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Abstract

The prevalence rate of tobacco smoking remains high for Australian Indigenous people despite declining rates in other Australian populations. Given many Indigenous Australians continue to experience a range of social and economic structural problems, stress could be a significant contributing factor to preventing smoking abstinence. The reasons why some Indigenous people have remained resilient to stressful adverse conditions, and not rely on smoking to cope as a consequence, may provide important insights and lessons for health promotion policy and practice. In-depth interviews were employed to collect oral histories from 31 Indigenous adults who live in metropolitan Adelaide. Participants were recruited according to smoking status (*non-smokers were compared to current smokers to gain a greater depth of understanding of how some participants have abstained from smoking*). Perceived levels of stress were associated with encouraging smoking behaviour. Many participants reported having different stresses compared to non-Indigenous Australians, with some participants reporting having additional stressors such as constantly experiencing racism. Resilience often occurred when participants reported drawing upon internal psychological assets such as being motivated to quit and where external social support was available. These findings are discussed in relation to a recently developed psycho-social interactive model of resilience, and how this resilience model can be improved regarding the historical and cultural context of Indigenous Australians' experience of smoking.

Introduction

Australian Indigenous Health and Smoking

Smoking is one of the most significant preventable health risk factors in Australia (Voss and Goss et al., 2007). Smoking is a primary cause of chronic disease among the Australian Indigenous population (Thomson and MacRae et al., 2011). Compared to the general Australian population Australian Indigenous people are far more likely to die (2 to 6 times more) from: respiratory, cardiovascular, kidney and endocrine diseases (Thomson and MacRae, et al., 2011).

Australia has a growing inequity in smoking prevalence rates, between its various population subgroups, with prevalence being particularly high in Indigenous populations (Marmot, 2005; Wang and Hoy, 2010). The smoking prevalence rate for Indigenous populations in Australia is approximately 45% (ABS, 2009) and is far greater than non-Indigenous Australians (19%), and more pronounced than in many other Indigenous populations in developed countries (ABS, 2009; Wood and France et al., 2008). A possible contributing factor to this disproportionately high prevalence rate is elevated levels of perceived stress (DiGiacomo and Davidson et al., 2007; Thomas and Briggs et al., 2008).

Australian Indigenous populations, stress and smoking

Stress can be related to the importance of an individual's perception of adverse environmental conditions, where the difficulties of the environment are perceived to exceed the individual's ability to manage those demands (Cardell, 2003; Lobe and Dunkel-Schetter, 1990). It has been suggested that a high level of perceived stress may emanate from social and economic

'pressures' that are often associated with disadvantaged groups, where smoking is used as a means of coping (Stead and MacAskill et al., 2001; Wood and France, et al., 2008). Graham's seminal work on disadvantaged groups suggests that smoking is not necessarily a 'lifestyle choice' but a response to the social, economic and political conditions of life (Graham and Inskip et al., 2006). High perceived levels of stress are often reported as an obstruction to smoking abstinence, both as a barrier to quitting and promoting the uptake of smoking (Stead and MacAskill, et al., 2001; Tsoortos and Ward et al., 2008). Thomas et al. reported similar findings with particular reference to Indigenous people, where the most socially disadvantaged were most likely to smoke, and that stress was a contributing factor (Passey and Gale et al., 2011; Thomas and Briggs, et al., 2008). Social and economic structural problems are often associated with many Indigenous populations (Altman, 2000; Healey, 2002), and therefore, stress may be particularly significant for Indigenous people. Roche and Ober highlight the importance of the relationship between adversity (racism, oppression, etc.) and smoking for Indigenous Australians with respect to a historical context (Roche and Ober, 1997). While there has been a warranted focus in the literature in the last decade on the 40-50% of Indigenous people who do smoke (RG Ivers, 2003; Passey and Gale, et al., 2011; Thomas and Briggs, et al., 2008), it is important to consider theories of resilience of how non-smoking Indigenous people are able to manage stressful events with respect to never smoking or successfully quitting. This 'assets model' public health approach, rather than a 'deficits model' approach (Morgan and Ziglio, 2007), may increase our understanding of how to overcome stress as a barrier to smoking abstinence, whereby perceived level of stress is identified as the problem and theories of resilience representing the solution.

Resilience to smoking

Resilience was originally conceptualised as an internal psychological or personality trait that allowed an individual to adapt and cope with adverse events (Bartley and Schoon et al., 2006; Block, 1961). However, more recent conceptualisations discuss resilience in terms of being built or eroded in a range of circumstances. For example, children who experience chronic adversity cope better or recover more successfully when they have a positive relationship with a competent adult (Masten and Best et al., 1990). Models of resilience have also been discussed in relation to the external social factors that may include supportive families, disadvantage, etc. (Braverman, 1999). Bond et al. have discussed resilience in their study on smoking and how social support is important for Australian Indigenous people (Bond and Brough et al., 2012). However, smoking has also been found to be a social norm for many Australian Indigenous people where family and peer relationships are enhanced. Within this context of social networks the extent to which social support can help to develop resilience in relation to smoking abstinence may be confounded. Johnstone and Thomas found that while family often encouraged smoking for participants, the health and wellbeing of the family was also important in encouraging quit attempts (Johnston and Thomas, 2008).

More recently, there is a cogent academic argument that proposes that both internal individual properties and external social factors be merged and depicted as part of a psycho-social interactive model of resilience (Ward and Muller et al., 2011; Ward and Tsourtos et al., 2010). Ward et al. have argued that this model could be applied to a general population, whereas earlier research centred on children becoming resilient. The Ward et al. model of resilience is based on an assets model of health that is focussed on health and wellbeing

(Fleischer and Weber et al., 2006; Sen, 1999), as opposed to a medical model that is fixed towards illness. Bond et al. have highlighted that when engaging Indigenous people with respect to smoking abstinence, wellness rather than illness needs to be emphasised (Bond and Brough, et al., 2012). This model of resilience, shown in Figure 1, places an emphasis on the interactions between an individual's internal psychological states, for example problem solving skills, autonomy, etc., and their external social environment (such as social support) whereby resources and assets can be utilised in response to unfavourable conditions. The model considers such an interaction over an individual's life course (from childhood, 12 years and younger, to adulthood, 19 years or older).

INSERT FIGURE 1 HERE

The authors of this recently developed psycho-social interactive model of resilience agree with earlier studies that resilience can alter over time and highlight how resilience can be built and degraded at various points in an individual's life. Bond refers to the importance of 'resilience building strategies' in her recent smoking cessation study with Australian Indigenous people (Bond and Brough, et al., 2012). Luther et al. also agree that resilience as an outcome is likely to be fluid, and they have cautioned against conceptualising resilience in terms of being an innate fixed characteristic (Luther and Brown, 2007). The psycho-social interactive model of resilience makes reference to smoking, stress, and Indigenous populations (Muller and Ward, et al., 2009): *Research affirms that some smokers perceive that tobacco assists them to cope with difficult situations, stress, An interactive model of resilience can allow us to examine such trends by analysing various groups with high rates of smoking such as ... Indigenous*

groups' (p.10). Resilience was conceptualised by Ward et al. as "*the interaction between the internal properties of the individual, and the set of external conditions, that allow individual adaptation, or resistance, to different forms of adversity at different points in the life-course*" (Ward and Tsourtos, et al., 2010). Smith et al. described adaptation to stress as adjusting to a new adverse situation, and resistance to stress as not showing a decrease in functioning (Smith and Dalen et al., 2008). However, this definition of resilience has been expanded to include the notion of recovering or "bouncing back" and to gain the ability to confront hardship whereby hope, meaning and optimism are ascertained (Deveson, 2003). This conceptualisation of resilience includes an individual's capacity to not only endure or tolerate stressful challenges, whereby daily functioning is maintained, but to grow through adversity (Deveson, 2003; McAllister, 2009).

Investigating stress and smoking for Indigenous populations in relation to this recently developed model of resilience is potentially important, especially from a public health perspective, given the disparity in health outcomes (Paul and Sanson-Fishe et al., 2010). Adopting a viewpoint that incorporates an interchange between an individual's internal psychological and external social domains may provide a different insight into why some Indigenous people remain resilient to stressful adverse events, where stress often leads to smoking being used as a coping mechanism. It has been argued that most of the earlier resilience models lack adequate complexity to be applied to real-life circumstances, and that they may have not considered the potential importance of incorporating theories embedded in both the psychological and sociological literatures as well as the potential interaction between internal psychological properties and external social factors over an individual's life course

(Muller and Ward, et al., 2009; Ward and Muller, et al., 2011; Ward and Tsourtos, et al., 2010). Taking into account an individual's life course may be relevant to Australian Indigenous peoples' resilience because Bond et al. have discussed how life changes (e.g. turning 40) can lead to self-reflection with respect to smoking abstinence (Bond and Brough, et al., 2012).

The research reported here aimed to examine the relationship between resilience and stress in maintaining smoking abstinence in Indigenous people in South Australia, It had the following objectives:

- To examine the effect, if any, stress has on tobacco use
- To identify any internal psychological or external social factors (for example, motivation and family support) in relation to resilience that may be drawn upon by non-smokers (never smoked and ex-smokers)
- To identify any differences in coping with stress and adversity between non- smokers and smokers (*to gain a greater depth of understanding of how some participants have abstained from smoking*)

Methods

A qualitative methodological approach was employed because it is suited to capturing the meanings, social norms, and perceptions that can influence preventable health-risk-related behaviours (Jordens and Little, 2004). Luther et al. make specific reference for the need to use qualitative research in relation to advancing our conceptualisation of resilience so that quantitative researchers know what to test (Luther and Brown, 2007). Given this study

examined the relevance of resilience according to the Ward et al. (2010, 2011) model a life history methodology was used where participants are asked to recall and reflect over their lifespan (Legard and Keegan et al., 2003). The Ward et al. psycho-social interactive model of resilience was used as the theoretical framework to guide the research but the analysis also allowed for an inductive approach whereby new emerging themes could be included.

Interview Schedule

In-depth semi-structured interviews were employed so that the investigators could ascertain a deep understanding of the participants' life experiences and are extensively used to gain oral histories (Liamputtong, 2009). Interview questions were based on the participants' smoking status, their social environment, and their life experiences, from childhood (less than 12 years of age), to mature adulthood (more than 29 years of age). The interview questions incorporated the relevant current literature (on resilience, stress, smoking.) and expert opinions from the Project Management Team (including some members who are Indigenous). The interview schedule included questions on stress, because the current literature deems stress as an important theoretical perspective. The main domains in the interview schedule were organised in relation to a life history, which is commensurate with Ward's model (Ward and Muller, et al., 2011; Ward and Tsourtos, et al., 2010); and included questions about resilience (both in relation to the individuals' internal psychological properties and external social environment), their smoking behaviour, and stress. Where the concept of stress was not mentioned at all by a few of the smoking and non-smoking participants the term 'stress' or 'stressful' was cued by the interviewer with regard to what types of situations made the participant stressed and how did they 'deal', 'manage' or 'cope' with these. Cueing or

prompting was used as a common interview practice because it can elicit further information rich detail that open questions may not ascertain, as well as help clarify questions (Hansen, 2006; Ritchie and Lewis et al., 2014). The interviewer was instructed, as part of their training prior to and during the collection of data, to give both smoking and non-smoking participants the opportunity to see if they raised this concept without being directly asked about it, thereby helping to minimise responses being influenced by the interviewer. The level of probing for non-smokers was similar to that of smokers. The participants' responses almost always seemed to be commensurate with the operational definition stated in the introduction.

Data Collection

Thirty-one Indigenous adults (19 -78 years of age), mostly female (71%), who lived in metropolitan Adelaide (South Australia) were recruited purposefully on the basis of their current smoking status (see Table 1 below). Smokers were defined as having continuously and regularly smoked or used tobacco products for at least the last 2 years. Ex-smokers were defined as not having a cigarette or tobacco product in the last 12 months, but had previously smoked regularly for at least 2 years. Never-smoked were defined as never-smoking or not having used a tobacco product regularly. Participants were recruited according to smoking status so that non-smokers could be compared to current smokers to gain a greater depth of understanding of how never-smoked and ex-smokers managed not to smoke. The recruitment of more female participants was not intended but this gender imbalance was consistent across all 3 smoking status groups. Participants were also asked about their housing tenure/ownership, employment status, and level of education to gain background information

about their external environment. Most participants were renting or leasing their homes, had nearly completed a secondary level of education, and half the participants were employed either part time or fulltime.

INSERT TABLE 1

Participants were recruited through strategic targeting of specific local client-focused community health centre and health service sites frequented by the participants, by using existing professional contacts, knowledge, and existing workforce email-loops of the Indigenous (Kurna) Research Officer (someone who has worked with local Indigenous communities for many years and had prior experience in undertaking interviews). None of the interviewees were from the same 'mob' as the interviewer but most were from the Kurna region. The interviewer had completed a secondary level of education, which is not dissimilar to many of the participants.

Flyers were situated at these locations with the purpose of recruiting adults (18 years or older) who identified as Indigenous Australians (Aboriginal and/or Torres Strait Islanders) and who identified as a current smoker or a non-smoker. A small number were recruited via snowball sampling. Participants were compensated for their out-of-pocket expenses with a shopping voucher (valued at \$30.00). Identified individuals were given an information kit. Only a few people declined the invitation to participate after being informed of the project details and their role (3 smokers; 2 ex-smokers; 3 never smoked).

Following informed consent, participants were interviewed by the Indigenous Research Officer (between 40-60 minutes) face-to-face at the participants' homes, place of work, or the community centre that they were recruited from. Interviews were conducted in English, which is the first language of the interviewer and for the vast majority of the participants. Twelve months of data collection was completed when data saturation was achieved, over the years 2008 to 2009. Saturation occurred when few new data were being generated after exploring concepts in relation to how it explained the participants' experience (Padgett, 2008).

Recognising the importance of cultural sensitivity, a Reference Group was organised and included male and female members who identified as Indigenous. This group assisted in guiding the research, including ethical issues such as the appropriateness of the interview questions. All interviews were audio-recorded and then transcribed. Transcription accuracy was ascertained by members from the Reference Group comparing samples of the transcriptions and their respective audio recordings as the data was being collected. Nearly all of the transcripts were recorded verbatim. This also provided the opportunity to monitor whether the interviews were being conducted consistently and in accordance to the Research Officer's interviewer training (which included mock interviews).

This recruitment process was considered culturally appropriate by the Indigenous Research Officer, and by Indigenous community leaders. Cultural appropriateness was determined by the Research Officer consulting with community elders, and seeking ethics approval from the Yunggoendi First Nations Centre for Higher Education and Research at Flinders University

as part of the ethics approval process. Ethics approval was also gained from the Flinders University Social and Behavioural Research Ethics Committee.

Data analyses

Data analysis was conducted in accordance with the psycho-social interactive model of resilience (Ward and Muller, et al., 2011; Ward and Tsourtos, et al., 2010), which was used as the analytical framework. The coding framework also allowed for new emerging themes to be identified, allowing for both an inductive and deductive approach. In other words this was both a theory-driven and data-driven approach (Fereday and Muir-Cochrane, 2008; Swanson and Elwood, 2005). The constant comparative method was used, which allowed similarities and differences to be explored within the data (Dye and Schatz et al., 2000). Analysis began after the first 2 interviews were completed as part of the thematic iterative process of discovering emerging themes and re-developing the interview schedule for the remaining interviews (Hansen, 2006). All data were analysed for emerging themes and patterns within and between the smoking status groups through the use of NVivo software (version 8).

There was consensus on the themes interpreted between 2 different analysts. The analysis was assisted by the input received by the multi-disciplinary project Reference Group (including some people who identify as being an Indigenous Australian), which met frequently to discuss

and debate emerging themes in relation to the respective members conceptual and theoretical understandings.

Findings

The following findings are mainly based on themes that are related to how perceived stress may have encouraged smoking behaviour, and how resilience to stress may have played an important role in smoking abstinence for ex-smoker and never smoked groups. Resilience is conceptualised in terms of the individual's internal psychological properties (e.g. problem solving, being determined) and factors related to the participants' social environment (e.g. support from friends, culture in a historical context) that often resulted in enabling strategies to cope with stress other than smoking.

Participants' background in relation to smoking

Regardless of the participants' smoking status the majority had parents who smoked, and many participants also reported having siblings and/or extended family, friends, and co-workers who smoked. That is all 3 groups of participants were equally exposed to smokers and the social influences to begin smoking. Most of the smokers and ex-smokers commenced smoking tobacco products early in their life, either as an adolescent or young adult. Many of the smokers and ex-smokers were influenced to take up smoking (in spite of the fact that some of them reported disliking tobacco products around the family home), during critical stages of their lives such as developing an interest in a boy/girlfriend who smoked or facing the adversity/stress of having their only remaining parent die.

Stress

Most of the participants' responses related stress to adverse and demanding situations that were difficult for them to cope with, where the demands were exceeding their ability to manage. For example, Tom (smoker) reported:

Interviewer: *'If you're in a stressful situation, do you feel that you'd tap into that?'*

Tom: *'I tap into it, definitely. Like if my kids are stressing me out, like they're real handfuls at the moment.' 'Well one's eighteen and ... the three boys are just, they're really pretty full on at the moment, ... I'm at a stage at the moment where I just don't know what to do with them; I've done all that positive stuff.'* Stress was often associated with negative emotions such as *'worrying'* or not being happy.

Stressors experienced

The following list includes examples of stressors experienced by participants, regardless of smoking status: arguments with partner, victim of acts of crime and aggression or threats of violence (presence of street gangs), raising children, alcohol abuse, smoking, gambling and financial problems; child abuse; and health concerns.

The majority of participants reported having different stresses compared with the non-Indigenous populations of Australia, with numerous participants believing they have additional stressors, including: systemic *'racism/stereotyping/stigma'* from media and government interventions; the ill-effects of the stolen generation [stolen generations refer to the Aboriginal and Torres Strait Islander children affected by the policy that allowed

governments to forcibly remove them from their families between 1909-1960s]; poor health status; and conflict with non-Indigenous communities. Betty (smoker) reported how racism, as an additional stressor, encouraged smoking: “*when I was younger I was aware of racism without a doubt... I knew that I was always nervous.. I thought was coping with stress but ... stress triggered off for me to smoke*”. While most participants reported added stressors a few participants believed Indigenous people did not necessarily experience greater levels of perceived stress. One participant suggested that Indigenous people were able to manage or cope with stress better than non-indigenous people. For example, Sonia (a never-smoked participant who didn’t know many smokers) reported that Indigenous families were more likely to offer a way of life that allowed them to manage or shield an individual against stressful circumstances:

‘ I think, it’s going to say they got more stress on Aboriginal families. But it’s funny, ... if you were a needy family, I felt more sorry for a white non-Aboriginal family than an Aboriginal family ...about how the closeness of an Aboriginal family... .’

Stress and smoking

For both male and female smokers and ex-smokers, experiencing stress was not always discussed as a reason for smoking uptake but there was a strong relationship throughout their lives between smoking maintenance and perceived levels of stress experienced. Christine (an ex-smoker, who started smoking at the age of 16 and quit as an adult) reported - ‘*Smoking is about how you cope with stress*’. The majority of smoker and ex-smoker participants reported that the presence of a stressful event in their lives caused their smoking to escalate. John (a smoker, who became a ward of the state during his childhood) stated – ‘*Yeah, so I smoke*

about 10 to 15 a day. Sometimes 10, it depends. What sort of day, a stressy day'. Perceived levels of stress featured prominently as a barrier to quitting, often causing relapses for smokers and ex-smokers. For example, Joanna (an ex-smoker who eventually quit at the age of 35) relapsed after having a significant marital problem:

Interviewer: *'Did you get really stressed and feel like a smoke? Was that a time that you felt like starting again?'*

Joanna (ex-smoker): *'It was, last year, I thought I was going to have a nervous breakdown'*

Kay (an ex-smoker, who 'married early') reported a similar story but it is interesting to note that she highlighted that it did not necessarily have to be a major event to cause a relapse:

'I had an argument with my partner, ... I just went back on smoking, just little incidents like that...'

Eugenia (*ex-smoker, who was abused as child and had parents who smoked*) reported relapsing when moving in with her father because she found that event stressful and specifically mentions how she was not motivated to quit at that time:

Eugenia: *'Just because it was stressful and yeah..... so I just started up the last four weeks, yeah, which was pretty sad,'*

Helen (a smoker who commenced smoking after being married at 20 years of age) highlights why smoking may be seen by some as the only beneficial way of reducing perceptions of high levels of stress –

Interviewer: *'...it started getting stressful, you just smoked more in the marriage?'*

Helen: *'Yes, see 'cause I didn't drink or I didn't go out anywhere'*

However, several participants also reported the influence of others on encouraging them to smoke. One never-smoked participant highlighted the significance of social norms: *“its normal behaviour at home, everyone smokes so we just smoke that’s part of being black and for other people it’s about all the stress”*. This quote also relates to how the shaping of one’s self-identity as a smoker can be formed (Ward and Muller, et al., 2011)

Resilience and Stress

Using Ward’s (2010, 2011) psycho-social interactive model of resilience as a theoretical lens to help guide the analysis both internal and external resilience factors were found in the data regarding smoking abstinence. There are examples derived from the data of how some of these factors may interplay as part of the process to becoming resilient.

Several ex-smokers reported that they were often encouraged to abstain from smoking as a result of experiencing particular transition points in their lives that were often health related (when they became pregnant, witnessing a family member dying of cancer, health scares, etc.), and found other methods/strategies of managing stress. For example, Eugenia (ex-smoker) reported giving up smoking with respect to being pregnant -

Interviewer: *‘So you made the decision to stop smoking when you were pregnant then?’*

Eugenia: *‘Yeah’*

Interviewer: *‘Was that hard?’*

Eugenia: *‘No, no. I think when you’re determined to do something, you just do it... “I found it easy to, cigarettes, but I was just ready, I wanted to do it.’*

Eugenia like several other ex-smokers drew upon certain internal resilience resources to help them quit smoking such as being determined, to be resolute, confident, in control, and self-reflect. Yvonne, as an ex-smoker, reported:

'I thought, tell my brain, you know, I don't want to smoke, I don't want to smoke, I want to give it upthat's what all went through my mind, you know, and I was so happy when I finally did.'

For some ex-smokers social support from family, friends, and community ties, as an external resilience factor, featured prominently in relation to being able to quit smoking (talking about problems with friends and/or family, seeing a school counsellor (unclear whether these social supports were about venting or problem solving)).

Methods/strategies of managing stress included health promoting behaviours such as: exercising, participating in sporting activities, and '*black fella things*' such as meditation and walks. Ex-smokers often chose a healthful strategy to manage stress to replace smoking as a coping mechanism. However, for some of ex-smokers replacing smoking as a method of coping with stress included taking on other health risk behaviours, such as drinking alcohol more or consuming minor tranquilizers.

The never-smoked participants reported a wide range of stress management strategies that included: watching movies, meditating, walking, bike riding, listening to music, and attending stress relieving programs. For those participants who had never-smoked the external resilience domains were often related to social support such as talking about stressful issues with friends

and/or family, seeking professional counselling. The never-smoked group overall also had a higher level of education, compared to smokers (some never-smoked participants completed a tertiary education). Some of the internal resilience domains were associated with removing the stressor (capacity to problem solve and make decisive decisions); while other participants were focused on ameliorating the perceived level of stress such as finding a distraction or distancing themselves. With particular reference to Indigenous culture and history Alison (as someone who had never smoked and was raised by her Grandmother and father) reported the following strategy of coping with stress in relation to not smoking:

..there's no reason to smoke you know like stress gets on top of everyone ... but then we've got to find other outlets ... whether it's we return to some old wayswe talk to him (son) about you know when you're feeling this you've just got to return to country, it is our home so you know we take him to the Coorong and revive his spirit and I think we've got to do more of that stuff with our people.

Interplay between internal properties and external social support

Alison also reported how she had 'willpower' not to smoke. Alison drew on this internal property to discuss her problems with a 'mentor' and family members to alleviate stress in her life during both childhood and as an adult. Resilience is often reported to occur when external social factors such as family or peer support are present. The following is an example of a discussion she had with her 'mentor', arranged through a state government funded 'course in relation to alleviating stress and not smoking':

'They talked a bit about stress and umm you know how you respond to things and that's where I started sort of thinking, okay it's about my response not about what

they're doing.' I'll sit around all these forums and you know we're talking about Indigenous smoking I think like why isn't it that I didn't smoke ...'

This is an example of how, in accordance to the psychosocial interactive model of resilience, an internal property may interact with the external social environment: Alison being determined not to smoke and cope with stress motivated her to attend this forum where external support was offered. The mentoring (professional support) encouraged Alison to self-reflect (internal property) in relation to managing perceived levels of stress, which may have prevented her level of motivation (internal property) to quit from declining. Kaye (ex-smoker) offers a somewhat similar example. Kaye identified as a person who is “*in control*” and “*independent, to an extent*” (internal property) in relation to her decision to quit smoking in the face of adversity and stressful situations. However, at the same time she acknowledged that in order to maintain a sense of control Kaye would seek help from certain individuals she could depend on for social support: “*if I need help or advice ... I know where to go*”.

Smokers tended to lack some of the internal and external resilience factors that the non-smokers reported. For example, there was often a lack of an internal locus of control or self-determination (James and Woodruff et al., 1965; Williams and Patrick et al., 2011). Julie reported the following when asked why she smoked: “*Oh I think probably stress, I mean I done the wrong thing getting married but it was too late then to do anything about it...*”. The availability of social support in relation to facing adversity was reported far less than for non-smokers.

Historical context in relation to culture

Some participants did make a direct reference to enduring resilience to stressors, such as racism, that has implications for the psycho-social interactive model of resilience with respect to cultural history. Perhaps the best example is summarised by statements made by Paul, (a non-smoker and member of the stolen generation). Paul provides a testament to the resilient nature of Indigenous people by referring to the experience of “*success*” within his own community despite the immense hardship, racism, etc., associated with the stolen generation:

‘Yeah, I think we’re a pretty resilient lot, as a race we’ve put up with umm, more in this country than anybody else, you know, all the boat people, from 1788 onwards [laughs]. I think we’re an amazingly resilient race.....’ ‘It was a shocker to come back in the bloody eighties and you see some of the bullshit that was happening then about racism.... We have some fantastic success stories that are happening every second of the day’.

This quote, as well as Alison’s first quote, suggests that perhaps Indigenous resilience cannot be understood outside of its historical and cultural context, and that models of resilience may need to consider an extended period of time beyond the individual’s life course.

Discussion

The main study objectives were to investigate the effect, if any, of stress on tobacco use and to identify internal and external resilience factors that may be drawn upon by non-smokers.

Perceived levels of stress were found to impact on smoking behaviour, predominately for the maintenance of smoking. Particular internal and external resilience factors were identified for non-smokers that included: being in control or determined, problem solving, access and

willingness to seek social support, etc. Resilience to stress in relation to smoking abstinence was often health related and associated with a higher level of education.

There are likely to be multiple reasons why Indigenous people take up and maintain smoking, such as belonging to a population that has a high smoking prevalence rate because this in itself encourages role modelling to children and social norms (Johnston and Thomas, 2008), or that smoking becomes linked with one's self-identity Bourdieu's conceptualisation of habitus, "as a system of dispositions to a certain practice" (p. 77) can also be related to the findings, both in terms of smoking and smoking abstinence (Bond and Brough, et al., 2012; Bourdieu, 1990; Katainen, 2010). However, the main findings in our study suggest that resilience to perceived levels of stress as a solution needs to be considered to understand how some Indigenous people remain non-smokers. The impact of normalising smoking and that sharing tobacco can be central to social activity may complicate the notion that social support is often required for Indigenous people to remain resilient to stress and not smoke (Ivers, 2011). This needs to be considered with regard to informing policy and practice.

Stress

The concept of stress was defined in the literature; where the perception of an individual's ability to manage the demands of an adverse situation is perceived to be insufficient. It appeared in the analysis that, for the most part, the participants interpreted this term in the same way. However, it is also important to include the negative emotions that are often reported in association with stress, as well as the context, in order to gain a greater depth of understanding of the meanings that participants associate with this term.

Stress and smoking

Findings in our study suggest that for Indigenous smokers and ex-smokers, smoking was identified to be the only available option for the reduction of stress. One of the particularly interesting findings was that it could be the ‘*little incidents*’ that induced stress related smoking relapses, such as arguments with partners. Health promotion interventions need to take this into consideration when also addressing the more traumatic stress inducing events, such as a significant marital problem.

Ex-smokers and smokers reported that levels of stress experienced presented more of a barrier to attempts to quit or that it encouraged an escalation of smoking, more so than promoting the uptake of smoking when they were young. This then raises the question of how much is resilience to perceived stress important for the uptake of smoking. However, Alison who never smoked did reflect on stress and smoking being discussed at the workshop she attended and how it was that she did not take up smoking.

Perceived levels of stress may be a particularly important contributing factor to high smoking prevalence rates for Indigenous populations because of the added burden of factors such as racism. This is not to say that many of the stressors reported in this study have not been found for non-Indigenous populations. However, there is evidence which suggests that racism and social inequity may have adversely affected aspects of some individual’s lives within Australian Indigenous communities. This includes an increased likelihood of unfavourable

health consequences and perceived increased levels of stress (Mitchell, 2009; Paradies, 2008), all of which needs to be understood within a social context (Bond and Brough, et al., 2012).

Resilience

There were a variety of methods for managing stress adopted by non-smokers. Some of these were directly related to Indigenous culture and history, such as “*return to country*”. It may be important to encourage such resilient strategies to cope with stress with respect to not smoking because they are known to be culturally appropriate and familiar. Some of the internal resilient properties that were often reported by non-smokers included: having willpower, being confident and resolute; as well as having external social support available from peers, family, and professional services. This is in contrast to the smoker group where some of the resilient resources and assets discussed, such as self-determination or social support, were commonly not found.

Interplay between internal properties and the external social environment

For Indigenous non-smokers’ the ability to abstain from smoking may be associated with their ability to draw upon internal assets such as ‘*willpower*’ not to smoke and to improve their health status. However, willpower is often not enough for smoking abstinence. About half the Australian population contemplates quitting but the vast majority is unable to quit (Baillie and Mattick et al., 1995; Richmond and Kehoe et al., 1996). Social support may be crucial to compensate for high levels of stress experienced, especially because a sustained level of perceived stress is known to erode an individual’s self-control, determination, and willpower

including their determination not to smoke (Oaten and Cheng, 2005). This is not to say that such interactions were always found.

Our findings that some ex-smokers and those who had never-smoked sought support regarding stress from professional counsellors and mentors highlights the potential for practitioners to promote smoking abstinence, whereby social support can be provided and internal properties such as problem solving skills can be enhanced to assist individuals cope with stressful circumstances. It is also important to recognise the potential for social support, in relation to ameliorating stress and decreasing smoking rates, within Indigenous culture because of the “*closeness of an Indigenous family*” (Sonia).

Resilience model and historical context in relation to culture

The analysis, in accordance to the psychosocial interactive model of resilience, was somewhat ahistorical in that it was restricted to the life course of an individual and did not consider the significant longer term social and cultural impact of colonisation in relation to stress and resilience. An emphasis on examining the historical context encompassing Australian Indigenous health has been deemed important in previous studies (Anderson and Crengle et al., 2006; Dundi, 1996; Johnston and Thomas, 2008; Mitchell, 2009). Brady specifically highlights the importance of historical and cultural roots of tobacco use among Indigenous Australians (Brady, 2002). Research with other Indigenous populations, such as American Indians and Alaska natives, has concluded that models developed in relation to stress and coping need to have a less Eurocentric perspective on the individual and incorporate the impact of ‘historical trauma’, as well as ‘cultural strengths’ (Walters and Simoni et al., 2002).

Therefore, this needs to be explored in relation to the further development of the psycho-social interactive model of resilience as the conceptual framework for Australian Indigenous populations.

Highlighting the importance of the historical and cultural context for populations such as Indigenous Australians has implications for other recent resilience studies that have focused on smoking. For example, Ward's discussion on resilience strategies in relation to 'biographical reinvention' or 'reinforcement' may be extended by considering how a community and its history as a whole can shape the biography of its group members (Ward and Muller, et al., 2011).

Conclusions

Regardless of smoking status, most Indigenous participants perceived that they faced additional stress related adversities compared to non-Indigenous Australians. Yet the non-smokers were able to never take up smoking beyond taking a few puffs or were able to quit. Using a recently developed resilience model as a framework to help understand how some Indigenous people are able not to smoke in the face of adversity is useful. This is especially relevant for quitting because stress was strongly linked to smoking maintenance. The authors of this study endorse health promotion through counselling and mentoring practices by providing social support that helps alleviate perceived levels of stress, for Indigenous communities. Also, in accordance with the Ward's (2010, 2011) psycho-social interactive model of resilience we propose that internal properties such as self-determination and self-

confidence be developed and encouraged simultaneously with respect to smoking abstinence. However, this model of resilience lacks the capacity to consider the historical context regarding cultural issues, which is likely to be important for Indigenous populations (Waldram and Herring et al., 2006). It is recommended that the psycho-social interactive model of resilience should be reshaped to examine factors beyond the life course of an individual, and to include an historical perspective in relation to a better understanding of the longer term cultural and social background of populations.

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