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Pacific families navigating responsiveness and children's sleep in Aotearoa New Zealand

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ABSTRACT

The stakes for understanding sleep practices are rising as health inequalities related to sleep become more apparent. Pacific peoples in Aotearoa New Zealand face disproportionate challenges around poverty and health and sleep is one growing area of importance in addressing health inequalities. Through a qualitative study of 17 Pacific families in Aotearoa New Zealand, we provide a rare and valuable glimpse into the familial, cultural, social and economic context of sleep for Pacific families and children in New Zealand. These Pacific families uphold a core value of responsiveness to family, community, culture and faith. These values feed wellbeing in a variety of ways, especially when health is considered through Pacific, holistic frameworks. These families apply the same responsiveness to economic pressures, often taking on shiftwork. We show how responsiveness to family and culture, as well as limited economic means, permeates sleep practices within these Pacific households. These broader shaping factors must be acknowledged, considered, respected and integrated into any healthy sleep initiatives and interventions, in order to ensure benefit - and not harm - is achieved.

1. Introduction

The stakes for understanding sleep practices are rising as health inequalities related to sleep become more apparent. Sleep deficiency among adults is believed to contribute to the risk of cardiovascular disease, diabetes, obesity and cancer [22]. Similarly, adverse effects such as an increased risk of obesity, poorer emotional regulation, lower academic achievement and poorer quality of life and wellbeing can be observed in children who receive insufficient sleep [8,38]. Sleep is now firmly positioned as a 'health imperative' [22]. International studies demonstrate significant cross-cultural differences in sleep, differences that are apparent within New Zealand as well [25,19,46,29,13]. Though many anthropological studies, and others, demonstrate its relative rarity, a particular Westernized conceptualization of ideal sleep practices remains dominant in many sleep health initiatives. This dominant sleep paradigm (evident, for example, in New Zealand's Ministry of Health website) promotes set bedtimes, quiet, dark and temperature-controlled sleeping environments, separate bedrooms, and a range of practices meant to "optimize" independent infant sleep [17,6]. Practices that fall outside these behaviors are often negatively framed [14,6]. Furthermore, the biomedical approach that currently dominates behavioral sleep research and prevalent behavioral sleep interventions rarely accounts for cultural variations and contexts that fall outside this dominant paradigm [6,1]. Failure to recognize the true diversity of sleep practices and contexts contributes to further health inequities and stigmatization of non-dominant groups.

Healthy and safe sleep messages in New Zealand, while always aiming to improve health and save lives, have not always resonated well with ethnically diverse families [33,44,14]. For example, the "Back to Sleep" campaign launched to combat Sudden Unexplained Death in Infancy (SUDI) in New Zealand halved SUDI within 2 years. Māori babies, however, remained 7 times more likely to die from SUDI compared to Pākehā babies [11,28]. This inequity was linked back to the common practice of bed-sharing in Māori whānau, which was both culturally and socio-economically determined. Early messages against bed-sharing focused on the biggest risk—maternal smoking (including smoking in pregnancy) combined with bed-sharing but this evolved into an all-encompassing message against bed-sharing in general

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[16]. Recommendations to avoid bed-sharing were not accepted by many whānau. Māori SUDI researchers and practitioners have worked hard in the subsequent years to create safer sleep messages and resources tailored for Māori whānau; these efforts have reduced disparities in outcomes [5,42,43]. This is a clear and important demonstration of the need for sleep messages and interventions that are culturally informed for diverse communities.

Family and socio-cultural factors are now well-recognized as integral to shaping a child's sleep and are included in very limited number of conceptual models of children's sleep [24,36], but these models do not examine the unique aspects of different cultural sleep practices. In this paper, we aim to provide a rare, valuable and intimate peek into the unique social, cultural and economic entanglements of sleep in 17 New Zealand based Pacific families. Our hope is that these sensitive, nuanced depictions of sleep will inform sleep interventions for Pacific children and families in New Zealand.

Demonstrating first that child sleep is *family* sleep, we go one step further to show that children's sleep occurs within households and families that are, in turn, shaped by cultural and social values as well as economic realities. Specifically, we show how "responsiveness" – to family and to culture – influences sleep practices within these Pacific households while limited economic means permeates sleep practices as well. Culture is too often labelled a "barrier" in health interventions; without identifying positive cultural implications for wellbeing, any researcher or interventionist is unlikely to produce meaningful change [1]. With the ultimate goal, then, of contributing to the mitigation of health inequities, we argue that the complexity of these broader shaping forces – social, cultural and economic – must be acknowledged, considered, respected and integrated into any healthy sleep initiatives and interventions.

1.1. Pacific in New Zealand

'Pacific' is a term of convenience used to represent the diverse range of peoples from over 20 distinct island nations. New Zealand has strong ties with the smaller Pacific Island nations to its North, providing economic aid and development as well as housing large Pacific migrant communities within New Zealand. Since the 1950s, Pacific peoples have migrated to New Zealand for various reasons, employment and education among them. The Pacific community in Aotearoa encompasses both long-standing and recent migrants; 62% of the Pacific population in New Zealand is now New Zealand born. Pacific peoples in New Zealand are predominantly ancestrally tied to Polynesian countries with Samoans, Tongans and Cook Islanders making up 90% of the total Pacific population living in New Zealand [26].

The Pacific population in New Zealand is young and growing, with a median age of 22.1 years, 16 years younger than the median age of the total New Zealand population. Overall, the Pacific population has the highest proportion of children under 14. As of the 2013 census, the Pacific population numbered just shy of 300,000 people or just under 8% of New Zealand's population and is forecast to grow to 11% of the New Zealand population in the next 20 years [32,39].

There is no question that Pacific people face disproportionate challenges around poverty and lack of opportunity [37]. For example, Pacific people have an extremely low home ownership rate (18.5% vs 50.2% of the total New Zealand population) and are 7 times more likely to live in social housing than other New Zealanders. Furthermore, Pacific people were almost twice as likely as the rest of the population to report living conditions that were "always or often" cold and have consistently experienced the highest level of overcrowding [32,37]. Fifty-six per cent of Pacific peoples, the majority, live in the most deprived areas.

Pacific peoples have a higher rate of unemployment (11.1% compared with 5.7% national unemployment rate) and are over-represented in low-skill, low-pay and insecure occupational groups [32]. They have the lowest net worth, the lowest median income [32,26]. Pacific peoples in New Zealand also have poorer health and more unmet healthcare needs. They have lower life expectancies (5 and 4.5 years lower for males and females respectively) as well as an inequitable burden of chronic disease; the rate for diabetes in particular is 2.8 times that of non-Pacific adults. Pacific peoples also disproportionately suffer from illnesses connected to poor housing like pneumonia, respiratory illness, asthma and rheumatic fever [37]. They also carry a higher burden of mental health disorders and psychological distress [3,27]. When it comes to sleep, we know that only 58.6% of Pacific peoples in New Zealand met slept duration recommendations in recent years, as opposed to 80.6% of New Zealand Europeans and 69.2% of the total national population [18].

These inequities, however, do not diminish the aspirations and resilience of Pacific communities in New Zealand. As Salesa [37] has written, with less capital and less government support, Pacific people have crafted vibrant and dynamic communities in New Zealand. Though they may carry heavier burdens and have fewer opportunities, they prioritize investing their social, political and cultural energy into their families. They have built enduring institutions like churches and sporting organizations and maintained strong transnational ties. According to the New Zealand General Social Survey, Pacific people are the most likely to never feel lonely and are by far the most satisfied in ratings of overall life satisfaction – "no other group comes close" [37]. With strong aspirations to thrive in New Zealand, health and wellbeing is one of the foremost concerns of Pacific communities. Innovation is required to address the health inequities made evident in the statistics. While sleep is rapidly growing area, there is limited literature linking sleep and Pacific health and no published qualitative studies dedicated to Pacific children, sleep and health. This research addresses this gap.

2. Methods

This is a reflexive and interpretivist social science research project which actively deconstructs neocolonial presumptions on neutral and unpositioned knowledge construction. As such, the project will not conform to positivist social science research methods. With an openness to the myriad of influences that could shape sleep for Pacific families, our epistemological stance is reflected by a pan-Pacific model of health - the Fonofale Model. Whereas dominant biomedical models of sleep tend to focus solely on the individual [1], the Fonofale Model considers health holistically and intertwined with the wellbeing of families and communities [7,35]. The Fonofale Model illustrates that family is the foundation for health (see Fig. 1) [7,34] and well-being involves body, mind, spirit and culture, while taking into account broader contexts such as time and environment. From this perspective, Pacific children's sleep cannot be viewed in isolation; indeed it emerged as enmeshed in families and households that are dynamic, responsive spaces shaped by local and transnational ties, cultural values and economic realities.

To recruit families that identified as Pacific, with children under 18, we reached out to Pacific community networks through our personal and professional circles, including advice and assistance from Pacific advisory and community groups. Seventeen families were identified in this manner and all agreed to participate. With two out of three Pacific families in New Zealand living in Auckland, much of the information for and about Pacific peoples in New Zealand stems from this majority. We intentionally focused on the often-overlooked Pacific families in New Zealand's more rural

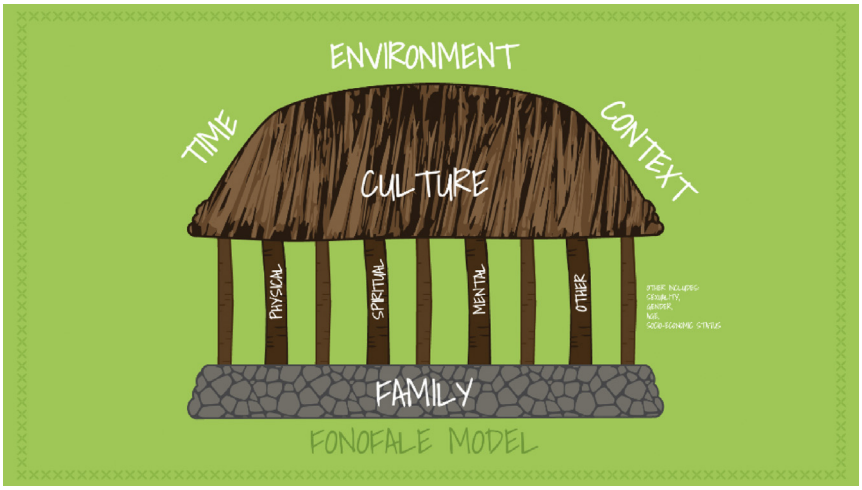

Fig. 1. The Fonofale Model, originally created by Ref. [34]. This depiction created by Michael Lameta.

lower South Island. For example, in order to reach two families, we drove 2 hours along quiet, rolling roads through lush green paddocks dotted with sheep. Inserting this imagery into our methods discussion is an important and deliberate disruption of the incomplete and harmful assumptions of Pacific people living only in New Zealand's dense urbanscapes. The 17 families in this project resided in Christchurch (3), Oamaru (3), Dunedin (9) and Invercargill (2). Oamaru was added at the advice of our Pacific Advisory Committee as it is the fastest growing Pacific community outside of Auckland.

The interviews followed a conversation model of enquiry commonly associated with Pacific models of communication called Talanoa. Vaioleti (2006: 24) has described Talanoa (using an example from Samoa) as "the ancient practice of multi-level and multi-layered critical discussions and free conversations." It allows social conversation which may lead to critical discussion and co-constructed knowledge that is richly contextualized [45]. Fifteen of the 17 interviews took place in the families' homes with multiple family members present, including children. Two interviews were conducted at the participant's respective work-places, one with multiple family members present. Conducting interviews in family settings means it is difficult to specify the exact number of individual "interviewees" (an excellent example of the embedded dominant culture assumptions behind a topic as seemingly "neutral" as methods) - as children, family members, even friends and neighbors came and went. We welcome that ambiguity as a reflection of the lived reality of Pacific households that we, the researchers, stepped into for an hour or two. Furthermore, as reflected in the Fonofale Model of health, isolating individuals is inappropriate and unfamiliar; this family style of interviewing ensured cultural safety of our Pacific participants and likely produced better quality data. "Being there", in their homes (with care and sensitivity) also meant sometimes observing some family sleep practices – such as children falling asleep on the couch next to us or mom or dad hurrying off to a night shift after our evening interview. Numbers and statistics are not always possible, rather the significant strength of this approach lies in the detailed, personal accounts that emerge when such care is taken. As Waring (2018:15) notes 'Underneath the numbers, a philosophical judgement is always being made based on values, not facts.'

To step into some Pacific families' lives and homes, careful maintenance of cultural safety and good rapport was paramount and certain aspects of the interviewers' identity helped to create this safe space. Molly, an experienced qualitative interviewer and an American immigrant permanently living in New Zealand, contestably sits within New Zealand's "Pakeha" category. Molly was pregnant during all the interviews and had a 5 year old son at home. Molly's migrant status made her particularly attuned to some migration-related discussion points brought up by our participants, such as the significant emotional and logistical work involved in applying for residency or the challenges of maintaining relationships over Skype. Her pregnancy and young son at home also aided in developing rapport when discussing the trials and tribulations of sleep with young children. Rose's family is from Vaimoso in Samoa and Karaiesetete (Christchurch) in New Zealand, where she was born. Rose is an experienced health researcher and, as a Samoan parent whose family spans both New Zealand and the Pacific region, navigated appropriate Pacific protocols for visiting people's homes and respectful dialogue, with support from the wider Pacific advisory team.

Molly and Rose's efforts to ensure cultural and emotional safety and comfort were not only ethically appropriate but were vital to this research because sleep can feel like a morally policed terrain for some in New Zealand and beyond. For example, some people are reluctant to reveal what they "really" do in their sleep practices in relation to what they think they "should" do for fear of judgment [14,33]. Molly and Rose explicitly identified themselves as researchers, and moms, rather than "sleep experts" or any sort of service provider or authority. We clarified that we were collecting stories and insights around sleep, not providing instruction nor critique. We always arrived with a small plate of food to share and supermarket gift vouchers as mea'alofa [Samoan expression meaning gift to thank and acknowledge their contribution]. Had Molly and Rose not created this safe space and built this rapport, our participants may very well have not shared such personal family stories and circumstances with us. Furthermore, we provide this detail to offer guidance to future researchers working with Pacific communities on this topic.

Molly and Rose asked families about their sleep practices with open-ended questions and conversational flow. Participants reflected on their current sleep practices as well as that of their children, grandchildren and others in their household. Many also reflected upon sleep in the past, as remembered from childhood. Those who had lived in or travelled to the Pacific Islands, often reflected upon similarities and differences pertaining to sleep in the Islands vs sleep in New Zealand. Interviews took place between March and October 2018 and lasted between 1 and 3 hours. With permission, all interviews were recorded and transcribed and

transcripts were returned for each family to review if they chose. Dunedin based families were offered the opportunity to be interviewed a second time, three families did so, adding a few extra thoughts to their interview data. Interviews were recorded, transcribed, anonymized (all names used here are pseudonyms), and entered into NVivo software along with additional fieldnotes. A process of open-coding was employed where no pre-determined theories were conceptualized but rather patterns, categories and themes were derived from multiple readings of the empirical data itself [9,40]. Molly and Rose identified emergent themes and discussed them at length. Two other authors (BW and AL), both Pacific health researchers who identify as Pacific, then reviewed some of the raw data and emergent themes for further validation. Emergent themes were also presented at a Pasifika Medical Association conference in Niue where Pacific colleagues verified and supported our emerging theme of "responsiveness" in Pacific families as having an impact upon sleep. The project had ethical approval from the University of Otago (d17/323).

3. Results

The 17 Pacific households in this study were busy and warm. Parents and grandparents in the study ranged in age from mid-twenties to mid-sixties. All families had children under 18 living at home and their family lives were filled with activities, pursuits and responsibilities. The parents in this study worked hard while intensively caring for their children and sometimes other family members. They watched over their children's education often while also pursuing more of their own. The families were involved with church congregations, sports teams, cultural communities and more. The families represented some of the varied ethnicities and nationalities umbrellaed under the term "Pacific" (including Samoan, Tongan, Fijian, Tokelauan, Cook Islander as well as family members who identified themselves as Palagi and Māori.) All Pacific participants were migrants or second generation New Zealanders with strong Pacific ties — their memories and present lives spanning oceans, languages and cultures.

Pacific children are enmeshed in Pacific families and communities, which are in turn embedded in broader cultural and economic contexts. The Pacific families in this research demonstrated and described living with responsiveness - to their families, to their communities and to their cultures. This lived responsiveness often fed and supported fundamental aspects of individual and collective wellbeing as depicted in the Fonofale Model. However, these families were also often simultaneously being responsive to economic pressures and hardships that disproportionately affect Pacific families. Their responsiveness to family, community and culture, combined with economic pressures that they also met with responsiveness, shaped sleep practices for all in the family.

3.1. Sleep and responsiveness to family, culture and community

3.1.1. Responsiveness to family-in-motion

The Pacific families in this study maintained a responsiveness to community and family that directly impacted upon their sleep in a myriad of ways. During our interviews, it was obvious that we, the interviewers, were interacting with permeable households that were part of a much larger community and family network made of many moving, travelling parts. Through our interviewees, we witnessed and heard about families-in-motion: families moving between the Pacific Islands and New Zealand, moving within New Zealand, or moving regularly between households in the same city. As each family maintained a responsiveness to the broader family-in-motion, the families' sleep spaces and sleep itself were impacted.

As members of extended transnational families, many in this study lived with relatives upon arrival in New Zealand or hosted those arriving from the Islands. One participant, Siale, did both. On arriving in New Zealand, Siale, her husband and toddler moved in with her husband's Auckland-based family. The three shared one room and Siale, terribly homesick, struggled to sleep. Years later, the three settled into their own home and were hosting Siale's teenage niece and nephew who had come from the Islands to attend high school and do an electrical apprenticeship, respectively. In their three bedroom home, Siale's 11 year old son Charlie no longer had a room of his own but flowed between sharing a set of bunks with his cousin, a bed with his parents, or sleeping on the couch in the lounge. Of more concern to Charlie than his changeable sleeping space was the music his teenage cousin played while doing her homework — this sometimes kept him awake at night.

These South Island based Pacific families regularly reconfigured their living and sleeping spaces, including converted garages, to accommodate family from the Islands, from Auckland, or just from across town. For example, in Filipe and Talia's home at the time of our interview, Filipe's father was visiting from Fiji for several months. Filipe and Talia both started work at 6am and Filipe also studied at night and balanced health issues. For everyone to get the most sleep, Talia and their one year old son normally slept in the "spare" room. However, with Filipe's father using the spare room, Talia and the toddler moved into the bedroom that the older two children shared. Everyone in the family worked towards getting enough sleep, but with such early morning work, late night study, health issues, a toddler whose sleep is still inconsistent, and more crowded bedrooms than usual, it was tricky. Similarly, in Teresa and Erik's home, sleep spaces had been reconfigured to indefinitely accommodate Teresa's mum and sister from Samoa. Teresa and Erik had five children, the youngest of which was still in the bedroom with them. The older four normally shared the remaining two bedrooms. To provide a room for Teresa's mum, the older four children, and Teresa's teen sister, all shared one bedroom. This had pushed bedtime out a bit for the five kids, as it took them longer — "one to 2 hours" - to settle down in one room. Furthermore, their 15 year old used to take a nap after school. Now, with five sharing a room, that did not seem to be possible. Interestingly, Teresa felt that having another adult in the house made her more aware of her bad habit of being online too late at night, and she was now getting *more* sleep.

For the Pacific families in this study, being a part of "families in motion" included maintaining close connections and availability to those in other countries; a readiness to be called upon that transcended time zones. This could also impact upon sleep. Tokoni said that he keeps his phone on all night, just in case anyone should need anything and in consideration of the different time zones where his extended family are. He felt this was part of being Pacific: "For many Palagis… they don't want anybody to interfere with their sleep. They can turn off their phone. But I think for Pacific, I think it's hard, to turn off your phone… If someone rings, I have to get it." Nanise and Tomas described getting phone calls from Fiji when in bed. Tomas would even explicitly explain to the caller that he is in bed because "we have adapted to this type of life… you're on the other side of the culture." Nanise added, laughing, "You tell them that you're sleeping and they keep on talking." This availability to others was expected, to a degree, from children in the household too. Nanise explained that her mum often called to talk to the grandkids when they were already in bed. Nanise noted that her mum is, after all, the only one left back in Fiji and she responded to her mother's late night calls, when she could, by waking the kids to talk to their grandmother: "sometimes, we just have to make it happen".

Even for families without international movement, movement between households seemed common. Nicole and Daniel, and four children in their "blended" family, all had to get up by 6 am and they adhered to strict bedtimes typically, but variation related to movement was inevitable. Their oldest child had recently moved out but often came to stay. The youngest was always at home with them, but the middle two children came and went staying with their other parent or auntie or grandmother regularly. Sleep played out differently for the two kids in the different households and this was not always ideal: "weekends are pretty messy for them as far as their sleep goes." In contrast to their strict bedtime when with him, Daniel would sometimes get text messages from the two kids much later at night – proof that they were still awake at their relative's home. But on the other hand, Daniel had fond memories of late nights in his own childhood. He smiled broadly recalling that weekdays were routine but on weekends, "there was always someone having a party at one of the uncles' houses… and wherever that was, you were [there] too. The whole family would be there." He recalled all the cousins staying up late, listening to the singing, and then looking for any dropped coins to go and buy candy in the morning.

In another family, Tama reminisced about how her childhood, as the daughter of a pastor and one of six siblings, passed in a hive of activity and shared sleeping spaces. She lived with her parents into her thirties, through marriage and the birth of her two children. At the time of our interview, just she and her husband and two children lived in their home and Tama explained she found this less crowded arrangement "soooooo different… It's so hard, it is very very hard. I feel really lost, I love heaps of people." Tama routinely had cousins, nieces and nephews come to stay. On the night of our interview, she had her nephew staying over, as well as a child that I realized had been present – albeit asleep on the couch - at a previous interview at another family home! Tama described times when extended family all slept in the lounge: "it makes me happy when we all sleep together and giggle and tell jokes. That part of sleeping, before we sleep, that's the fun part of my life." Upon the passing of her auntie, Tama described losing sleep and altering her family's sleep space in order to house 20 visiting relatives. Far from having negative connotations, times like these brought back the happy, shared sleeping spaces of her childhood. Even when it is just the four of them at home, Tama's family still illustrates a "family-in-motion" when it came to sleep. After dinner and prayers, "everyone goes, 'oh I'm sleeping with so and so! I'm sleeping with so and so!' choosing bedrooms or the lounge. Tama laughed warmly, "It depends what kind of mood we're in, it's not set routine. It's just what we do."

3.1.2. Responsiveness as physical closeness

As in Tama's family, it was common for family members to sleep together, particularly where children were involved. Participants described this physical closeness as a way of strengthening family bonds, of nurturing children, and also of providing a sense of safety and protection. Masina described this throughout different phases of her own life, beginning with a time in her youth when relatives from the Islands moved in and their household grew to 14 people. Eating together was valued and prioritized and dinner was typically quite late. Not wanting to sleep without her mum and dad, Masina then waited for them to come to bed which meant Masina usually went to sleep "really, really late". Later, as a teenager, Masina travelled back to the Islands where sleep was in a collective space. Masina wistfully shared treasured memories of sleeping in the Islands: falling asleep next to her grandmother who chatted away with family before everyone drifted off to sleep together in the earliest hours of morning. Now, a busy mum of five, Masina struggled to find the words to explain the sentiment of family members sleeping together, so she simply positioned her arms as if cradling and rocking a baby. "To me, it just shows that they love each other."

In another home, Hika, a mum and grandmother, prioritized responsiveness through proximity to children through the night. Hika's household included her four year old granddaughter who woke in the night, distressed and "looking for someone" if she fell asleep alone. And so, Hika explained, her granddaughter typically slept with her for "comfort" and a "cuddle." Hika's granddaughter would sometimes even "sleep on my husband tummy... then she's comfortable there and she sleeps through right in the morning." Similarly, Rewa had always slept with her babies (and grandbabies when they visited) and explained this closeness in sleep as "emotional safety." Rewa had a hard time explaining this practice to her non-Pacific in-laws: "They were always concerned about the pros and cons of sleeping with your children. There's always bad publicity… For me, it's like an emotional safety, and knowing that it's protecting my child. Even more so, creating that natural nurturing bond that we have with each other."

But Hika and Rewa, and several other families, knew that sometimes sleeping together served another purpose too: that of keeping your children warm in New Zealand's chilly South Island climate. In Hika's words, some families sleep all together in the living area because "that's the only space that's warm in the house." Rewa recalled sleeping with her mum as a child in New Zealand, joking that her mum's bed was "kind of our, I suppose, island heater… it was always warm." Amipa and Valiami told us how their whole family bedded down in the living area (where we sat during the interview) for two reasons: "We have three bedrooms, but they didn't want to sleep by themselves, they need to sleep with us," and also, "because it is warm." Often, the two older children came home from school, napped, then stayed up later until the whole family bedded down in the living area together: near each other and the main heat source.

3.1.3. Responsiveness to faith and faith community

Several participants described sleep for their children, or for themselves in their own past, as being impacted by a responsiveness to their faith and church community. This may have been especially true for several participants who lived with relatives who were pastors during their youth. Fetu recalled how his room was "the sitting room" and his parents were pastors who always had people coming around in the "really late hours of the night." Fetu would need to wait for them to leave before setting up his bed. Another participant, Filipe also lived with a pastor in his youth, his uncle, who accordingly had "visitors coming in and out" through the night. Filipe explained, "it's disrespectful for you to then just go to bed." So when coming home at night, "if I know that they are there, I don't want to show my face in the front so I go around the back and sneak in the room and sleep."

In their adult lives now, the participants of the study still described the impact of religion or church upon their own sleep and that of their children. Tama explained how going to sleep when a special church event runs into the night is "frowned upon." "When it's full on church stuff… we don't sleep, yeah. We do all-nighters, you know, if it's cooking and it's family functions, it's all-nighters. No sleep. You just do those power naps. It's kind of rude if you went to sleep and everyone was up." Because this was expected of the adults, the children would often stay at the event too but could "pass out" whenever they needed to. A few participants painted a picture of an event where some children might be playing and others might be sleeping in various corners amidst the busy-ness. Terry recalled many late nights like this in his childhood as: "just keep going until you fell over… Could still be at church at 11 or midnight and still going." Now, with their children, Terry and

Jennifer occasionally went to a Pacific Island church event that went late. However, they explained with a laugh that their sleep is, in general, not affected by church because they "go to a Palagi church." Siale also attended a non-Pacific church and offered a similar comparison: "But our church is good, 11–12 and go home… It's not like Tongan – too long."

But for many families we spoke with, responsiveness to faith and the faith community included consistent commitments, like waking children early to get to Sunday school and services, or having a late night or early morning weekly choir practice. Hika, a grandmother, noted that between church and other Pacific community events something would go late every week; the family's sleep patterns changed to accommodate this, with her mokopuna [grandchild] often falling asleep in the car on the way home and carried straight into bed.

Two families also described being responsive to faith-based education opportunities and the impact this had upon their children's sleep. Sela and Tokoni's teenage sons had bible study at 6:30 am. "They have to wake up about quarter to six and get ready, go to it and go straight to school. By the time they come back, they are really tired. They do it five days a week." Another participant, Erik, remembered this before-school bible study in his own adolescence: he would take his mum to work about 4am and then head to 6am bible study before school. For parents Tama and Sefa, it was their own bible college commitments that led to some reduced sleep for the whole family. For six months, four nights a week, they went to bible college after work and were home around 9:00pm: "then we have dinner… so it was after, probably 10:30, eh, at night, and everyone is tired and just go crash." For Tama, it was a matter of balancing priorities; she knew that bible college was consuming time and energy and costing sleep, but it was a tradeoff: "your body is weak but your spirit is strong." For her two young daughters, Tama's concern was not necessarily the late nights, but the lack of opportunity for her kids to nap during the day: "Like straight after school they come to work, and then after work we go out to bible college, and after that we come back have dinner… There's no napping." The family relied upon a weekend sleep in or two to feel rested.

And yet in Tama's family, as well as others, faith also seemed to offer an avenue to good sleep. Tama described her family's nightly devotions before bed: "it's therapeutic, it just relaxes us and know that we're safe before we go to bed… It's like a meditation." Several participants recalled Sundays being a day solely for church, rest and sleep during their youth in the Islands: "heaps of sleep. Everybody sleeps." Hika painted a beautiful picture of whole families snoozing beneath frangipani trees on Sunday afternoons. Evoking a similar image of a mat under an island tree, Sela spoke of missing her home island nation even more on Sundays.

3.2. Sleep and responsiveness to economic pressures

In addition to the responsiveness to family, culture and faith described above, the families in this project were also responding to harsh economic realities known to disproportionately affect Pacific families. With the same responsiveness, they met these economic pressures by taking on shift work, multiple jobs and/or overtime to "put food on the table" (and, as mentioned by some, to support extended family in the Islands.) Some of the migrants in our study held work visas that dramatically limited their job options in New Zealand, effectively pushing them toward shiftwork and low-wage options. The prevalence of shiftwork in Pacific families, including those in this study, may not seem to be a central consideration for children's sleep. However, we return to one of the central tenants of this article: that Pacific children's sleep is *family* sleep. Pacific children's health, including sleep, should be viewed in their family context which is, in turn, shaped by economic realities.

The definition of shiftwork varies; the National Sleep Foundation defines it as anything outside 9am to 5pm. Most families in our study had one shift worker in the family, several had two or more. In Hika's household, for example, her husband worked night shifts, her grandson worked late evening shifts, her daughter worked changing shifts, and Hika herself worked days. When it came to sleep she said, "I can't keep up with this family in one day!.. We are not all together so that I can monitor, I can say, 'Ok, everybody go to sleep now.'" Rather, at any given time of the day, someone in Hika's household was likely to be asleep with others awake.

Shift work has an obvious and significant influence on an individual's sleep patterns. Father of five, Tokoni, who worked rotating shifts in mental health support, explained "my sleeping pattern is all over the place… Sometimes I only get a couple of hours of sleep." After working on a rotating roster for some time, Tokoni found it increasingly impossible to sleep for more than two to three hours even when given the opportunity: it's as if his "sleeping habit is broken." Tokoni was routinely asked to work extra shifts and usually accepted because, as he said, "who's going to pay for the school fees? Who pays the rent, the power, the food, the petrol?" Between his dialysis, his shift work and taking on extra shifts, he regretfully described this lack of time with his children: "They're getting older and older, but shift work, just the affect it has on the kids, I see them less time." His wife, Sela, worked the night shift as a caregiver in a nursing home. She slept for a few hours while the kids were at school but the evenings presented a particular challenge for Sela when Tokoni was working extra shifts. She needed a few more hours of sleep but the kids were noisy and needed looking after. She ended up bringing the two younger children to bed with her as a way of both ensuring they went to sleep but also, to create quiet in the house so she could get a few more hours of sleep before her shift.

Another shift worker, Terry, remembered his own father having worked night shifts as well. Between the night shifts, church and Pacific community events, Terry "didn't really see him sleep much." Now, working night shifts himself, his wife Jennifer said the negative impact of shift work upon Terry's sleep was most obvious when he got a break from it: "I notice a huge difference… of the way he sleeps and his demeanor… his sleeping is better once he's had that time off." During his normal work rotation of 8 days on, 4 days off, both Terry and Jennifer noted that Terry spends two of his four days off feeling groggy and snoozing on the couch. They have a saying for those days: "No driving and no parenting." Another shift worker, Anitelu, also spoke about the effect that shift work has on parenting and on children's sleep. His wife, who starts work at 6am, goes to bed early in the evening. A couple of hours later, Anitelu leaves for his night shift. When he calls home to check in, he often hears background noise: "Somebody answer phone, 'What's this, what's this noise in the background?' 'Oh we're studying.' 'What kind of studying is that?'… So it does affect their sleep …" Furthermore, once Siola'a leaves for her 6am start, but before Anitelu is home from his night shift, the older children need to be up early, ready to prepare the younger children for school. Having shift-working parents impacted the routines and the sleep of the children.

In addition to working night shifts, irregular shifts and extra shifts in order to make ends meet, several parents in our study recounted how owning only one car, sometimes shared across an extended family, meant that the impact of one person's shift work affected the sleep of many others in the family. For example, when Nalani first arrived in New Zealand and got a job working night shift at a factory, she used to have to arrive 1.5 h early because that was when her uncle, who had a car, could drop her off. Years later,

Nalani and her husband both had day jobs, but with early starts. It was then her children who had to arrive at school early in order to accommodate their parents' early shifts. For years, her five children woke up at least an hour earlier than their school schedule would have required in order to accommodate their parent's early start with the one shared car. “They found it difficult, they only just managed it… Going to school, they were so tired.” Recently, her family moved within walking distance of the children's school. No longer having to get a ride to school before their parents' early shifts, the children were getting an extra hour of sleep in the mornings. Two of Nalani's teenage sons were present at the interview and described feeling far more refreshed at school with at least an extra hour's sleep. In another example of how juggling one car with different shift work impacted family sleep schedules, Siale explained how she had to stay up later than she preferred in order to pick her husband up from work at 10pm. She then woke at 6am to get to her own job by 7am. Like Nalani's sons, Siale's son had to accommodate her early shift. He came to work with her from 7am before heading to school at 9am.

4. Discussion: balancing sleep, values and pressures

Family is an important and primary determinant of sleep; sleep typically occurs within a family context [20]. Yet family context has received comparably little attention in sleep research and is still often overlooked [12]. Family sleep is about more than just one family member's sleep pattern affecting another, though it certainly often does. Sleep is *negotiated* within a broader family system, which, in turn, exists within larger socio-cultural contexts [20]. This negotiation of sleep within a family context may be particularly true for Pacific families who live and embody cultural values of family and community collectives above self. For the Pacific families in this study, sleep was shaped by their responsiveness – to family, community and culture. For some children, this meant staying up to have a 10pm dinner with Mom after a late shift or waiting for Mom and Dad to finish bible study class. For some children, it meant sleeping in different places, like on the floor at a cultural or church event, or spending the night with Auntie, or giving up their bedroom when extended family moved in. As we witnessed twice, it meant children falling asleep on the couch while Mom and Dad participated in our research after a long day of work.

In the course of our interviewing, we witnessed Pacific families as families-in-motion, moving across oceans, across towns, across rooms in their homes; travelling, adapting, changing and accommodating. Pacific researchers have identified movement and motion to be at the core of Pacific identity and way of life [30]. The concepts of malaga [migration/movement away and back again] and vā [connectedness], for example, are central components of a Samoan worldview [21]. Lilomaiava-Doktor speaks of the “intensive mobility of Pacific Islanders” [21]: 22) as “flow” - back and forth, forming links, pathways and networks. Speaking of Samoans in particular, she argues that their prolific movement is actually about connectedness and the strengthening of relationships that transcend boundaries. Painting a picture of the Pacific as a “sea of islands” filled with crisscrossing peoples (extending to Australia, New Zealand and beyond), Hau'ofa suggested that for Pacific Islanders, movement is “in their blood” [15]: 156). New Zealand census data shows that Pacific families are more transient than other New Zealanders [26]. The 17 Pacific families in our study were largely embodied components of these moving, connected and transcendent networks. Be it due to movement around the world or just within one household, sleep spaces for children and families were fluid and highly responsive to ever-changing, interconnected family needs.

Being a part of mobile families meant responding to family members even when not together: answering calls and texts from different time zones and, while able to avoid it most of the time, occasionally waking the kids to say hello to grandma calling from another country. When physically together in the same locale, this responsiveness often meant family members sleeping together in close proximity: sometimes out of necessity – to keep warm or to accommodate everyone – but often out of choice, a desire to be close, to create and strengthen bonds, or as some of our participants put it: to show love, protection and “emotional safety”. An anthropological view of sleep around the world reminds us that globally solitary sleep is the exception rather than the rule; co-sleeping and co-rooming is most extensive [47]. It is primarily in Western, colonial and post-colonial contexts where sleeping alone is considered normal, or even optimal [10]. With much of what we know about sleep being dominated by a narrow and particular Western paradigm, it is too easy to overlook cultural difference in the shadow of Western cultural norms [2]. In other words, for those coming from a Western sleep paradigm, the rarity and oddity of solitary sleeping (as well as stationary sleeping – happening in a particular place) is easy to forget [10].

Far from just biological, sleep is a deeply symbolic action, filled with meaning that it “both expresses and realizes some of the deepest moral ideals of a cultural community” (Shweder in Ref. [10]:11). In many contexts worldwide, co-sleeping informs and is informed by strong values of interconnectedness. Understanding this means moving beyond any Cartesian, Western conception of the body as finite and bounded to one that is relational, connected and permeable [41]. In one Pacific Island context Alexyoff [2], found that Cook Island mothers felt sleeping with their babies was beneficial culturally, psychologically and developmentally, as well as a way of ensuring protection. The vast majority of our interviewees echoed these sentiments, with Rewa recalling fondly how she slept with her mum until she was 13 years old and still slept with her own children now and her mokos [grandchildren] when they visited. Tama, recalled times when family would gather, for example around the death of a loved one, and sleep all together on the lounge floor to help “fill the void.” Sleeping together with extended family was always one of life's sustaining moments. In these homes, sleep times and sleep spaces were often negotiated to facilitate sleeping together and the immense benefits that it brought.

Responsiveness to faith and church communities had an impact upon sleep for most Pacific families in this study, albeit to varying degrees. Churches have taken on and continue to hold a central role in the social lives and identities of New Zealand's Pacific Island communities [23] and is where many Pacific peoples practice culture outside of their homes. In additional to being places of faith and worship, Pacific churches often act as meeting places and community organizing forces providing activities, health and education services and more, [23,4]. Responsiveness to faith and church communities is a deeply rooted value and one that can, at times, lead to less sleep. For some families in this study, this occurred just from just from ‘time to time’, like for a funeral or special event where food and other preparations happened around the clock. For others, it was more regular like weekly church services, choir practice or more intensive faith education endeavors. Over 70% of Pacific peoples in New Zealand describe themselves as Christian and only 16% report having no religion at all [23,31]. Spirituality is a central pou, or main post, of Pacific health and wellbeing in the Fonofale Model and one that must be balanced with sleep.

Sleep for Pacific children cannot be extracted from sleep for Pacific families – families that embody and enact a responsiveness to culture, community and faith. Some of the parents in this research spoke about innovative ways of balancing the benefits of

familial and cultural values with the desire to prioritize their children's sleep. For one family this meant the kids simply did not have to come to as many community gatherings because, once there, it was hard to leave early. Three families mentioned a system of one parent staying at a function while the other took the kids home to bed. For these Pacific families, their children's sleep was responsive to different, arising situations and was negotiated while trying to best meet everyone's needs and overall wellbeing. Responsiveness can mean that – at times - sleep environments for all members of the family may be changeable, sleep times may be irregular, and sleep duration may be hindered. When viewed solely through a decontextualized and narrow, deficit-based lens of what constitutes "good" sleep, such as the growing promotion of "sleep hygiene", the responsiveness written about in this article could easily be framed and labelled as having a "bad" impact upon sleep. Within the dominant rhetoric of "healthy sleep", the sleep practices and realities of the Pacific families in this study become negatively framed as "disruptive" or "detrimental".

However, when we recognize family, culture, community and spirituality as fundamental aspects of well-being, this simplified and negative framing of sleep practices is inadequate and even harmful. Here we have aimed to highlight how sleep "fits in" to life for these Pacific families as they maintain the values that sustain them and the priorities that feed their well-being in many ways – physically, culturally, socially, spiritually and more. There are pursuits that are valued and rewarding, for which people willingly curtail sleep [47]. Our interviewees altered or limited sleep in order to uphold and maintain core values that strengthened family bonds, maintained social integration, fostered spiritual satisfaction, celebrated cultural vibrancy and more. People do not just lose sleep - they stay awake because they want to, because they are getting something out of it, reaping rewards, feeding their fulfillment and wellness in other ways. Masina knew this as a young adolescent, lying awake listening to her grandmother chatting away with family members into the wee hours of the night and thinking, "nothing compares to this."

But people also limit sleep because they need to, because sometimes, they have no choice. These Pacific families were also responding to economic demands and pressures. Some were limited to employment parameters imposed by immigration visas, many took on shift work, many worked extra shifts. Juggling everyone's commitments and such variable schedules appeared to be exhausting and demanding at times. When one person in the household worked shift work, others, including children, were impacted. The impact of shiftwork upon the whole family is magnified when both parents are in shift work positions and/or the family shares a single car while negotiating all these different schedules. For Lotu's children, every night was a bit different for her children's bedtime and routine, depending on which parent is home and which is working a late shift each night. Tama, who finished work at 3 or 4am, would come home to find her two girls in her bed with their dad on those nights. Anitelu's older children woke early to get the younger ones ready for school when dad was not home from night shift and mum has left early for early morning work. Shiftwork had a profound impact upon a household's timeline and atmosphere and thus upon children's sleep environments, even though the children were not the ones doing night shifts. That is unless they were adolescents, in which case they may be doing shiftwork too. This was the case for Hika's teenage grandson who had a job that could fit around school hours. Working in event catering, he worked evenings and weekends finishing at midnight or 1 am. Upholding and prioritizing a responsiveness to family and community, while also being responsive to economic pressures was a combination that sometimes resulted in a depleted sleep budget for some or all of the family.

5. Conclusion

There is no existing qualitative research addressing sleep in Pacific families in New Zealand; therefore these 17 Pacific families offer a rare and important window into Pacific children's sleep. The families in this research project reinforced what we already know to be true: that Pacific families strongly value family, community, faith and culture. We also know that Pacific families in New Zealand are disproportionately affected by economic hardships. Both Pacific values and harsh economic realities can affect sleep for the whole family, including children. These 17 Pacific families illustrated that Pacific children's sleep is enmeshed with core values of family, community, culture and faith. Living these core values nourishes individual and collective wellbeing in many ways. Homogenous or narrow understandings of health and healthy sleep, with an implicit bias towards biomedical perspectives and the dominant ethnic majority view, run the risk of overlooking, or even negatively framing, the *strengths* of Pacific families and communities. Health promotions from a dominant, singular perspective have often not resonated well with diverse families [33] and interventions that do not appreciate cultural implications on sleep – both positive and negative – are unlikely to make meaningful difference [1]. Healthy sleep initiatives that disregard Pacific responsiveness to family and culture, and do not acknowledge the economic pressures being met, would likely do more harm than good.

As we work to address health inequities, particularly if we move towards the creation of sleep interventions targeting Pacific children, informed and inclusive approaches to health must be adopted. Interventions aimed at improving sleep health must be family-focused, adaptable, culturally-informed and contextually relevant. Specifically, Pacific children must be recognized as interwoven and inseparable from their families and communities and the values they uphold as well as the pressures they face.

Credit author statement

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Appendix. Interview Guideline – Sleep and Wellbeing Among Pacific Families

Introductions

Ourselves (our families, our role).

The Project (big picture).

And the nature of the interview (casual, conversational, NO RIGHT ANSWERS, we're not sleep experts, if it's ok to record it. Info Sheet.)

Getting the picture of sleep in their family and household

To begin with, would you mind telling me a little bit about your family? (Anything that comes to mind!)

- (prompts if needed: name, family members, who typically lives here, anyone's occupations, kids, hobbies …)

Could you tell me what sleep looks like in your family?

- (prompts if needed: is there a pattern most nights or is it always different? Who usually sleeps where? What time do family members usually go to sleep? Do the kids sleep "well?" Does anyone sleep during the day?)

What constitutes "good" sleep in your opinion? How much sleep is enough?

Do you think everyone in the family gets "good" sleep? Gets enough sleep? Why or why not?

Are there any challenges when it comes to everyone in the house getting enough sleep and "good" sleep?

What kinds of things impact upon (or affect) your family's sleep?

Does your family have any evening or nighttime commitments or events or anything that affects sleeping?

Does sleep usually look the same in your family each day/night, or is there a lot of differences?

How does your family usually fall asleep? (esp young ones – what settles them to sleep – ie, breastfeeding, reading, TV, etc).

Once family members are asleep, do they usually stay asleep for the night? (esp kids)

What's the sleep environment like – for example, how loud or quiet is it, how light or dark, warm or cold, etc.

Does anyone in the family snore? Does this affect that person or others in the family?

Do you have any pets? Where do they sleep? (Any impact on sleep?)

Sleep across generations and geographies

A different kind of question, asking you to think back – what was sleep like for YOU as a child?

Do you know what sleep was like for your parents or grandparents?

Do you know how sleep is the same or different in [country]? (If they grew up elsewhere themselves, or through visiting, or through having family visit here, or through oral family histories/ knowledge).

Do you think sleep habits differ for Pacific Island families [country] than for other New Zealanders? How so?

(If you talk to anyone else about this, older family members, family living back in [country], I'd love to know what they think about sleep!)

Impact of sleep on health and wellbeing of Pacific children and young people

The Fonofale Model: How does sleep affect these aspects of life in your family?

(Where possible and appropriate: Let them view the model and speak to it, any aspect of it, if they can on their own. Possible prompts: How does sleep affect you physically? And how does your physical health affect sleep?

How does sleep affect you spiritually, and how does spirituality affect your sleep? Etc.)

How does sleep impact you and your family? (ie, if don't sleep well or don't get enough, what happens?)

Does sleep affect the relationships in the house?

Does sleep affect parenting?

Does poor sleep affect your children's behaviour? (Ie, sleepiness?, acting out? Hyper?)

Any other aspects of life?

Do you have a sense of how sleep impacts health? (In general, and specifically for family members).

Sleep "Guidelines"/"Modules" and barriers to them (RQ4)

Sometimes you hear different advice about kids and sleep. Are the following important/relevant to you and your family OR NOT?

- Having regular bedtimes – does this seem important to you? Why or why not? Does it work for you? Why or why not?
- Having the same schedule all week/everyday …
- Limiting screen time before bed …
- Having a quiet place to sleep …
- Teaching children to fall asleep with not much needed from you …

Effective sleep interventions for Pacific families

- If you wanted to find advice about sleeping – who would you ask? (GP? Midwife? Family? Friends? Internet?)
- Can you give me a piece of advice, good or bad, that you've been given about sleep? About babies/children and sleep?
- Where do you think you got your ideas about sleep from (ie, TV? Partner? Friends? Media? Parents? Church?)
- If sleep experts wanted to give out some information or advice about sleep and getting good sleep, what do you think needs to happen to make sure the Pacific families are included, and get all the information or help that they need?
  - o Who should spread the info around? How?
  - o How would you want to receive this professional advice and information about sleep?
- Do you have any advice that you would give to other families about sleep?
  - o If you felt that you had a really important message about health that you wanted to spread around your community, how would you start?

Demographic questions

"These last few questions are more like what you might get asked on a form or for the census. Remember all your responses are confidential and you don't have to answer any question if you don't want to."

Ethnicity identification

Is there an ethnic group or groups that you readily identify with?

Housing

1. What type of dwelling do you live in? (House, flat, hotel, etc)
2. Do you own your own home or are you renting? (Or living with family/friends?)
3. How many people currently live in your home (including respondent)?..... ("Usually" or "approximately","typical week", "know things change …").

4. How long have you lived in this dwelling? …… … …..(Years) …… … …..(Months) or DK
   a. How many times have you moved in the last year? Five years?
5. How many rooms are there in this house? How many rooms are used for sleeping?

AGE - Do you mind if I ask your Age**?**

Finally – is there anything else about sleep in your family or life that we haven't talked about yet?

Any questions for me?

Signing for voucher, thanking, and mentioning a follow-up brief interview, phone call or email (their choice).

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