Mental health well-being amongst fathers within the Pacific Island Families Study

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Abstract

This article investigates the prevalence of potential psychological disorder amongst a cohort of primarily Pacific fathers in New Zealand over their child's first 6-years of life. The analysis is based on data collected at 12-months, 2-years and 6-years postpartum during the Pacific Islands Families Study, and uses the 12-item General Health Questionnaire (GHQ12) to assess the prevalence of psychological distress amongst participant fathers at each measurement wave. Various sociodemographic and potentially confounding variables were also investigated to determine their effect on the risk of developing potential mental health disorder. The majority of fathers within the study reported good overall health and well-being and their prevalence of 'symptomatic' disorder was initially low at 12-months (3.9%) but increased significantly at 2-years (6.6%) and at 6-years (9.8%) in crude and adjusted analyses (both P-values<0.001). In the adjusted analysis, the odds of symptomatic cases at 2-years was 1.7 (95% confidence interval: 1.1, 2.8) times that observed at 12-months postpartum and at 6-years the odds was 3.2 (95% confidence interval: 1.9, 5.2) times that observed at 12-months. Moreover, in the adjusted analysis, smoking status, marital status, employment status, and ethnicity, were all significantly associated with the risk of developing symptomatic mental health disorder.

Introduction

International perspective

Modern day fathers are experiencing increasing demands from both work and family life. The associated financial, psychological and physical strain placed upon fathers trying to balance work and family can also have an adverse impact on family life. However, unlike women, there is a surprising lack of research into male health issues, and particularly data concerning the health and well-being of fathers. What research that does exist highlights the potential effects of fathering roles and practices in influencing their child's behaviour and cognitive development.[1, 2] It also underlines the large potential for positive fathering to promote resiliency and improved mental health outcomes amongst young children.[3,4]

The importance of research on fathers and fathering behaviours has been recognized as key priority areas by international bodies, including the World Health Organisation (WHO).[5] There is a clear need to develop a deeper understanding of health issues surrounding male health, fathering roles, and family support structures in promoting resiliency amongst children and young people. In response to this need, several international organizations and countries are now endeavouring to provide information to fill this knowledge gap on fathers. One example is the nationwide longitudinal study on Men's health in Australia, which has a key purpose of investigating some of the key issues which affect the health of males, and their potential impact on fathering roles and practices.[6] Likewise, a research study conducted through the University of East Anglia in the United Kingdom (UK), is exploring whether modern day fathers suffer from similar tensions to mothers when trying to balance their work and family life. These

findings may in turn allow consideration of whether these factors may impact on the well-being of the children.[7]

The mental health well-being of fathers is of particular importance to the function and well-being of the family. First time fathers can be particularly prone to depression after childbirth[8] with mild to moderate depression most likely.[9] Such depression is likely to place strains on the father's relationship to his partner and new child, arguably at a time when his involvement is most needed. Moreover, depressed new mothers receive more support from their partner than from any other individual, including medical staff.[10] Such support is likely to be compromised if the father himself has poor mental-health.

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New Zealand perspective

Within the New Zealand context, recognition of the fundamental roles of men and fathering in family function and health has received increased nationwide attention through the New Zealand Ministry of Health,[11,12] the New Zealand Families Commission,[13] and the Health Research Council of New Zealand. Once again there is a general lack of information on male health, fathering, and associated mental health issues. Nevertheless, one research report concerning fathers in West Auckland highlighted the increasing recognition of fatherhood as an important factor in successful health outcomes for their children.[14] The report also indicated that fathers have their own unique role in providing parenting support and assistance which is quite distinct from the mother. Therefore positive fathering behaviours must be nurtured and encouraged in order to enhance positive health outcomes for their children.[14]

New Zealand-based Pacific Perspective

Alongside the international and national significance of men's health and well-being, the lack of information or data concerning Pacific males and specifically Pacific fathers is another important motivation for undertaking research into this area. Currently there is a scarcity of research on parenting practices and styles amongst different cultural groups in New Zealand,[15] and research findings on Pacific Island parents in New Zealand are very limited and inconsistent. A greater understanding of fathers mental health and how fathering roles may promote cohesion and connectedness of children to schools or preschools, would be highly beneficial in helping to formulate better strategies and policies to improve the health of Pacific children and youth.[11] Quantifying the extent of mental illness amongst Pacific peoples in New Zealand has historically been a very difficult task, with most information about the frequency of mental disorders being generated using institutional statistics that tend to underestimate the true prevalence of mental disorder.[16] Furthermore, what figures are available have usually been grouped under a Pacific ethnic label which fails to capture any sub-ethnic differences and variations. Nevertheless, recent information and evidence from Te Rau Hinengaro[17] has contributed to a better understanding of mental health amongst Pacific peoples. Specific key findings from this study indicate that Pacific peoples experience higher rates of mental illness than New Zealanders overall. Furthermore, the 12-month prevalence of Pacific peoples experiencing a mental disorder was 25%, compared with 20.7% of the total New Zealand population.[18] However, one of the fundamental findings within the study was recognition of the need for further research in mental health and particularly amongst specific groups within the Pacific population such as Pacific youth and Pacific males. It is important to emphasise that this perspective is only reflective of the situation amongst New Zealand-based Pacific people, and may not represent the situation amongst Pacific people living in the Pacific Islands.

Pacific Islands Families (PIF) study

The Pacific Island Families (PIF) study is an ongoing longitudinal study of Pacific children. In addition to information collected on the children, data was also collected from mothers and fathers. Using a standardized measure of mental health well-being, this study aims to report the prevalence of potential psychological mental health disorders amongst a cohort of primarily Pacific fathers within the PIF Study over the first 6-years of the child's life. Additionally, important covariates for the potential mental health disorders are investigated.

Methods

Participants

The PIF study follows a cohort of Pacific Island infants born at Middlemore Hospital between 15 March and 17 December 2000. All potential participants were selected from births where at least one parent was identified as being of Pacific Island ethnicity and a New Zealand permanent resident. Participants were identified through the Birthing Unit, in conjunction with the Pacific Islands Cultural Resource Unit. Information about the study was provided and consent was sought to make a home visit.

Approximately 6-weeks postpartum, potential participants were allocated to a team of female Pacific interviewers fluent in both English and a Pacific language. In most cases the interviewers were ethnically matched to the potential participant. The interviewers visited the potential participant in their own homes, fully described the study with

the parent(s) and obtained the mother's informed consent. Once consent was obtained, the interview was carried out in the mother's preferred language. When the children reached their first, second, fourth and sixth birthdays all maternal participants were re-contacted and revisited by a female Pacific interviewer. Again, consent was obtained before the interview was conducted in the mother's preferred language. At the time of the first, second and sixth year interviews, mothers were asked to give permission for a male Pacific interviewer to contact and interview the father of the child. If permission and paternal contact details were obtained then a Pacific male interviewer contacted the father to discuss participation in the study. Once informed consent was obtained, fathers participated in one-hour interviews concerning family functioning and the health and development of the child. This interview was conducted in the preferred language of the father. Within the context of a wider interview, issues of paternal health were measured using various screening tools, including the 12-item General Health Questionnaire. Detailed information about the PIF cohort and procedures is described elsewhere.[19]

Ethical clearance

Careful consideration is always applied to the ethical aspects of this longitudinal study with Pacific peoples. Ethical approval for the PIF study was obtained from the Auckland Branch of the National Ethics Committee, the Royal New Zealand Plunket Society, and the South Auckland Health Clinical Board.

Measures

Psychological disorder at 1-year, 2-years, and 6-years:

At 1-year, 2-years, and 6-years measurement waves, paternal mental health was assessed using the 12-item General Health Questionnaire (GHQ12),[20] a self-report screening tool widely used to identify minor psychiatric disorder. Using the binary method, the GHQ12 was scored to give a total of 12 and a cut-point value of 2 was used to indicate potential psychological disorder.[20] Fathers who scored ≥2 were defined as symptomatic for potential mental disorder, and fathers who scored <2 were defined as non-symptomatic.

Socio-demographic and potential confounding variables: Socio-demographic characteristics and variables known association with potential psychological disorder were investigated, including age, ethnicity, being New Zealand born, and household income at baseline, highest educational qualification at baseline, current smoking status, current alcohol drinking status, current employment status, marital status and acculturation.

Development of acculturation measure:

This measure was adapted from the General Ethnicity Questionnaire (GEQ),[21] and two scales were developed: the New Zealand (NZACCULT) and Pacific (PIACCULT) version. Modifications were made to the GEQ to make it appropriate and relevant to Pacific peoples and New Zealand society as a whole. Specifically included were questions relating to language, social affiliation, activities, exposure in daily living and food, and also included questions relating to contact with Pacific family and relatives and attendance at church, both of which were considered important in a Pacific context in New Zealand society.[22] Similarly, inclusion of sport as a particular recreation was included because of the perceived importance of Pacific youth involvement in New Zealand sport and its importance in the context of the wider New Zealand society.[23]

Assessment of acculturation:

Using the model of Berry,[24-26] the acculturation variable describes four distinct categories for respondents depending on whether the acculturation strategy is freely adopted by the individual, or imposed by the dominant culture. Each of the respondents was individually scored on both the NZACCULT and PIACCULT scales and allocated to one of the categorical classes dependent on whether their individual score fell above or below the median of the full group, namely: Separationalist (Low New Zealand – High Pacific); Integrator (High New Zealand – High Pacific); Assimilationalist (High New Zealand – Low Pacific); Marginal (Low New Zealand –Low Pacific).

Statistical analysis

Categorical variable comparisons between groups were made using Fisher's exact test. Due to the longitudinal non-normal data, binomial generalized estimating equation (GEE) models were employed to investigate relationships between fathers mental health status over time in crude analyses and when adjusted for potential confounding variables.[27] Binomial GEE models were also used to model whether there were systematic patterns in attrition with sample sub-groups. An unstructured correlation matrix was employed and robust Huber-White sandwich variance estimators used for all GEE analyses. Statistical analyses were performed using SAS version 9.1 (SAS Institute Inc., Cary, NC, USA) and Stata version 10.0 (StataCorp, College Station, TX, USA) software and $\alpha=0.05$ was used to define statistical significance.

Results

Nine hundred and ninety-nine of the mothers interviewed at 12-months had partners who met eligibility criteria, of whom 825 (83%) were interviewed. Most, 820 (99%), were the biological fathers of the children with five adoptive or stepfathers. For ease

Table 1. Frequencies (percentage) of different socio-demographic variables at baseline over measurement waves (1-year n=825, 2-years n=757, and 6-years n=591).

Variable	Measurement Waves			
	12 months n (%)	2 years n (%)	6 years n (%)	P-value
Age at baseline (years)				
<20	7 (0.9)	4 (0.7)	4 (0.9)	<0.001
20-29	314 (38.2)	215 (36.0)	145 (33.1)	
30-40	390 (47.4)	286 (47.8)	219 (50.0)	
≥40	112 (13.6)	93 (15.6)	70 (16.0)	
Ethnicity				
Samoan	440 (53.3)	350 (58.3)	213 (48.5)	0.12
Cook Islands Maori	73 (8.9)	50 (8.3)	32 (7.3)	
Niuean	26 (3.2)	19 (3.2)	13 (3.0)	
Tongan	199 (24.1)	121 (20.2)	142 (32.4)	
Other Pacific	28 (3.4)	20 (3.3)	15 (3.4)	
Non-Pacific	59 (7.2)	40 (6.7)	24 (5.5)	
New Zealand Born				
Yes	203 (24.6)	149 (24.8)	95 (21.6)	0.17
No	621 (75.4)	451 (75.2)	344 (78.4)	
Highest educational qualification at baseline				
No formal qualification	481 (58.4)	345 (57.7)	270 (61.8)	0.12
Secondary	220 (26.7)	163 (27.3)	96 (22.0)	
Post-secondary	122 (14.8)	90 (15.1)	71 (16.3)	
Acculturation				
Assimilationist	305 (37.0)	216 (36.0)	140 (31.9)	0.01
Separationalist	302 (36.6)	208 (34.7)	188 (42.8)	
Integrator	75 (9.1)	53 (8.8)	38 (8.7)	
Marginal	143 (17.3)	123 (21.0)	73 (16.6)	
Household Income at baseline				
$0-$20,000	216 (26.2)	185 (24.4)	152 (25.7)	0.005
$20,001-$40,000	486 (58.9)	455 (60.1)	334 (57.0)	
>$40,000	103 (12.5)	102 (13.5)	84 (14.2)	
Unknown	20 (2.4)	15 (2.0)	21 (3.6)	

Note: n=164 fathers included at 2 years did not participate at 12 months; and n=158 fathers included at 6 years did not participate at 12 months

of exposition, we shall refer to this group collectively as 'fathers' hereafter. Most, 786 (95%), fathers were living with the biological mother in a married (77%) or de facto (18%) relationship. Their mean age was 32.1 years (range: 17-65 years). At the 2-year interview, 938 mothers consented to the child's father to act as a collateral respondent of whom 757 (81%) consented and completed the interview, while at the 6-year interview 848 mothers consented and 591 (70%) fathers completed the interview. The numbers of fathers participating has significantly decreased over time (P<0.001). As father recruitment for each measurement wave was conditional on mother's consent, 164 fathers interviewed at the 2 year measurement phase did not participate in the 12 month phase, and 158 fathers interviewed at the 6 year measurement phase did not participate in the 12 month phase. Overall 1053 fathers are included in this study with 271 (26%) fathers completing one measurement wave, 444 (42%) fathers completing two and 338 (32%) fathers completing all three measurement waves.

Summaries of the frequencies and percentages of socio-demographic variables at baseline for the participants in the study over the three measurement waves are presented in Table 1. After accounting for the attrition over time, there were no significant differences in attrition across different ethnic groups, place of birth groups and highest educational qualification groups over the measurement waves. However, younger fathers, assimilationists and those fathers with lower household incomes were significantly more likely to attrite from the studies than their older, non-assimilationist and higher income counterparts. Despite the distributions of age, acculturation and household income changing over measurement waves, the overall percentage differences remained relatively small (Table 1).

Table 2 shows the frequencies and percentages for potential confounding variables amongst the participant fathers over the three different measurement waves. The findings indicate that the majority of participants in the study are married or in defacto relationships, are non-drinkers and non-smokers, and are in full-time employment.

Table 2. Frequencies (percentage) of different confounder variables over measurement waves (1-year, 2-years, and 6-years).

Variable	Measurement Wave		
	12 months n=825 n (%)	2 years n=757 n (%)	6 years n=591 n (%)
Marital Status			
Married/De Facto	789 (95.6)	724 (95.8)	568 (97.1)
Separated/Single	36 (4.4)	32 (4.2)	17 (2.9)
Current smoking status (cigs/day)			
Non-Smoking (0)	490 (59.5)	414 (54.8)	363 (62.1)
Regular Smoker (1-9)	123 (15.0)	175 (23.2)	90 (15.4)
Moderate Smoker (10-19)	169 (20.5)	123 (16.3)	87 (14.9)
Heavy Smoker (>20)	41 (5.0)	44 (5.9)	45 (7.7)
Current alcohol drinking status			
Non-Drinking	578 (70.2)	536 (71.0)	425 (72.0)
Monthly or less	209 (25.4)	185 (24.4)	117 (19.8)
2-4 times month	34 (4.1)	28 (3.7)	36 (6.1)
2-3 times week	3 (0.4)	8 (1.1)	12 (2.0)
Current employment status			
Unemployed	109 (13.2)	96 (12.7)	57 (9.6)
Full-time employment	666 (80.7)	605 (80.0)	485 (82.1)
Part-time employment	28 (3.4)	24 (3.2)	27 (4.6)
Full time parent	5 (0.6)	6 (0.8)	5 (0.9)
Student/other	17 (2.1)	25 (3.3)	17 (2.9)

The frequencies of symptomatic mental health indications over each measurement wave, estimated odds ratios (ORs) and associated 95% confidence intervals (95% CI) are presented in Table 3. In crude analysis, the results show that participants are 1.75 times more likely to be symptomatic at 2 years and 2.67 times more likely to be symptomatic at 6 years, than at the 12 month measurement phase; a significant time effect (P-value<0.001). The adjusted analysis results were similar to those of the crude analysis, indicating that this association did not appear to be confounded by the socio-demographics and covariates considered here (Table 3).

Table 3. Numbers, and frequency of symptomatic mental health indications from the GHQ12 over measurement waves since child's birth, together with crude and adjusted OR estimates and associated 95% confidence intervals (95% CI) derived from binomial generalised estimating equation (GEE) models.

Measurement		Symptomatic		Crude			Adjusted†		
Wave	Total	n	(%)	OR	(95% CI)	P-value	OR	(95% CI)	P-value
12-months	825	32	(3.9)	1.0	Reference	<0.001	1.0	Reference	<0.001
2-years	757	50	(6.6)	1.8	(1.1, 2.7)		1.7	(1.1, 2.8)	
6-years	591	58	(9.8)	2.7	(1.7, 4.2)		3.2	(1.9, 5.2)	

†*Adjusted for all variables listed in Tables 1 and 2.*

Table 4 presents the ORs and 95%CI for the socio-demographic and covariates used in the adjusted analysis. Ethnicity, current smoking status, employment status and marital status were all significantly associated with symptomatic mental health indications from the GHQ12. When studying these variables further, Cook Islands or Tongan ethnicity, being a regular smoker, being unemployed, and having marital status of separated or single all had increased odds for symptomatic mental health indications.

Table 4: Adjusted OR estimates and associated 95% confidence intervals (95% CI) derived from binomial generalised estimating equation (GEE) models for all variables.

Variable	OR	(95% CI)	P-value
Age (years)			
<20	1.0	Reference	0.42
20-29	2.0	(0.3, 16.3)	
30-40	2.6	(0.3, 20.5)	
≥40	3.3	(0.4, 27.4)	
Ethnicity			
Samoan	1.0	Reference	<0.001
Cook Islands Maori	2.9	(1.5, 5.6)	
Tongan	2.3	(1.2, 4.1)	
Other Pacific	0.8	(0.3, 2.2)	
Non-Pacific	2.3	(0.9, 5.5)	
New Zealand born			
Yes	1.0	Reference	0.06
No	1.8	(1.0, 3.2)	
Highest educational qualification at baseline			
No formal qualification	1.0	Reference	0.69
Secondary	1.0	(0.5, 1.9)	
Post-secondary	1.3	(0.7, 2.5)	
Acculturation			
Assimilationist	1.0	Reference	0.28
Separationalist	1.1	(0.5, 2.3)	
Integrator	1.4	(0.6, 3.1)	
Marginalist	1.8	(0.9, 3.5)	
Household Income at baseline			
$0-$20,000	1.0	Reference	0.42
$20,001-$40,000	1.0	(0.6, 1.7)	
>$40,000	0.7	(0.4, 1.4)	
Unknown	0.3	(0.1, 2.3)	
Marital Status			
Married/De Facto	1.0	Reference	0.004
Separated/Single	3.2	(1.5, 7.1)	
Current smoking status (cigs/day)			
Non-Smoking (0)	1.0	Reference	0.04
Light Smoker (1-9)	1.9	(1.1, 3.2)	
Moderate Smoker (10-19)	1.7	(1.0, 2.9)	
Heavy Smoker (>20)	2.1	(1.0, 4.4)	
Current alcohol drinking status			
Non-Drinking	1.0	Reference	0.35
Monthly or less	0.8	(0.5, 1.4)	
2-4 times month	1.7	(0.8, 3.5)	
2-3 times week	2.2	(0.4, 13.1)	
Current employment status			
Unemployed	1.0	Reference	<0.001
Full-time employment	0.3	(0.2, 0.6)	
Part-time employment	0.5	(0.2, 1.4)	
Full-time Parent	0.6	(0.1, 7.0)	
Student/other	0.6	(0.2, 2.2)	

Discussion

Prevalence of mental disorder

Our analysis identified 3.9% of fathers with potential psychological disorder in the 1st year after the birth of their child, increasing to 6.7% and 9.8% in the 2-year and 6-year postpartum phases. By comparison, findings from the Te Rau Hinengaro study indicate that currently amongst Pacific people 25% or 1 in 4 are mentally unwell.[17] Although the Te Rau Hinengaro study findings are based on a personal interview survey of a nationally representative sample of people aged 16 years and over living throughout New Zealand, making direct comparisons difficult. While low initially, the increasing potential mental health disorder within our male cohort is of concern for the function and well-being of the fathers themselves and the family unit. However, Pacific viewpoints of mental illness differ distinctly from Western medical approaches. Pacific cultures tend to view the cause of mental illness as being either spiritual or inherited, and treatment is delivered in the traditional way by traditional or 'spiritual' healers.[28] A holistic approach to mental health is often utilized by Pacific peoples, thus requiring that all aspects of a person's life – spiritual, physical, emotional and family – to be in harmony.[28] The application of this holistic framework to potential mental disorder amongst Pacific fathers, emphasizes the need to discern and understand potential risk factors which significantly increase the likelihood of developing mental disorder.

These findings highlight the necessity for further research to understand what particular issues and concerns make these ethnicities more susceptible to potential mental illness.

Significant risk factors

In addition to time postpartum, a number of other variables were found to be significantly associated with potential psychological disorder; being a regular smoker was one such variable. According to the Mental Health Foundation of New Zealand, there is little research available regarding the effects of smoking on mental health in New Zealand.[29] However, internationally it has been reported that smoking prevalence is significantly higher among people with mental health problems than among the general population.[30] Additionally, smoking prevalence was the highest among those people diagnosed with a psychiatric disorder, and daily cigarette consumption is considerably higher among smokers with mental health problem.[31] One of the major explanations put forward to explain smoking prevalence among mental illness sufferers is that it is a coping mechanism for dealing with feelings of isolation and mental illness. [31] Furthermore, previous research suggests that the nicotine in cigarettes may help to alleviate some of the side effects of medication for mental illness sufferers, thereby encouraging them to keep smoking.[32] Consequently, our research compliments previous international findings that indicate there is a significant association between smoking and mental health. It is, however, unclear whether smoking is a causal factor, or whether it is a proxy variable for other risk factors associated with potential mental disorder.

The relationship between full-time employment and mental illness was also significant with those who work full-time less likely to develop potential mental disorder compared to those who were unemployed. This finding is consistent with findings from a Mental Health Commission of New Zealand report[33] which found that employment and mental health were definitely linked and that employment helps mental illness sufferers in their recovery and decreases their dependence on services. Despite a lack of systematic research in New Zealand on discrimination experienced by people with mental illness in the labour force, people with mental illness and mental health service providers cite discrimination as a key barrier to employment more than any other factor, potentially affecting the chances for recovery and also increasing the likelihood of potential psychiatric disorder developing.[33]

Marital status was also significantly related to mental illness, with those who were separated or single being significantly more likely to develop potential mental disorder than those who were married or in de facto relationships. These findings concur with previous results which have revealed that married spouses serve as sources of beliefs and validators of identity, leading to positive self-image and a source of resilience when dealing with everyday stresses.[34] Likewise, marital disruption may create vulnerability to stresses, with divorced people reporting worse mental health due to stresses and strains associated with role transitions.[35]

Finally, the relationship between Cook Islands or Tongan ethnicity and mental illness was also found to significantly affect the likelihood of developing potential mental disorder. Apart from the Te Rau Hinengaro Mental Health Survey, little work has been done on the prevalence of mental illness amongst Pacific people, and particularly ethnic specific information on prevalence of mental illness. Our findings may support the proposal that Pacific approaches and understandings of mental illness differ markedly from western perspectives, and some Pacific ethnic groups describe mental illness in ways that are unique to their own particular culture.[28] For instance, Samoan perceptions of mental illness are frequently described in terms of spiritual relationships or the breaking of forbidden traditions.[36] Therefore, these findings highlight the necessity for further

research to understand what particular issues and concerns make these ethnicities more susceptible to potential mental illness.

Strengths of the research

The PIF study provides information from the first, large, and culturally diverse sample of Pacific fathers within New Zealand. The sample composition is approximately representative,[19,37] and although it suffers from significant attrition, remains reasonably representative over time (Table 1) suggesting that any findings are likely to be generaliseable. Other key features of this research are the strong study design and the sophisticated generalized estimating equation (GEE) model analytic techniques employed to examine data from the PIF cohort over time. Moreover, the PIF study design is multi-disciplined, broad-based and inclusive—capturing information from mothers, fathers and their children. In general the PIF study aims to identify and characterize both positive and negative health outcomes amongst participants, understand the mechanisms and processes leading to those outcomes, and make empirically based strategic and tactical recommendations to improve the wellbeing of Pacific children and families and thereby benefit New Zealand society as a whole.[37]

The GHQ12 is a standardized measure of general health, including mental health, used internationally – with good specificity and sensitivity.[38] The GHQ12 was developed as a screening instrument to provide information on the mental well-being of respondents. This is achieved by assessing normal healthy functioning, and the appearance of new distressing symptoms, rather than giving a specific psychiatric diagnosis.[20] A key strength of the GHQ12 instrument is its accuracy and ease of administration as a screening tool for the identification of symptomatic (those with potential psychiatric disorder) and non-symptomatic (those with no significant risk of potential psychiatric disorder), symptomatic being identified by specified cut-off scores.[38] Subsequent research has confirmed that despite its shortened form, the GHQ12 is as accurate in screening and case detection as longer versions of the GHQ.[38]

Limitations

A potential limitation to this research is the attrition seen amongst the cohort. Attrition, particularly differential attrition, is problematic as it can cause systematic bias within study findings. It has also been suggested that non-responders in longitudinal studies can often be those that are most likely to be the worst off or, in this instance, are more likely to be symptomatic of mental health disorder.[39] However, at baseline, the prevalence of potential mental health disorders was at its lowest. So while the subsequent measurement waves may underestimate the underlying rate of mental health disorders, the figures at baseline are likely to be robust.

While having strengths, the GHQ12 may also suffer from weakness. Despite its success as an accurate screening measure for psychological disorder, there are varying methods in which symptomatic or non-symptomatic cases are defined. For example, the traditional method of scoring the questions is a binary method but the GHQ can also be scored as a Likert scale or by assigning different weights to questions associated with illness or health.[40] The threshold or cut-scores for the GHQ not only vary with the scoring method and length of questionnaire but also across populations. As a result, there can be vastly different rates of case detection depending on which scoring method is employed for the analysis.[41] However, this is alleviated in our longitudinal study by explicitly articulating our threshold and then consistently employing this threshold over all measurement waves. This given internal validity to our study, and external validity for those studies adopting the same threshold level.

Another important limitation of the findings is the fact that family size, composition and child number and order was not measured from fathers or accounted for in the analysis. The composition of the household and number of children in the family unit could potentially affect the amount of stress present in the home and thereby increase the likelihood of potential psychiatric disorder.

Policy Implications

There is an obvious lack of robust information on the mental well-being of Pacific fathers, and although the prevalence rate of potential mental disorder is lower in our sample compared to the general Pacific population, there is an increasing trend over time. Therefore health of fathers should be targeted as a priority research objective, especially given their important role in influencing the health and well-being of children. Likewise, further investigation must be undertaken to examine some of the variables which significantly increase the likelihood of developing potential mental health disorder. Although some of the issues such as smoking are already key factors which have been identified as affecting health, more comprehensive research should be initiated to gain a more detailed understanding of the associations with potential mental disorder. This may help to establish potential strategies to mitigate or prevent the increase of potential mental disorder among fathers.

Conclusion

Within our cohort of participant fathers in the PIF study rates of mental health symptomatic indications were low but there is a significant trend of increase over time. Fathers who were regular smoking, being unemployed, being separated or single, and being of Cook Islands and Tongan ethnicity had significantly increased likelihood of being symptomatic for

potential psychological disorder. However, further investigation should be conducted to determine what specific element of variables is responsible for this relationship. Moreover, future measurements over time are needed to establish whether this increasing mental health symptomatic indication prevalence continues, plateaus or declines with advancing child age.

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