were performed using SAS version 9.2 (SAS Institute Inc., Cary, NC, USA), figures drawn using Stata version 12.0 (StataCorp, College Station, TX, USA), and $\alpha = 0.05$ defined statistical significance for all tests. Prevalence estimates and 95% confidence intervals (CIs) were made using the binomial distribution. Separate binomial generalized estimating equations (GEE) models, using unstructured correlation matrices and robust Huber–White sandwich variance estimators, were used to model the binary alcohol variables over time for mothers and fathers, respectively. Because pre-pregnancy alcohol consumption explicitly lack a time reference