Smoke-free New Zealand Prisons

Changes in health perceptions of male prisoners following a smoking cessation programme: An evaluative study

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ABSTRACT

Aim: To explore the changes in health perceptions of men in prison following a smoking cessation programme.

Design: In depth semi-structured interviews and a quality of life questionnaire (SF-36) were carried out with 12 prisoners in November 2011. Thirty-eight prisoners also completed two separate lung age tests between May and October 2011. Prisoners involved included both Maori and non-Maori.

Setting: One prison for males in the lower North Island of New Zealand.

Method: Prisoners were interviewed individually by one researcher, with a topic guide of health in prison after stopping smoking. Data were analysed thematically. The SF-36 results were calculated for aggregated and specific physical and mental health scores. All SF-36 results were normalised. The lung age test compared two units of the prison before and after the smoking cessation was introduced. Orem’s model of self-care deficit underpins this research and is used to formulate care plans for prisoners needing smoking cessation assistance.

Results: Four main themes emerged from the interviews: the increase in exercise tolerance with improvements in general health; an ability to taste food again; an acknowledgement of stress; and the reasoning behind beginning smoking. Maori prisoners rated their health significantly higher than non-Maori in five of the eight parameters of the SF-36 questionnaire; they perceived themselves to have better physical functioning and general health, more vitality, but also more bodily pain and role limitations from emotional causes. Any limitations from physical causes were rated equally by both Maori and non-Maori. Non-Maori prisoners scored their social functioning and mental health as better than Maori prisoners. The mental health of these prisoners showed most (84%) did not enjoy the same mental health as men in the wider community. The lung age tests showed no meaningful differences between the two units, although 80% of the prisoners surveyed who completed all the tests, noted their lung ages had decreased and their physical health had improved. However, the lung ages of men older than 35 did not improve as quickly as men less than 35 years. Few prisoners had lung ages that were the same as their chronological age; most were noticeably higher.

Discussion: The lung age tests were designed to be a visual prompt for prisoners to consider the damage smoking had done already to their health. It opened a dialogue for discussion around the smoking cessation programme. The prisoners who completed both the lung age tests expressed interest in the final results and many were pleased at the improvements. Although the quality of life survey within the prison was small, most Maori prisoners felt their overall health was better than in the community, especially their physical health. The SF-36 showed no improvement in
the mental health of the Maori prisoners. Not all prisoners who were interviewed wanted to stop smoking; nevertheless they acknowledged the positive changes to their health. Only one man expressed a commitment to resume smoking on release. The ability to taste food again was appreciated by most, even when they stated they did not like prison food. The interviewed prisoners acknowledged smoking was used to combat the boredom of prison life and had become a habit they wanted to stop but did not know how to. All had started smoking at a young age to fit in with their peers.

Conclusion: While the smoking cessation was not voluntary, many prisoners have enjoyed the resulting improvement to their health. However, the literature indicates many return to smoking once released from prison. Assisting prisoners once they leave prison to remain smoke-free is a new challenge for health providers.
I wish to thank my supervisors Professor Bob Marshall and Professor Nick Nicol for their invaluable assistance in this study.

Thanks to my husband, Michael, for allowing me to use his precious gaming computer and then buying me my own laptop and to my daughter Fiona for teaching me basic computer skills and not laughing too much at the results-love and thanks to you two.

A special thank you goes to my nursing colleagues at the prison for tolerating the many rewrites, composition attempts and endless discussion on the topic.

Lastly and especially, thank you to the many prisoners at Wanganui Prison who willingly gave me of their time; allowed me into their lives and told me the stories that have made this study possible.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstract</td>
<td>ii</td>
</tr>
<tr>
<td>Acknowledgements</td>
<td>iii</td>
</tr>
<tr>
<td>Table of Contents</td>
<td>iv</td>
</tr>
<tr>
<td>List of Tables and Figures</td>
<td>vi</td>
</tr>
<tr>
<td>Chapter 1: Introduction</td>
<td></td>
</tr>
<tr>
<td>1.1 Introduction</td>
<td>1</td>
</tr>
<tr>
<td>1.2 Prison Structure</td>
<td>5</td>
</tr>
<tr>
<td>1.3 Research question</td>
<td>6</td>
</tr>
<tr>
<td>1.4 Purpose of research</td>
<td>6</td>
</tr>
<tr>
<td>1.5 Significance of research</td>
<td>7</td>
</tr>
<tr>
<td>1.6 Structure of the thesis</td>
<td>8</td>
</tr>
<tr>
<td>Chapter 2: Review of the literature</td>
<td></td>
</tr>
<tr>
<td>2.1 Introduction</td>
<td>9</td>
</tr>
<tr>
<td>2.2 Search Strategy</td>
<td>9</td>
</tr>
<tr>
<td>2.3 History of World-wide smoking vetoes in prisons</td>
<td>10</td>
</tr>
<tr>
<td>2.4 Prisoner opinions about smoking vetoes</td>
<td>11</td>
</tr>
<tr>
<td>2.5 Correction staff belief about vetoes</td>
<td>12</td>
</tr>
<tr>
<td>2.6 Opportunities to access smoking cessation programmes</td>
<td>12</td>
</tr>
<tr>
<td>2.7 Efficacy of spirometry</td>
<td>13</td>
</tr>
<tr>
<td>2.8 Reviews from within NZ prisons after smoking ban implementation</td>
<td>13</td>
</tr>
<tr>
<td>2.9 Prisoner self-health care and personal responsibility</td>
<td>14</td>
</tr>
<tr>
<td>2.10 Prisoner perception of health</td>
<td>15</td>
</tr>
<tr>
<td>2.11 Health benefits of smoking cessation</td>
<td>16</td>
</tr>
</tbody>
</table>
2.12 Summary of literature review

Chapter 3: Methodology
3.1 Design of study
3.2 Theoretical Framework
3.3 Methods
3.4 Validity and Reliability
3.5 Limitations
3.6 Ethics

Chapter 4: Results
4.1 Participants
4.2 Lung age tests
4.3 SF-36 questionnaire results
4.4 Interviews

Chapter 5 Discussion
5.1 Lung age test findings
5.2 SF-36 results
5.3 Interview results
5.4 Policy implications

Chapter 6: Summary and conclusions
6.1 Summary
6.2 Conclusion
6.3 Recommendations

References

Appendices
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Short Form (SF)-36 Questionnaires</td>
<td>58</td>
</tr>
<tr>
<td>1.2 Interview questions</td>
<td>62</td>
</tr>
<tr>
<td>1.3 Demographic questions</td>
<td>62</td>
</tr>
<tr>
<td>1.4 Questions and prompts used in the interviews</td>
<td>63</td>
</tr>
<tr>
<td>2.1 Prisoner consent form</td>
<td>64</td>
</tr>
<tr>
<td>2.2 Information for research participants</td>
<td>65</td>
</tr>
<tr>
<td>3.1 Ethical approval for research from Central ethics committee</td>
<td>66</td>
</tr>
<tr>
<td>3.2 Ethical approval for research from EIT</td>
<td>68</td>
</tr>
<tr>
<td>3.3 Ethical approval for research from Department of Corrections</td>
<td>69</td>
</tr>
</tbody>
</table>
List of Tables

1.1. Total number of prisons and prisoners in New Zealand prisons ........................................ 2
4.1 Pre and post lung age test comparisons between the 38 prisoners .................................................... 26

List of Figures

1.1. Ages of main ethnic groups in Wanganui Prison .................................................................... 3
4.1. Ages, units of prisoners who completed all components of study .................................................. 25
4.2. Lung age comparisons ............................................................................................................. 27
4.3. Short form-36 results for the prison ......................................................................................... 28
4.4. Short form-36 results from New Zealand census 2006 ............................................................... 29
4.5. Identified themes following analysis of interviews .................................................................... 30
4.6. Lung age, physical and mental health comparison of 12 prisoners .............................................. 34
CHAPTER 1 Introduction

1.1 Introduction

New Zealand prisons became smoke free on July 1st 2011. This was one of the first countries in the world to totally ban tobacco and tobacco products in all their prisons at the same time. In the United States of America (USA), a large number (31 out of 52) have total smoking bans; the Californian penitentiary system has not allowed smoking for over 15 years (Kauffman, Ferketich & Wewers 2007). Other countries have tried to implement tobacco bans by introducing partial bans first, before becoming smoke free. These partial bans were found to be hard to police effectively as prisoners could smuggle tobacco back to their cells from the designated outdoor areas (American non-smokers’ rights foundation 2010). Tobacco used to be distributed freely in prison to prisoners in America (Skolnick 1990). In America tobacco was part of prisoner rations; a practice that continued until the 1980’s (Romero & Connell 1988). Now tobacco is used as the main source of currency within prisons.

Tobacco smoking is one of the biggest health concerns in the world today. It kills nearly half its users (World Health Organisation 2011), and has been linked to many high risk diseases (Manley, Epps, Husten, Glynn, & Shopland, 1991). Many people who smoke come from the lowest socio-economic groupings and are at risk of poor health (Awofeso 2003). Prisoner populations are disproportionately comprised of men and women from these groups (Richmond, Butler, Wilhelm, Wodak, Cunningham & Anderson 2009). The New Zealand Government is committed to reducing the health inequalities that exist in New Zealand by assisting those from lower socio-economic groups improve their lives. Of the thirteen major health strategies of the New Zealand Government, smoking cessation is one of its major priorities and includes damage from second hand smoke exposure (Ministry of Health 2010).

Of the other twelve health priorities identified by the Government, seven relate directly to prisoners: improvement in nutrition, reduction of obesity, increases in the levels of physical activity, minimisation of the harm caused by alcohol and other drugs to both individuals and communities, improvement in oral health, reduction in violence in interpersonal relationships and improvement in the health status of people with severe mental illnesses. Three more health objectives are reduction in the incidence and impact of cancer, diabetes and cardiovascular diseases which also impact on those in prison, with higher numbers of prisoners suffering chronic health conditions than comparable groups in the community (Fazel & Danesh 2002). A 2009 study of American prisons found that improving the health of prisoners can assist in reducing recidivism and the reduction of health disparities as well as helping to effectively re-establish prisoners into their communities (Wilper, Woolhandler, Boyd, Lasser, McCormick, Bor, & Himmelstein 2009).
This research set out to explore the perceptions of prisoners regarding their health after they have stopped smoking. The rest of this chapter introduces the research question, and discusses the purpose and significance of the research.

Prisons contain a distinctive mix of men and women who have generally come from the most economically disadvantaged areas of society. They may have had limited access to community-based healthcare but many come to prison with increased risk factors associated with poor physical health, such as domestic violence, dysfunctional families, poor educational achievements, poverty and neglect (Indig, Tipp, Ross, Mamoon, Border, Kumar & McNamara 2010).

The total prison population in New Zealand is approximately 8,200 men and women (National Health Committee 2010) as shown in Table 1. In New Zealand, Maori are imprisoned at a rate of 700 per 100,000 compared with all New Zealanders at 199 per 100,000. This equates to 51% of the prison population being of Maori descent with Pacific Islanders representing around 11% and New Zealand European making up 25%. The remaining 13% is comprised of a mixture of ethnicities from around the world, but mostly Asian.

Table 1: Number of prisons and prisoners within New Zealand as at 27 June 2011.

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
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<tr>
<td>Number of prisons</td>
<td>17</td>
<td>3</td>
</tr>
<tr>
<td>Number of prisoners</td>
<td>8157</td>
<td>551</td>
</tr>
</tbody>
</table>

A current health initiative programme within the prison shows encouraging results in reduction of recidivism, with over 70 per cent of prisoners within this new health programme, introduced in conjunction with the Wanganui Regional Health Organisation, not returning to prison within one year. A community health worker and a registered nurse work closely with individual prisoners who are close to release date, arranging enrolment with local primary healthcare providers and General Practitioners. These key workers formulate a plan that may also include assistance in finding housing. This helps to ensure a seamless transition of healthcare for prisoners living within the Wanganui area and may lead toward optimal health for some of these prisoners (Wanganui Regional Primary Health Organisation 2011). Many men are not enrolled with a healthcare provider before entering prison so this is one way to assist these men with their health when they leave.
Nationwide, 60-80% of men in prison smoke. Worldwide, the rate of smoking in prisons is equally high, with an estimated 80% of all adult prisoners smoking tobacco (Pezzino, Remington, Anderson, Lantz & Peterson 1992). Within this prison, the smoking rates for Maori were 60%; Pacific Island at 63 % and Non-Maori at 45% before June 2010 (Department of Corrections 2011). In the community Maori and Pacific Island populations are classified as a concern as they have high smoking numbers with Maori rates at 46 % and Pacific Islanders at 36 % compared with New Zealand Europeans at around 20 % (MOH 2010). The evidence around the long term health effects of exposure to tobacco smoke and second-hand or environmental exposure for non-smokers is mounting. Any smoking cessation programme would have an immediate effect on the health of many of these prisoners -‘Empowerment of prisoners through engagement in smoking cessation activities may be the first step towards prisoners taking a greater degree of responsibility for their own health’ (Anstiss 2011).

![Figure 1.1 Prisoners by age and ethnicity (in the prison where the research was undertaken)](image)

There is no literature on prisoners’ perceptions of their health once they have stopped smoking tobacco. Research in overseas prisons has demonstrated prisoners use tobacco as an aid to coping with the stress of prison life; it is used as a currency in prison, and many prisoners have
smoked since childhood - they are addicted to nicotine (Sieminska, Jassem, & Konopa 2006). Many prisoners consider tobacco smoking healthy when compared with the alternatives of aggression, sleep deprivation, anxiety and anger that they experience without smoking (Awofeso, Martin, & Maurer 2004). Prisoners can also be locked in their cells for a minimum of thirteen hours a day and smoking is seen as a way to relieve the monotony and boredom of this.

What does health mean? Many definitions exist for this; however health means something different to every person. The World Health Organisation (WHO) defines health as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (WHO 1946). Within New Zealand health could be further defined using the concepts of Te Whare Tapa Wha to reflect Maori viewpoints of health (Durie 1998). Te Whare Tapa Wha considers health to be composed of four aspects like the four sides of a house that need to be interrelated for an individual to be truly healthy: Taha Hinegaro refers to the mental side of health but mind and body are inseparable as an entity; Tahi Wairua is the spiritual component where health can be both seen and unseen; Tahi Tinana is the physical component and good physical health is essential to the optimal development of an individual; and Tahi Whanau is the family and wider social relations component in which links to ancestors who are as important as the present and the future (Durie 1998; Durie 2008).

Can you still be healthy in a prison? Health is not a concept many prisoners grapple with; many men in New Zealand and indeed world-wide ignore their health. It is seen as being part of their masculine identity (O’Brien, Hunt, & Hart 2005; Branney & White 2008). This may be due to a range of factors, including lack of knowledge of risk factors such as obesity, smoking and even of basic health matters, or a ‘she’ll be right’ attitude. Prior exposure to healthcare that did not cater to the patient’s needs or even the availability of healthcare services within the patient’s ability to get there are also factors in poor health care uptake in some areas (Papadodima, Sakellaidis, Sergentanis, Giotakos, Sergentanis & Spiliopoupou 2009). A lack of education and a preference to use so called non-traditional medicines are more components in this, especially for many Maori who have a preference for Rongoa (remedies) and the incorporation of Wairua (spirit) into their health rather than the use of traditional European medicines. Comprehension of optimal health is difficult when you have never experienced it. A large number of prisoners may come to an understanding of this after the effects of nicotine wear off.

World-wide, men use health services less than women (Courtenay 2000; Smith, Braunack-Mayer & Wittert 2006; Mansfield, Addis & Mahalik 2003). The view that health is a woman’s prerogative may be a factor in why men are reluctant to look after their health (Tudiver & Talbot 1999). The perceived cost of healthcare and dental care is a reason given by many prisoners on entry to prison as to why they do not get health-care and may account for the large
number of remand prisoners who decide to get ‘everything checked while I’m here’. Prisoners characteristically make little use of health services outside prison, but make extensive use of services during imprisonment (Bridgwood & Malbon 1995).

With a large proportion of prisoners entering prison coming from strata’s of society where it is easy to be exposed to illicit drugs, inadequate housing and poor food choices, health may not have featured highly in their priority list (Barling, Halpin & Levy 2005). Cultural differences may play a part in how health is perceived in various communities too (Blaxter 1997). Historical studies on the health of prisoners have found a range of standards of both prisoner health and prisoner healthcare in prisons; which have different impacts on different cultural groups (Fazel, Doll & Langstrom 2008; Sabol, West & Cooper 2008; Michel, Carrieri & Wodak 2008; Fazel & Baillargeon 2010; Condon, Hek, Harris, Powell, Kemple & Price 2007).

Healthcare in prisons is reported to be poorer in countries that have prison overcrowding (Lines 2008). Large numbers of foreign nationals in prisons also adds to the burden, especially if there are language problems. This adds to the responsibilities of nursing staff trying to cope with prisoners in a culturally correct manner to prevent misunderstandings in healthcare (van Kalmthout, Hofstee-van der Meulin, & Dϋnkel 2007). Prison health care worldwide, however, is improving as more countries accept the WHO’s minimum standards for prison healthcare (Reed, & Lyne 1997; WHO 2007).

Much has been written on the effects incarceration has on prisoners’ health once they leave prison especially on how the mortality rate is actually higher in the period immediately after they are released than at any other time (Culligan, Arnold, Noble & Sligo 2004; Massoglia 2008; Australian Institute of Health and Welfare 2011; Rosen, Schoenbach & Wohl 2008). Most of the danger at this time is from prisoners going back to their old habits and using illicit drugs that they are physiologically less tolerant towards, especially if they have not been taking drugs while imprisoned (Binswanger, Stern, Deyo, Heagerty, Cheadle, Elmore & Koepsell 2007).

1.2 Prison Structure

The prison where this study was undertaken is divided into two distinct areas; called the inner and outer units. The inner unit is behind a large wire fence and houses prisoners who have a security classification of medium to medium high. The security classification rates the prisoners’ risk of escape, danger to the public and to other prisoners. Prisoners housed within the inner units have little exposure to the outside weather. They are placed in yards for several hours per day; however these yards have concrete walls, floors and half the roof, with wire netting over the rest of the roof. There are only small groups in each of the various yards within this unit, as prisoners are kept segregated according to their security classifications and gang
affiliations. No separation was able to be made for smokers and non-smokers. There are no jobs in these units, apart from the unit cleaner and the ‘mess-men’ who assist with meals.

By contrast, prisoners in the outer units, who have a lower security classification, are able to be outside for longer. They have a courtyard within the unit they are housed in as well, but it is surrounded by their cells, has grass in the middle and is exposed to the weather. Prisoners can exercise in this area and all the prisoners mix within these units. Smokers and non-smokers were outside together but the smokers tended to congregate together away from the non-smokers. All prisoners in these units can work in the various prison run industries within the prison.

1.3 The research question

The research question was “What are the changes in the health perceptions of men in prison after a smoking ban is introduced?”

Prisoners chosen to participate in this study came from the two areas noted above. The areas were chosen so a comparison could be made between these inner and outer units, comparing the exposure of prisoners to tobacco smoke and second-hand smoke. The improvement in lung ages of the prisoners in the inner units who have more prolonged exposure to the effects of tobacco may be less than that of prisoners in the outer unit who have had longer periods of exposure to fresher air. Both units had the same number of prisoners who smoked tobacco; both units had prisoners whose ages ranged from 18 to 65. The variable component was the exposure to fresh outside air. It was hypothesised that the lung age of the prisoners in the outer unit of the prison would be less than the lung age of the prisoners in the inner unit of the prison following the smoking cessation programme.

1.4 Purpose of research

The purpose of the study was to record and analyse the changes in the health perceptions of prisoners in a regional New Zealand prison who had to stop smoking tobacco due to a smoking ban. Multiple data collection methods were used. Lung age spirometry was followed by qualitative interviews and a questionnaire on quality of life (SF-36; Ware, Dewey & Kosinski 2001). Thirty eight prisoners from two distinct areas of the prison had their lung age checked on two separate occasions; once before the smoking cessation began, and once five months after the smoking ban was in place. Six prisoners from each of these two areas were randomly chosen and asked to complete a questionnaire, followed by an interview. Demographic details were also
collected from prisoners, including ethnicity, age, number of times in prison and educational achievement. An interview where the prisoners were asked their opinions on health related topics including smoking cessation followed the completion of the questionnaire.

The rationale behind the method was to obtain a better understanding of the results obtained from the lung age survey by examining the prisoners’ perceptions on the changes in their health as shown in the questionnaire and interviews.

1.5 Significance of the research

Studies from overseas have shown differing results when smoking bans have been put in place in prisons. Some prisoners have rioted at the threat of being smoke free; some have tried legal action to prevent it happening; some have accepted without problems (Awofeso et al. 2004). The health status of prisoners has been shown to be less than that of the general population in many studies: mental health (Fazel & Danesh 2002); alcohol and other drug involvement (Lukasiewicz, Falissard, Michel, Neveu, Reynaud & Gasquet 2007, Fazel, Bains, & Doll 2006); and chronic diseases-(Binswanger, Kreuger, & Steiner 2009, AIHW 2011). A health initiative that improves the health of men who have poor health literacy, previously poor access to health care and addresses alcohol and drug addiction improves society in general as these men will eventually return to society. The health literacy of New Zealanders as a nation is poor with more than one million adults testing below the minimum level necessary to adequately manage health-related activities of daily life (Lane 2010). Many prisoners also fit into these low levels of health literacy.

The views and opinions of health care users have been recognised as an important aspect when designing health services. Good prison health is also good public health (WHO 2007). One of the primary objectives of the WHO is to “promote all prison health services, including health promotion, to reach standards equivalent to the wider community” (WHO 2007). The release of the New Zealand Ombudsman’s report on the health of prisoners within prison on the 16th February 2012 was a timely reminder that health within prisons still has a long way to go to achieve parity with that of the community (Wakem & McGee 2012). However on February 17 2012 the prison where this research took place achieved accreditation with ‘Cornerstone’ which is a set of standards for primary health services developed by the Royal New Zealand College of General Practitioners. It is a continuous quality improvement programme that supports development of clinical, managerial and organisational systems to continually improve health and healthcare facilities against a set of national standards. By the end of 2011, 87% of all general practices in New Zealand were endorsed against these standards. The prison in which this research took place was the first prison in the country to be assessed and achieve these standards (Department of Corrections 2012). The healthcare given to prisoners can now be
compared with the healthcare in the community in a more visible manner. This health care is focused differently from that in a community health care facility however, in that the primary focus is on health promotion towards preventable diseases such as hepatitis, HIV, and sexually transmitted diseases. Vaccinations are also intensively targeted at newly arrived prisoners to both protect them from diseases in the prison and to prevent spread of new disease.

1.6 Structure of the thesis

Chapter Two explores the current literature on smoking cessation in prisons and health within prisons. It is well known many prisoners come to prison in poorer health than those in the general community (Smith 2000; National Health Committee 2010; Plugge, Douglas, Fitzpatrick 2011).

The design of the research is outlined in Chapter Three. The design used both qualitative and quantitative methods to get a full understanding of the health perceptions prisoners have around smoking cessation. It utilised the concepts of nursing theorist Dorothy Orem in examining self-care deficits that exist among prisoners. This underpinned the research and formed the theoretical framework by which suggestions for improvement were made. Qualitative interviews with a random selection of prisoners and a small quantitative survey were undertaken using spirometry to gauge lung age in two units of prisoners. The limitations on who could be involved in the study were reviewed along with how ethical approval for the study was obtained.

Chapter Four presented the results obtained from the interviews and questionnaires as well as the spirometry results. This study used the short-form SF-36 questionnaire with 12 prisoners to investigate their perceived quality of life following a smoking cessation programme. The results obtained from the questions in the interviews following the SF-36 questionnaire were analysed in this chapter. The questions asked prisoners what they are doing instead of smoking; what smoking meant to them; what physical benefits they had obtained from not smoking and asked what being healthy meant for them.

Chapter Five discussed the findings from the lung age checking, the SF-36 quality of life questionnaire and the qualitative interviews. Implications of this were discussed with respect to Orem’s theory and other research.

A summary and conclusion from the research were provided in Chapter Six, as well as recommendations for clinical practice, for further research and for nursing education.
CHAPTER 2 Literature Review

2.1 Introduction

In June 2010 the New Zealand Department of Corrections announced a total smoking ban in all New Zealand prisons from July 1st 2011 (Gautam, Glover, Scott & Welch 2011). While nearly 20% of all New Zealanders smoke tobacco; within prisons that figure is 3-4 times greater (Ministry of Health 2006; Butler, Richmond, Belcher, Wilhelm, & Wodak 2007). Traditionally prisoners have been able to smoke both within and outside their cells. Literature related to prisoners and cigarette smoking is widespread in other countries; however there is little evidence from New Zealand on smoking in prison. There was some evidence to suggest adverse childhood events such as physical, emotional or sexual abuse could be linked to the high rates of smoking in prisons as high numbers of prisoners report childhood abuse as a causative factor in their offending. Adoption of negative health behaviours such as tobacco smoking, drug taking and alcohol could be an individual’s way of coping with these childhood experiences. Children and young adults mirror the actions and behaviours they see portrayed at home. Many smokers come from homes where one or both parents smoke tobacco. It was also seen as a gesture of rebellion towards those in authority (Felitti, Ander, Nordenberg, Williamson, Spitz, Edwards, Koss & Marks 1998; Anda, Croft, Felitti, Nordenberg, Giles, Williamson & Giovino 1999). Other studies have shown that prisoners rated their mental health lower than those in the community (Birmingham 2003; Condon et al 2007; Brooker et al 2009). The evidence surrounding the health hazards of smoking and second hand exposure to smoke is comprehensive and does not need to be reiterated here (Centres for Disease Control and Prevention 2008; National Research Council 2010).

2.2 Search Strategy

The following databases were searched for appropriate literature: PubMed, Proquest, Science Direct, Cochrane Library, Medline and Cumulative Index of Nursing and Allied Health Literature (CINAHL). Combinations of keywords relating to ‘smoking’ (smoking, tobacco, cessation, ban); to ‘prisoners’ (inmate, sentenced, felon, prisoner, incarcerated, detainee) and to ‘health’ (health, health perception, understanding) were trialled in various combinations. An initial search through CINAHL found only two papers on prisoner perceptions on tobacco bans, so the database search was enlarged to include ‘tobacco control’ using the other databases. Also included were papers on prisoners’ perception of health. The databases were additionally searched for articles relating to ethnic differences between Maori and non-Maori in regards to uptake of tobacco smoking. Key words used for this search included ‘ethnic disparities’, ‘Maori’ and ‘non-Maori’. Six articles were found. A final database search yielded information on the health benefits of smoking cessation using the keywords ‘health benefits’, ‘smoking
cessation’ and ‘quitting’. Reference lists from all articles examined were checked to identify any extra articles missed in the database search. Limiters used were male sex, adult, human and English language. Dates range from 1990 – 2011. Peer reviewed and evidence based articles were given a higher rating than unpublished or grey literature. The Department of Corrections Head Office Librarian also found some articles from within the Corrections library, that the author was otherwise unable to gain access to.

2.3 History of smoking vetoes

The numbers of smokers within all prisons around the world is estimated to be sixty to eighty per cent of the nine million people incarcerated at present (Proescholdbell, Foley, Johnson, & Malek, 2008). As the health hazards of cigarette smoking were recognised, some countries instigated some system of smoking bans within prisons. The United States of America started smoking bans in the 1980’s and now has some form of smoking ban in all their prisons (Lincoln, Chavez & Langmore-Avila 2005). In 1983, the United States Supreme Court ruled that having prisoners in smoke-filled cells constituted cruel and unusual punishment, and Federal prisons banned tobacco due to concerns about second-hand smoke hazards. The World Health Organisation formulated a framework for smoking cessation in 2003 that has been signed by over 150 different parties and includes a guideline in Article 8 which suggests “Careful consideration should be given to prisons” (WHO, 2007). By 2010 over half the USA states had a total smoking ban in place in their federal jails. Canadian prisons have been smoke free since 2007; England, Scotland and Wales have partial smoking bans. One direct result of this was the reduction in malicious fires within prisons (Kipping, Martin, & Barnes 2006). Other European countries have only partial bans as well. Closer to home, Australia initially attempted to ban smoking in a Queensland prison in 1997 but the prison rioted (Butler, et al. 2007). By 2006 New South Wales instituted smoking restrictions rather than bans in their prisons, and Victoria has a total ban in all their prisons (Richmond, Butler, Belcher, Wodak, Wilhelm, & Baxter 2006; Richmond, Butler, Indig, Wilhelm, Archer, & Wodak 2012.).

The security status of the prison has an influence on the availability of tobacco, even after a tobacco ban is introduced. Perimeter fences are sometimes accessible by the public in lower security prisons, and contraband items can be placed near the fence or thrown over the fence. Prisoners on ‘work to release’ programmes often work away from the prison and may be coerced to bring back tobacco. Attitudes of correctional staff towards the banning of tobacco products can influence how strictly the ban is enforced. Less stringent enforcement enabled most prisoners in one American prison to continue smoking despite it being banned (Cropsey & Kristeller 2005).
One study found over twenty-five per cent of prisoners who participated voluntarily in a smoking cessation programme remained smoke free after six months despite continuing to be incarcerated in a prison that still allowed smoking (Richmond, et al. 2006). Conversely studies in both prisons and psychiatric facilities have shown forced smoking cessation does not translate into long term cessation (Chavez et al. 2004; Degenhardt & Hall 2001).

The New Zealand Corrections Department has viewed how other countries have introduced smoking bans and decided a long lead in time before commencement of the smoking ban would be the best way to prevent some of the problems encountered by other countries. They established a twelve month build-up campaign and have included free nicotine patches and nicotine lozenges as well as education and support for the prisoners, with access to the Quitline 0800 number and the use of best practice guidelines from the New Zealand smoking cessation recommendations (Ministry of Health, 2006). However these guidelines do not give direction on how to achieve smoking cessation in prisons. They also do not consider that the smoking culture of prisons is an entrenched component of prisons (Foley, Proescholdbell, Malek, & Johnson 2010).

Media reports from within New Zealand have sensationalised actions by some prisoners in Hawkes Bay, in June 2011 citing lack of tobacco for their disruptive actions, when in fact it was a change in security classification that prompted their behaviour (Anstiss 2011).

2.4 Prisoner opinion about smoking vetoes

Prisoners from other country’s prisons had differing views on smoking within prisons. Polish prisoners smoked because they missed their family and friends, were bored or missed the feeling of freedom (Seiminska, Jassem & Konopa 2006). The less educated prisoners among them had poor knowledge of the adverse effects of smoking, however many prisoners did try to stop smoking. Health anxieties were the main reason for wanting to stop. Prisoners within 12 surveyed English prisons recognised smoking as a health hazard, but the majority felt cigarette smoking helped them handle prison life better (Condon, Hek & Harris 2007; Condon, Hek, Harris, Powell & Kemple 2007). Other prisoners felt cigarette smoking had positive health effects for them; it helped calm them, it alleviated boredom and provided a support system in place of other drugs prisoners may have been using (Awofeso 2003; Hughes 2001). Many prisoners’ smoking habits worsened in Greek prisons (Papadolama, et al. 2009), while Taiwanese prisoners expressed their views on the unfairness of staff still smoking whilst they were denied cigarettes and noted the increase of ‘black market’ cigarettes and price of same. They also felt it ironic that their Government denied them tobacco while at the same time
managed the tobacco industry in Taiwan by controlling the importation, taxation, sale and
distribution of tobacco around the country (Chang, Huang, & Chen 2010).

2.5 Correction staff opinions about smoking vetoes

Many New Zealand prison staff expressed a belief that prisoners should not smoke, but were not
as keen for staff to also be smoke-free. Correctional staff in Australia and the United States also
expressed this opinion (Carpenter, Hughes, Solomon & Powell 2001; Cropsey & Kristeller
2005). Correctional staff, within these countries, who are current smokers, struggled more with
the concept of smoke free prisons than the non-smoking staff (Carpenter et al. 2001). They were
cornered with the possible negative impacts smoking cessation would have on prisoners; with
increased tension among them, as well as increased friction between still smoking staff and
prisoners; decreased quality of work from staff worried about the increase in tension and
changes in the morale of staff. There was concern staff would be pressured to bring in tobacco
items; especially those staff who continued to smoke. There was a feeling more prison visitors
would attempt to smuggle smoking paraphernalia in clothing or internally. Australian
Correction Union and prisoner advocates felt depression and anxiety would increase if tobacco
was banned (O’Rourke 2011). Within the USA, of states that do have total tobacco bans, five
states did note an increase in tobacco contraband being intercepted (Patrick & Marsh 2001).

New foods, including dried fruit, nuts, tinned tuna and crackers were added to the small list of
foods and sundries that are all that is available for prisoners to buy weekly in place of cigarettes,
tobacco, lighters and cigarette papers. A new area of concern was created in the potential for an
increase in theft of these food items by prisoners if other prisoners left their cell doors open
when they went to the shower or out to the yards.

2.6 Opportunities to access smoking cessation programmes

Some of the perceived problems of implementing and sustaining smoking cessation
programmes in overseas prisons such as USA and England were in getting access to the
programme and the length of time waiting to be seen by staff trained in smoking cessation
(Foley et al. 2010; Condon et al. 2007). The New Zealand Corrections Department did not
appear to have these problems as there was a concentrated push to get as many prisoners
stopped smoking before the cut-off date as possible (National Health Committee 2010).

Combinations of nicotine replacement patches and lozenges have proved the most effective
treatments to aiding smoking cessation (Wu, Wilson, Dimoules, & Mills 2006). Prisoners who
have failed to stop smoking using these aids were given the opportunity to trial Zyban or
Champix which are two prescription drugs used to assist in nicotine withdrawal. Nicotine gum
is not permitted within prisons due to security issues as it can be made into a mould to make
keys and be used to block keyholes. In addition some prison nurses as well as correction staff were trained as ‘Workplace Champions’. These are trained staff who can answer questions about stopping smoking.

Community based smoking cessation programmes have used patient-centred individual care plans to successfully assist patients to cease smoking (Utz, Shuster, Merwin & Williams 1994). Individual care plans are already used in nursing care of patients within prisons and could be expanded to help in smoking cessation by their concurrent use with the existing smoking cessation strategy.

2.7 Efficacy of spirometry

The efficacy of lung age spirometry in smoking cessation is an arguable one. Younger smokers do not appear to show airway limitations that one could expect from smoking; and as a consequence these smokers are also the most resistant to stopping smoking. The use of spirometry as an inspirational tool for smoking cessation was also not proven (Wilt, Niewoehner, Kane, MacDonald, & Joseph 2007). However, using lung age alone in spirometry testing did show promise of getting participants to cease smoking (Parkes, Greenhalgh, Griffin, & Dent 2008). It is a good visual tool to show prisoners who are poorly educated the damage smoking has already done to their lungs and opened an opportunity for smoking cessation discussion. There was evidence in studies of health improvement following reduction in smoking (Pisinger & Godtfredsen 2007). Measurement of changes in air quality within cells and wings may have proven more efficacious if it could have been done both pre- and post-smoking cessation (Proescholdbell et al. 2008); however this was not achievable by this researcher.

2.8 Reviews from within NZ prisons after the smoking ban implementation

Prisoners were initially given carrot sticks and dried fruit to help withdraw from nicotine. Within the first two months after the ban 30 prisoners (out of over 8000) had been caught smoking tobacco. Also within those first two months reports of smoking related items found in prisons or stopped from being brought into prisons around the country numbered over 350. One pair of slippers confiscated at Christchurch Women’s Prison had 50gm of tobacco sewn into them (Bradley 2012). Intelligence reports from around New Zealand region prisons in the early months following the smoking ban found a large mark-up in the price of illicit tobacco with 50gm of loose tobacco reaching a price of $800.00. Single rolled cigarettes were priced at $2.00 each. Cigarette lighters were selling for up to $10.00 each. Most of the money transfer has been via phone cards. A practise of ‘tea-bacco-ing’ has become common. This involved soaking nicotine patches with tea leaves and then drying them together and smoking the combination. Papers torn from books, especially the Bible, made good paper to roll the resultant leaves
together. Lozenges have also been found to be used to provide a nicotine hit with crushed lozenges added to cordial. Pieces of wire taken from the aerial of a television can be inserted into live electrical sockets and used to light the ‘cigarette’. In September 2011, a prisoner admitted making cigarettes from NRT patches and selling them for $10 per cigarette. Alternative methods of payment included giving up of hot meals, ‘hits’ on other prisoners and items from the weekly shopping list. Cigarette lighters were made contraband items when the smoking ban was introduced, but many were still being confiscated by the end of 2011 (Fields, 2011). Other methods for lighting these new cigarettes included lead from pencils or using razor blades to insert into electrical sockets to create a spark.

On a positive note, recent study in New Zealand prisons has shown that the smoking cessation policy has resulted in a 79% reduction in incidents of fires over the year when compared with the same period one year ago (Burns 2012). This had been one of the fears of correction officers that frustrated prisoners would attempt to light more fires. The Department of Corrections won the category of Public Sector Communications for smoke free prisons in the June 2012 Institute of Public Administration New Zealand (IPANZ) awards. These awards recognise and reward outstanding performances and work achievements of organisations and project teams in the New Zealand public sector.

2.9 Prisoner self-health care and personal responsibility

Hard core smokers who are not eager to stop smoking have more chance of succeeding in smoking cessation if they are given motivational interventions before commencing a smoking cessation programme (Fiore, 2000; Wakefield, Olver, Whitford, & Rosenfeld 2004). This allows thoughts of the health benefits of not smoking to be percolating in the background and therefore the transition to ceasing smoking become a little easier. Brief opportunistic discussions may start this off. Educating prisoners to optimal self-care responsibility is difficult in an institution where responsibility for most actions is handed over to authorities (the correction staff). Prisoners are told when to get up, when to receive their meals, when to shower, when to go outside, and when to come back inside. Suggestions made by smoking cessation authorities to, for example, go for a walk or get out in the fresh air are difficult to achieve in prison. Other suggestions to eat some fruit or chew gum are equally difficult in a place where your food is provided and gum is not allowed. A large proportion of Polish prisoners felt a reward such as extra visits was better than any pharmacological intervention in aiding smoking cessation (Sieminska et al. 2008). Reports from within the New Zealand Prison Service by September 2011 indicate many prisoners had taken up opportunities to participate in organised exercise regimes (Department of Corrections 2011).
2.10 Prisoner perceptions of health

The Nottingham Health profile (a quality of life instrument) was used to précis the health of 199 prisoners from two prisons in France and a higher morbidity rate among men aged less than 40 was found, compared with men in the community aged less than 40 years (Blanc, Lauwers, Telmon & Rouge 2001). The health of both male and female prisoners in five prisons in Korea were analysed and the authors found prisoners’ health needs increased while in prison, but once released, prisoners’ health deteriorated (Myongsei, Chong, Woo, Young & Sung 1997). Most health seeking behaviours of all prisoners in Norwegian prisons in 2007 were related to sleep problems. Prisoners already sentenced sought help more often than those on remand (Nesset, Rustad & Bjørngaard 2001). A similar study in Norway also discovered that as the prisoners aged, they became more satisfied with their healthcare (Bjørngaard, Rustad & Kjelsberg 2009). Over 72% of Spanish prisoners felt their health was good or very good in a survey of an Andalusian prison (Oviedo-Joekes, March, Ramos, Ballesta & Prieto 1999).

Many prison health studies acknowledge the fact that prisons are self-contained societies that have their own subcultures within (Sabo, Kupers & London (2001). Prisoners have to adapt to these subcultures to be able to survive imprisonment (Viggiani 2007). The subcultures may explain the poor health of many prisoners. There are several models of subcultures within prisons. The deprivation model or theory (Smith 2000) refers to a subculture that develops in prison as a result of prisoners being deprived of things such as their freedom, their personal autonomy, their personal security and normal heterosexual relationships. Prisoners are deprived of normal society and family life in prison, which can lead to harm to the individual prisoner’s coping skills as he adapts to prison culture. This can manifest in antagonistic behaviours and negative attitudes from the prisoners towards those locking them up. This in turn increases the likelihood of increases in aggression and fighting. These newly learnt negative behaviours can be taken back into the community and may compound a circle of violence that leads to recidivism (Jiang & Fisher-Giorlando 2002; Dhami, Ayton & Loewenstein 2007). The importation model talks of a subculture that has been formed from what the prisoner brings in from his life on the outside—his language, his values and mores. This suggests that if they had poor health out in the community, it can make the rest of the prisoners susceptible to illness and infectious diseases. If they have come from a culture of violence and degradation, this comes into prison with them. A third theory of subcultures within prisons is that of the integration model, which combines aspects of both the deprivation and importation models to explain the health of prisoners (Cassidy, Biswas, Hutchinson, Gore & Williams 1998; Hughes & Huby 2000; Viggiani 2007; Smith 2000).
2.11 Health benefits of smoking cessation

There are both immediate and long-term effects of smoking cessation. The short term effects occur quickly. Within eight hours of finishing a cigarette, nicotine begins to leave the body. Heart rate and blood pressure begin to return to normal with oxygen levels in the body increasing. By the end of 24 hours, the level of carbon monoxide in the body has measurably dropped (van Schayck et al. 2008). In a few days an improved sense of taste and smell occurs. By the time a month has lapsed from having a cigarette, the body’s immune system has started to recover and exercise will become easier, with less shortness of breath (The Quit Group 2012).

The long term effects of smoking cessation are seen after approximately a year. The risk level of coronary heart disease is decreased by approximately 50% and continues to decrease if no smoking occurs. After five years, the cancer risk decreases to half that of a continuing smoker. After 15 years of non-smoking, the risk of dying from any cause is the same as someone who has never smoked. The health benefits of quitting smoking are greater the younger the individual is (Awofeso, Martin, & Maurer 2004). Two long term benefits of smoking cessation than can be emphasized to younger prisoners are the improved physical appearance, including teeth with less bad breath, and better internal ability to control one’s behaviour (DiFranza et al. 2007).
2.12 Summary of literature review

The literature searches showed that while there are a large number of articles on smoking cessation throughout the world, there are few on smoking cessation from a prisoner’s point of view. Some prisons did have issues with smoking bans, such as riots and fires, however these were isolated events, and generally there has been a relatively easy transition to smoke-free prisons. Prisoners throughout the world have not agreed to become smoke-free and some have declared their Governments hypocritical in controlling the import, taxation and selling of tobacco, while denying prisoners the ability to have tobacco, using the guise of health. The general consensus from prison officers appeared to be that there would be trouble if prisoners were denied tobacco. Some overseas prisons have made implementing, obtaining and maintaining cessation programmes too difficult for prisoners to manage.

Lung age spirometry has not been found to be an accurate assessment tool for judging improvement in health, or in long term cessation rates. There are many real and perceived obstacles for prisoners to negotiate in improving their health especially when in a prison as their autonomy and responsibilities for lots of things are removed. Rewards one could have in the community for not smoking such as going for a walk are denied in prisons due to security issues.

There are however, high health-seeking behaviours in prison, with many prisoners deciding to get full health checks while in prison. There are many reasons why prisons have such high numbers of people in poorer health and previous studies have explored this from theoretical concepts such as deprivation, importation or a combination of both. Prisoner health has tended to improve when in prison, however once prisoners leave prison they have a higher morbidity rate than those of comparable age in the community. Little assistance is given to prisoners to remain smoke-free once they are not incarcerated.

Early childhood experiences influence the early uptake of smoking. Socio-economic status, poverty, lower educational achievement and lack of employment are other factors in tobacco uptake. Large numbers of Maori and Pacific Island men tend to have these factors in their lives.

There are both short and long term effects of smoking cessation. The short term effects are physiological with pulse and blood pressure beginning to return to normal, and oxygen levels in the body increasing within eight hours. Long term effects included decreased risk levels of coronary heart disease, and reduction of cancer risk to that of a non-smoker within five years.
CHAPTER 3 Methodology

3.1 Design of research

The design of this research was a triangulated sequential mixed methods approach. It commenced with a quantitative lung age survey of 80 prisoners. This was done twice; once before the smoking cessation commenced and once five months later, using 38 of the remaining prisoners. This was followed by a qualitative interview and a Short Form-36 quality of life survey with 12 prisoners chosen from the original 38. Initially ten prisoners were to be interviewed; two more were added to allow for saturation to be reached in case new information was elicited during the interviews. The sample selection was random within each unit, while allowing for exclusion limitations.

Mixed method research is a combination of quantitative and qualitative research methods (Byrne & Humble 2007). It offers a way of obtaining a fuller understanding of the research than could be obtained from one approach only. In this study the quantitative research was used to expand on the results of the qualitative research. Quantitative research is a process by which observable data is collected and can be conveyed in a numerical manner to show the relationships between two or more variables so as to answer a hypothesis (Cresswell, Clark, Gutmann, & Hanson 2003). The hypothesis in this research study was that prisoners in the outer units would have a lesser lung age following the smoking cessation programme; however using devices such as spirometers to calculate lung age was not intended to be rigidly scientific. It was used to show prisoners their current lung age as at June 2011 and was repeated in October 2011 to demonstrate a change (hopefully an improvement). It was designed to get the prisoners contemplating what damage tobacco smoking was doing to their lungs and also allowed the researcher to initiate a meaningful dialogue with the prisoner on a current health topic. Prisoners are generally suspicious of things that are different, but the lung age test gave them a talking-point and set up a healthy competition between prisoners to see who improved the most.

The qualitative component of the study was the study of the prisoners within the setting of the prison, exploring in greater depth the meaning of tobacco in their lives, and the prisoners’ perceived changes in their health following smoking cessation.

Group interviews would not work because the security classification of the prisoners prevents mixing many of them together. Individual interviewing would allow prisoners to speak freely without a Corrections officer present. Prisoners were more likely to speak freely to nurses as they are considered neutral persons within a prison. Prisoners were also more likely to reveal contextually relevant material to nurses they have observed for some years and can trust to
follow up on health related promises. The health unit was used for the interviews as it is viewed as the least ‘prison’ like building within the prison apart from the chapel.

3.2 Theoretical Framework

The theoretical framework for this study was Dorothy Orem’s self-care deficit theory (Orem 1995). Orem’s theory is based around the core belief of each individual having an innate ability to care for themselves. She divided her theory into three separate sub-theories;

1. - self-care,

2. - self-care deficit, and,

3. - nursing systems that nurses use to assist someone to meet their self-care needs.

Self-care according to Orem is “…the production of actions directed to self or the environment in order to regulate one’s functioning in the interests of one’s life, integrated functioning and well-being.” (Orem, Taylor, Renpinning 2001). These actions differ according to an individual’s age, health status, resources and are a learned behaviour.

When the actions of an individual are not enough to meet the self-care necessary to promote health, a self-care deficit exists. A nurse can assist at this stage. Three types of nursing systems were identified by Orem to guide the delivery of nursing care. They are wholly compensatory, partially compensatory, and supportive-educative. The nurse is the dominant care giver in the wholly compensatory system. An equal relationship between nurse and the individual exists in the partially compensatory system; and in the supportive-educative system the individual manages their own self-care activities but needs help within deficit areas.

Men attempting to stop smoking within a prison environment came under the theory of supportive-educative system. That is they manage their self-care adequately but did not have the knowledge to implement successfully a smoking cessation programme without assistance. To provide nursing care Orem isolated evidence-based procedures such as diagnosing of the problem, care plans, treatment and case management to describe how the care of an individual was managed.

Data from the Ministry of Health (2006) revealed prisoners in the New Zealand prison system had been smoking, on average, for at least ten years and many had started smoking at around 12 years of age or younger. There were some men who understand the dangers of smoking but many had poor health knowledge, and poor support skills for stress and anger management.
Using Orem’s theory of self-care deficit, it is the author’s experience that many prisoners’ self-care demands of healthy activity, stress and anger management and health education were not being met. From this a diagnosis was be devised encapsulating education needs and anger/stress management. Treatment plans were then formulated with the prisoner to meet these needs.

The diagnosis of health education need and anger/stress management are related to prevention of health deterioration and this is where the supportive-educative system was designed to be used to provide an individualised nursing care plan. The nursing care plan would include interventions such as teaching, guiding and promoting the prisoner towards an environment that supports him to achieve a positive outcome in stress and anger management and improving his health education so he can make informed decisions about his own health with the best knowledge available (Utz, Shuster, Merwin, & Williams, 1994).

3.3 Methods

The prisoners had two occasions over five or six months in which their lung age were checked, using lung age spirometry. Twelve randomly chosen prisoners had an audiotaped face-to-face interview with the researcher, preceded by the SF-36 quality of life questionnaire. Within the interview, three demographic questions were included asking prisoners educational achievement, number of prison sentences and whether or not they felt smoking was bad for their health. The lung age spirometries were completed before the interviews or questionnaires were started. This enabled the results of the lung ages to be used as a point of discussion on health post smoking cessation and empowered prisoners who had not contemplated any alteration in their health to envisage changes. This approach was used to corroborate the findings from the quantitative data (SF-36, lung age changes) with the interpretations of the qualitative information (interviews), with the aim of seeking a convergence of the results, although the qualitative study findings have priority (Cresswell 1999).

Individual interviews allowed the prisoner to respond more fully, especially if he could not read well. Permission was required from the prison manager for audiotaped interviews. Once a prisoner completed his interview it was transcribed and a copy made available for the prisoner if he wished. The hard copy of the interview has been stored in a secure place.

The qualitative interviews examined aspects of health following smoking cessation. The interviews took up to forty-five minutes. They were designed to increase understanding of the men’s’ perceptions of health through open sharing of their thoughts, beliefs and experiences in a verbal manner. Notes were taken on the tone of voice used, the expressions conveyed visually and anything within the environment that influenced the interviews. These field notes were used to enrich the transcribed data.
Interviews were conducted in the health unit with a prison officer out of hearing, as the door was closed but the prisoner was still within line-of-sight of the officer. Even though the researcher works in the prison in which the research took place, health and safety issues had to be considered (Barr & Welch 2012). Each prisoner was given the opportunity to refuse to participate and assurances of confidentiality and anonymity were reinforced and reiterated as necessary. Consents needed to be signed for each prisoner interviewed and reminders given that the interview was audio-taped. The audio recorder was in full view of the prisoners during the interview. Rather than using the standard seating arrangement in the health unit of the nurse sitting in front of the computer, but close to the door, and the prisoner sitting at the side of the table furthest from the door; which allows the nurse to get to the door first should she feel threatened by the prisoner, the researcher and prisoner sat side by side at the table. This was introduced to try and minimise the implied status difference between the researcher and prisoner and encourage free verbal interaction between them.

A convenience sample group of nurses working in the prison was asked to pilot test the questionnaire before it used with the prisoners. This was done to check the validity of the questionnaire (Schneider, Whitehead, Elliot, LoBiondo-Wood, & Haber 2007). This helped determine if any revisions were needed if their answers show variance to the expected responses. Questions that may be viewed in a different manner by men from another culture or ethnicity were also assessed as some of the nurses are from different ethnicities as well.

The lung age testing took around five minutes for each prisoner and was accomplished on a random basis when prisoners return from the yards, after a stand-down period of 15-30 minutes to reduce exercise as a variable on the results. The lung age test involved the prisoners blowing into a hand-held spirometry device much like a breath-tester. Each prisoner had three attempts and an average was taken of the three. Five months later each prisoner from the original group used the spirometer again for three more trials and an average was taken of these attempts as well. These results were then analysed.

The Short-Form 36 questionnaire (SF-36) is a survey that examined the quality of life of the participants. It consisted of 36 questions that measured physical and mental health via eight health domains: physical functioning (10 questions), general mental health which covered psychological distress as well as psychological well-being (five questions), bodily pain (two questions), role limitations due to physical health (four questions), vitality (four questions), general health perceptions (five questions), social functioning (two questions) and role limitations due to emotional health (three questions). One final question asked about future health prospects (Ware, Dewey & Kosinski 2001).
The data from the SF-36 was normalised according to standard procedures in order to facilitate comparisons with other data.

A linear T-score conversion process was used to standardise both the physical and mental health summary scores with 0 representing the lowest score and 100 the highest score. Higher scores correspond with better perceived health. The eight section scores grouped into norm-based scores have been standardised to the 1998 United States of America (USA) general population to have a mean score of 50 and a standard deviation (SD) of 10 (Arostegui, Núñez-Antón, & Quintana 2010).

The SF-36 is an internationally validated instrument (Brazier, Harpur, Jones, O’Cathain, Thomas, Usherwood & Westlake 1992; Butterworth & Crosier 2004) and has been utilised in other prisons around the world (Plugge et al. 2011; Anderson, Sestoft, Lilleback, Gabrielson, & Hemmingsen 2002) as well as in the general population of New Zealand (Scott, Sarfiti, Tobias, Martin, & Haslet 2000; Scott, Tobias, Sarfiti, & Haslet 1999), and in general surveys around the world (Wagner et al. 1998; Ware et al. 1998). The original questionnaire did ask some questions about activities that are not applicable within a prison setting however, so, using a compendium of physical activities (Answorth, Haskell, Leon, Jacobs, Montoye, Sallis & Paffenbarger 1993) alternative activities were found that equated to the energy expenditure levels of the original items and were appropriate within the prison.

Thirty-eight prisoners from both the outer and inner units of the prison were selected to have lung age testing; nineteen from each unit. Six men from each of these groups were also selected to participate in the questionnaire and interviews. All prisoners were chosen by random; however, as the researcher has worked within the prison for a number of years, all the prisoners were known to her and had been treated for various health conditions over the years. This meant a rapport had already been established with the prisoners. The random list was taken from a nursing text [column nine, page 183] (Schneider et al. 2007). Each prisoner in the unit was numbered from one onwards; starting alphabetically with the first surname starting with ‘A’ and then ‘B’ and so on until all prisoners in the unit were numbered. There was a 100% agreement from the prisoners to be interviewed, however the first prisoner randomly chosen from the inner unit had to be taken off the list due to custodial security issues as he had recently become a maximum security prisoner who required three officers to monitor, so was not deemed safe to speak with one researcher alone. The list of random numbers therefore started at the second number in the column. The interviews were conducted over several weeks as the researcher had to fit the interviews in around her job. Each interview was transcribed as soon as possible.
following the interview, while everything that had been said or done was still fresh, and did not ‘meld’ with the next interview

Prisoners to be included in the sample had to be sentenced prisoners who would not be released before the end of 2011. This was to enable all the testing and interviewing to be completed. Any prisoner who did not speak English was excluded due the difficulties of translation. Any prisoner who had a classification higher than medium high was excluded due to security and researcher safety issues. There was no specified age range, except that prisoners have to be over the age of 18 to be in an adult prison. Women’s prisons have not been included in this survey.

3.4 Validity and Reliability

The numbers of prisoners surveyed may be too small to reflect the prison population as a whole. It does accurately represent those prisoners interviewed due to the care in ensuring confidentiality and anonymity of these men.

3.5 Limitations

Limitations include the possibility of sampling errors (Polit & Hungler, 1999) due to the sampling method used and the limited number of prisoners surveyed. Another limitation may be selection bias in that those men who participate may be more concerned about the ramifications of smoking cessation than those who decline. As this project will only sample a small proportion of one prison the results therefore cannot be said to represent the prison population as a whole, although some findings would be applicable to other men’s prisons in New Zealand.

Exclusion criteria: non-English speaking prisoners will be excluded from the entire study due to the difficulty of procuring translators; any prisoners acutely mentally unwell at time of the study; and profoundly intellectually disabled prisoners will also be excluded. Any prisoner who is classified as deaf will be excluded as the researcher does not know sufficient sign language to be able to communicate effectively. Those prisoners due to be released prior to October 2011 are excluded as they would not be available to complete the both the lung age testing and the interviews. Prisoners who are in isolation will also not be included in the study. Any prisoner who under a three man unlock rule may be judged by the corrections staff as not suitable for interviewing due to security issues and will be excluded.
3.6 Ethics

Ethical approval was granted by the Central Region Ethics Committee. Ethical approval from the Department of Corrections and the Eastern Institute of Technology (EIT) were also granted. (Appendices 3.1, 3.2, & 3.3). Permission to conduct interviews at the prison was granted by the prison manager, the health centre manager and the unit manager of the Maori Focus Unit. Verbal permission was also given for the interviews to be audio-taped by the prison manager and for the equipment to be on site as recording devices are not normally allowed in prisons.
CHAPTER 4 Results

4.1 Participants

A total of 80 prisoners initially volunteered when the lung age tests began. This number reduced to 38 when the second round of tests was completed and 12 of these prisoners completed the quality of life survey and interviews. Of the twelve prisoners interviewed, three had tertiary education, with one having a postgraduate degree. Seven prisoners had completed secondary school with one going on to a vocational trade but two prisoners had not finished primary school. Two prisoners were on their first sentence, the other ten prisoners were on their second or more sentences. One prisoner crossed out this section of the questionnaire and wrote in 13 for the number of sentences he had had. Of the prisoners interviewed, 75% (n=9) were Maori and had an average age of 33.0 (range 19-53) years old. The other 25% (n=3) were non-Maori with an average age of 50.6 (range 48-54) years old. Only one prisoner was highly suspicious of the whole interviewing procedure and required repeated reassurances that what he said was confidential and anonymous.

Figure 4.1 Prisoners by age and unit who completed all four components of the study (in the prison the research was undertaken).
4.2 Lung age spirometry

Eighty prisoners participated in the initial lung age spirometry. They were tested in May/June 2011 and given an average of their current lung age after three consecutive blows into the spirometer. Thirty-eight of the original eighty prisoners were tested again in October/November 2011 and the results compared (see Table 4.1). The hypothesis that prisoners within the outer unit tested would have a lesser lung age than prisoners within the inner unit five months after the smoking cessation programme was not shown. There was no statistical difference (p=0.89) between the two groups with respect to lung age changes, using paired t-testing (Hicks 2010).

Table 4.1 Comparisons between the 38 prisoners who completed the pre and post smoking cessation tests.

<table>
<thead>
<tr>
<th>Age</th>
<th>20</th>
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The initial lung age tests with these men in June 2011, demonstrated most had poorer lung function than their chronological age would suggest. The lung ages of those less than 30 after the second round of testing, remained the same in two out of the nine prisoners in the inner unit. The other seven prisoners decreased their lung ages either slightly as in from 21 to 20 and 31 to 30 or moderately as in from 40 to 37 and 39 to 37. One prisoner from the inner unit decreased his lung age from 36 to 30 years.

Three prisoners aged between 40 and 49 decreased their lung ages. One prisoner remained the same; one decreased from 39 to 38; and two lowered their lung ages substantially from 70 to 62 and 62 to 55. The two remaining prisoners in the inner units were in the 50 to 59 year old group. They both increased their lung age after the second tests from 66 to 70 and 37 to 54.
The men under 30 years in the outer unit produced similar results to the inner unit. Six prisoners were tested in this age and two remained the same at 20; two reduced slightly from 23 to 22 and 35 to 34. The other two prisoners had a larger reduction with one man lowering his lung age from 34 to 20 and the other from 42 to 35. Of the five prisoners in the 30 to 39 year old group, two had a reduction in lung age and two had an increase from 26 to 33 and from 27 to 33. The two that improved their lung ages went from 64 to 63 and from 42 to 38. One man did not have any change to his lung age. There were six prisoners in the 40 to 49 year old group. Three improved, with lung ages dropping from 69 to 62, and from 42 to 32 and from 70 to 64. One prisoner did not alter his lung age in this group. Two prisoners had an increase in their lung ages, with one going from 50 to 54, and the other from 34 to 35. Two prisoners in the 50 to 59 year old group had opposite results with one testing and remaining at 20 and the second prisoner initially testing at 42, and on the second set of tests, recording 54 years.

Figure 4.2 Average pre and post lung tests in age groupings
4.3 SF-36 Results

The averaged results by ethnicity in the quality of life survey are shown below in Figure 4.4, after being normalised according to the instructions in the SF-36 manual (Ware, Dewey, & Kosinski, 2001). Maori prisoners rated their health significantly better than non-Maori in several scales; aggregate physical health, physical functioning, bodily pain, general health, role limitations caused by emotional factors; and vitality They also rated their health slightly better in role limitations caused by physical factors; however their perceived health in three sections was rated as worse than the non-Maori: the aggregate mental health, social functioning and mental health. The confidence interval (CI) was 95%. The standard deviation (SD) ranged from 4.27 for role emotional to 11.28 for the aggregate mental health.

![Mean SF-36](image)

Figure 4.3 SF-36 results for the prison where the research took place.

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<tr>
<th></th>
<th>Aggregate Physical health</th>
<th>Aggregate Mental Health</th>
<th>Physical Functioning</th>
<th>Role Physical</th>
<th>Bodily Pain</th>
<th>General Health</th>
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<th>Role Emotional</th>
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Figure 4.4 Standard deviations (SD) for the SF-36 results.
A comparison to this is shown in Figure 4.4 which is data from the 2006 New Zealand Census. The aggregate physical and mental health readings were not reported for the 2006 Census results, nor were the results normalised. The New Zealand 2006 Census result report Maori and non-Maori separately and can be used to compare the general direction of the results from the prison survey. The Census results show Maori men regarded all aspects of their health as poorer than the non-Maori except in physical functioning where they rated it approximately the same as non-Maori.

![Figure 4.4 Mean SF-36 Results for adult men aged 15-80 from the New Zealand Census 2006](image)

**4.4 Interviews**

One question asked the prisoners’ beliefs on smoking. Seven prisoners agreed it was harmful for their health: 100% (n=3) of non-Maori and 33% (n=4) of Maori. Another 33% (n=4) Maori prisoners had never thought about whether or not smoking was harmful to their health and one prisoner (Maori) did not think smoking was affecting his health in any way.

The quality of life questionnaire was followed by an audio-taped interview where four questions were used to initiate discussion. The questions were:
1. What are you doing now instead of smoking?
2. What does/did smoking mean to you?
3. What physical benefits do you think you have got from not smoking?
4. What does being healthy mean to you?

Four main themes that came out of this study were:

1. Increased exercise tolerance/improved health;
2. A change in the taste of food;
3. A change in stress levels; and
4. The reasons behind smoking commencement.

These four themes were mentioned throughout the interviews, some in response to the specific questions, some drawn out of subsequent questions.

*Figure 4.5* The 4 main themes identified after the interviews were analysed through NVivo 9.
4.4.1 Theme 1

The first theme to emerge from the interviews was increased exercise tolerance and improved health.

All the years I have wasted in jail don’t mean anything now, cos I can make up for those years by not smoking-I haven’t been punished-I have been given more life (Pr1, age 48, European)

Basically being able to enjoy life, participate in everything, no more back pain, no pain at all (Pr9, age 23, Maori)

I’ve got to be healthier than what I was on the outside. I abused myself more out there than I would in here. I know I wouldn’t be this healthy if I wasn’t in jail (Pr3, age 29, Maori)

Being healthy is like being able to exercise, do things you couldn’t never do before. (Pr2, age 44, Maori)

Can do exercise I exercise, I meditate, I can’t read because of my visual problems, and I spend time with close friends-there are only a few. I like to reflect on what I have learnt and running I really enjoy, jogging and callisthenics. (Pr7, age 50, European)

Doing a bit more running, not eating anymore which I thought I would, basically exercising more, that’s about it, trying not to, oh especially now I am off those patches, I’m not even missing it, only occasionally you know I think I would like a smoke. I was a heavy smoker, have been for 30 odd years, smoking 2 x 80 grams per week. (Pr6, age 39, Maori)

Heaps. Being able to do things I never could before-like running around, doing more laps than I have ever done in my whole life, that’s good eh. And I’m glad I gave it up. (Pr2, age 44, Maori)

4.4.2 Theme 2

A change in the ability to taste food was the second theme, although not all prisoners rated this as an improvement

I can do all these things I couldn’t before and I can taste my food and breathe better and do things I couldn’t do when I was smoking. (Pr2, age 44, Maori)
Smoking didn’t really do anything for me, it was just killing me. The food tastes nice-you don’t need to put as much salt on it. (Pr3, age 29, Maori)

I just find I am hungry a lot. The food tastes better now. My taste buds are there. (Pr4, age 53, Maori)

I eat better, I smell the food more clearer, and the taste is like wonderful (Pr9, age 23, Maori)

My lungs are five years younger, and I’ve put on a kg. I can taste the food, but that’s not always good in here! (Pr5, age 22, Maori)

I don’t feel any different, in fact I probably feel worse-’cos I have put on heaps of weight and I feel a lot more uncomfortable. The food does not taste any different. (Pr11, age 54, European)

The food still tastes horrible-it’s jail food. (Pr12, age 19, Maori)

Apparently a person that handles a lot of chemicals loses a lot of taste buds and sense of smell and things like that. Maybe in a couple of years I will notice a change-you know when I get out, ’cos you know I am used to this same 4 week menu in here, you know, so when I get out to the outside and I go and get some KFC or something like that, oh, it will taste different yeah and I will notice it. (Pr10, age 41, Maori)

4.4.3 Theme 3

The third theme analysed was concerned with stress. Two prisoners acknowledged the difficult time was at night when everyone was locked up in their cells:

I try to entertain myself-there’s really not much to do in jail, you’re very limited, maybe play ‘smokes’ (a card game), maybe have something to eat, take the edge off it and that’s about all you can do, read a book or something. Only time it really affects me is in the evening when we’re locked up. (Pr9, age 23, Maori)

I’ve got the patch (NRT) and I’ve got two squeezy balls and when I start feeling a bit iffy I just grab them one in each hand and just squeeze, squeeze the balls. And I change the channel on the TV so I’m not watching the programme where someone’s smoking-rubbing it in my face. (Pr10, age 41, Maori)
Smoking was just a comfort, basically a time filler, a stress relief, ah just a bad habit. (Pr8, age 50, European)

Well, smoking kept me from stressing out, . . . I could always smoke pot then too. (Pr10, age 41, Maori)

It is very satisfying to me and yeah you’re right— it still does mean something to me, if I was smoking that is and it was my choice, my right, yeah. It’s very wrong what they did by taking smoking away. I think it should be a personal choice, you know it’s wrong. And I don’t care if I’m in here two years; I’m going to try a smoke when I get out ’cos I still miss it. (Pr11, age 54, European)

4.4.4 Theme 4

The fourth and last dominant theme was the reasoning behind starting smoking. Most of the smokers had started at a young age, some as young as nine years old. No difference was noted between Maori and non-Maori in the reasons behind starting smoking.

It’s just an addiction—it’s a hard habit to kill (Pr3, age 29, Maori)

I thought it was cool, wanted to fit in really (Pr6, age 39, Maori)

It meant, when I was smoking, it was cool you know; like my friends (Pr9, age 23, Maori)

Some prisoners smoked because they like the taste:

It is very satisfying to me. It’s very wrong what they did by taking away smoking. I think it should be a personal choice, you know it’s very wrong. And I don’t care if I’m here 2 years, I’m going to try a smoke when I get out because I still miss it (Pr11, age 54, European)

It was like the best hobby I’ve ever had. I started smoking when I was about ten. I just feel the urge and then I have a smoke (Pr12, age 19, Maori)

Oh, I’ve done it most of my life, 28 years, because I enjoyed it. I enjoyed my cigarettes (Pr4, age 53, Maori)

4.5 Summary
The twelve prisoners, who completed all the elements of the study; namely the lung age tests, the SF-36 questionnaire, and the interviews, returned individual results when all the components were put together, as shown in Figure 4.6. Fifty-eight percent (n=7) decreased their lung ages and felt their physical health had improved. Twenty-five per cent (n=3) of prisoners noted no change in their lung age, but felt their physical health had changed for the better. One prisoner noted his lung age to have increased after the five months, but felt that his health had improved despite this. The remaining prisoner felt both his lung age and his physical health had deteriorated. He commented in the interviews that he was going to start smoking again as soon as he was released. The mental health of the 12 prisoners is also represented in Figure 4.6. Sixteen per cent (n=2) of the men were identified with their mental health as being equivalent to the normalised average result for the general American population, while 84% (n=10) were well below this average figure. Four Maori prisoners rated their mental health as less than 40%, more than 1 SD below the average of the general public.

![Figure 4.6](image-url)

**Figure 4.6.** A comparison of the 12 prisoners who completed the whole survey; the lung age tests, the SF-36 questionnaire and the interviews. A decreasing lung age score means the prisoner’s lung age has improved.
CHAPTER 5 Discussion

5.1 Lung age test findings

Before the total tobacco ban prisoners in New Zealand prisons were found to have consistently high incidences of tobacco use; up to approximately 80%. This is consistent with research in overseas prisons. It is estimated there are between five and 7 million smokers in prison at present out of approximately eight million prisoners world-wide. International studies have found even a small reduction in tobacco consumption can have a beneficial effect on respiratory and cardiovascular conditions. While the tobacco consumption was high, most prisoners in this prison knew it was harmful to their health.

Smoking bans in other communities, such as psychiatric units, had similar concerns about the cessation programme that staff within the corrections system expressed. One study found no increase in psychiatric medications being prescribed, no increase in ‘incidents’ and no increase in patient agitation (Lawn & Pols 2005). They also found there was little to stop patients resuming smoking once they were discharged from the psychiatric unit. Haustein, Haffner & Woodcock (2002) found it was more difficult to assist patients with a mental illness to stop smoking; however individualised plans with the additional use of nicotine replacement therapies plus lozenges was beneficial. These closed community studies mirror the problems that were expected in the prison system before the smoking ban was put in place; and show the same challenges are faced by these patients once they leave their particular population.

The spirometry lung age test initially involved 80 prisoners, however in the final test; only 38 remaining prisoners were able to be retested of the original groups due to multiple prisoner transfers out of the prison; prisoner releases, and deportations; and in one case a prisoner was unable to complete the second test due to a fractured jaw sustained just before the second round of tests began. The lung age tests were never designed to be scientifically validated as too many variables existed within the tests; different techniques in using the spirometer despite instructions, varying times from completing strenuous exercise, the time of day, and even desire to take part in doing the testing. The researcher was unable to minimise some of these variables due the need of the Corrections staff to go about their daily activities.

One object of the lung age testing was to compare the two units tested to perceive any differences between the two units. The chosen inner unit of the prison housed prisoners with a security classification of higher than that of the chosen outer unit. The prisoners within this inner unit had less exposure to fresh air. Non-smoking prisoners found it difficult to be far enough away from smokers to be not affected by the cigarette smoke, either inside or outside the cells; before the smoking cessation programme was introduced. The outer unit was a
The lung age testing was intended to be a starting point for discussion on the damage smoking tobacco was doing to prisoner’s lungs. In this aspect the tests were successful as many prisoners asked when the second test was to occur and expressed satisfaction at an improvement in their lung age after the second test. Measurement of air quality, while beyond the scope of this study, would have been more effective in demonstrating improvement and cleaner air, but would not have involved the prisoners personally. A recent New Zealand prison study did involve measurement of air quality in a prison around the time of the smoking cessation policy commencement (Thornley, Dirks, Edwards, Woodward and Marshall 2012). This study found a significant improvement in the quality of air within the prison. Other prison studies report this improvement post-smoking cessation (Proescholdbell et al. 2008; Hammond & Emmons 2005).

Seven individual prisoners recorded improvements of between 7-14 years after their second round of tests; nevertheless their lung age at the end of the testing was still higher than their chronological ages. Three were from the inner unit and four were from the outer unit. They were aged 21, 27 and 30 for the inner group; and 22, 29, 41 and 45 for the outer group.

Lung capacity can improve by up to ten % within nine months. Younger smokers do not tend to notice improvements unless doing strenuous aerobic exercise, however lung capacities naturally decrease as one ages, so older smokers would notice effects more quickly –wheeziness on exertion for example (NHS 2010). European studies have found the maximum benefit in terms of cessation occurs in the 30-40 year old age groups (West & Stapleton 2008). After that age the maximum number of life years gained by ceasing to smoke decreases year by year. Lung function also decreases naturally with ageing. The European studies also observed higher rates of depressive symptoms and lowered rates of exercise, with poorer perceived quality of life in older long term smokers.

5.2 SF-36 Results

A total of 12 prisoners agreed to be interviewed and fill in the questionnaires. They were randomly chosen from the prisoners who had already completed the lung age testing. Six prisoners were chosen from each of the two units used in the lung age tests. The results of the SF-36 demonstrated that Maori prisoners rated their physical functioning health as better than that of the non-Maori prisoners. The survey additionally showed better emotional health, better general health and vitality was perceived by Maori prisoners. Role emotional or emotional health designates the effects of emotional problems on an individual’s performance of their work or daily activities. If a prisoner is ruminating over their changed circumstances, or
worrying over the things he was imprisoned for, he cannot work to full capacity in any area. Vitality measures a person’s fatigue and energy levels. General health is a combination of how an individual perceives his health and how he sees his health compared against others. For many prisoners healthcare has been limited in their lives and the high risk taking behaviours that have caused many of the diseases and illnesses that prisoners present to the health unit with, such as smoking, substance abuse, results of violence such as head injuries; and unsafe sexual practices causing sexually transmitted diseases developed in the communities they came from. It is not until they come to prison and have a chance to reflect and learn, as well as detoxify from previous unsafe practices that some prisoners realise how unhealthy they are. There was a slight change between the Maori and non-Maori prisoners over role physical, with the Maori rating higher. Role physical refers to the degree in which an individual is limited by their health from accomplishing a range of physical activities such as walking, bending, and kneeling. The Maori prisoners rated their social functioning and mental health as less than non-Maori and also felt they had more bodily pain. Social functioning denotes the impact of emotional or health problems on social activities with others. Bodily pain refers to an indication of the severity of pain suffered by an individual and on how much it interferes with activities of normal daily living. Mental health is a measure of the amount of time a person encounters feelings of depression, loneliness, sadness or happiness. The mental health results mirror the findings of other studies into the mental health of prisoners which found prisoners have lower mental health than those in the community and imprisoned indigenous peoples have lower mental health than non-indigenous peoples (Birmingham 2003; Condon et al 2007; Brooker, Fox, & Callinan 2009).

The New Zealand (NZ) survey of prisoners (MOH 2006) found that over half had been diagnosed with a chronic disease, with the most common chronic illness being asthma. At that time, 70% of prisoners had a general practitioner (GP) as their health provider in the community; leaving nearly 2000 prisoners who had no GP and did not access healthcare. In Australia over 60% of male prisoners had never accessed a medical centre before incarceration; with 17% of them never having had any medical care (Indig et al. 2009). This was also found in a study with British short sentence prisoners (Brooker et al 2009). Mental health was generally less than that of the wider community (outside the prison), however none of these prisoners were recognised to have a mental illness or were receiving psychological support. According to Ware & Gandek (1994) this also means they can have up to an 80% probability of suffering from a depressive illness as many prisoners have some form of mental illness, however it has not been acknowledged. Statistics from the 2005 NZ prisoner health survey showed 63% of prisoners reported a head injury at some time in their life, with Maori more likely than non-Maori to do so. The Department of Corrections has recognised this problem of undiagnosed and
untreated prisoners with mental illness/injury and has recently introduced a more thorough mental health screening process for newly arriving prisoners to ensure adequate help can be obtained for these men (Department of Corrections 2012). The average age of the Maori prisoners who completed the SF-36 was 32 compared with the average of 48 for the non-Maori prisoners. A shortcoming of this SF-36 survey is that it cannot show if the results obtained from the survey are an effect of incarceration or indicative of the socio-economic characteristics of the prisoners prior to imprisonment.

5.3 Interview Findings

The transcribed interviews were analysed and grouped into themes, which were highlighted for easy recognition (Seers 2012). The interviews were also analysed through the use of a computer qualitative data analysis tool (NVivo 9). This helps the researcher to organise and examine large quantities of data. Common details of information became evident quite quickly through the interviews, although each interview was an individual process and each prisoner had their own set of experiences to talk about. The interviews were staggered over some weeks and the prisoners were from different units. All the interviews were in closed rooms that could be observed by custodial staff, but not overheard. This did not prevent one prisoner from being very suspicious of the whole procedure and he required much more reassurance than the other prisoners. He also had the most negative comments of all the interviewees and expressed his firm commitment to resuming smoking once released. The other eleven prisoners interviewed hoped to not begin to smoke again once released. Research in other prison studies have found individual prisoners forced to quit smoking tobacco are more likely to return to their former patterns of behaviour, including smoking, once released from prison (Kauffman, Ferketich, & Wewers 2007).

The interview questions produced four main themes. The concept of increased exercise tolerance and improved general health was mentioned 43 times and was welcomed by the majority of prisoners, especially one who felt he had not been punished at all by coming to prison as a major chronic illness was successfully treated while he was imprisoned. Other men felt they could enjoy life without pain now and manage to do things like running that they had never managed before. Many prisoners come into prison in a poor state of health; some with pre-existing mental health problems. The lack of access to healthcare outside of prison due to the cost is the reason given by most for not accessing healthcare. Once prisoners realise medical and dental care is free for most issues they insist on seeing healthcare personnel for even trivial health matters. Prisoners on remand are the most demanding of health-care and those who have very long sentences such as life, the least demanding. This is common to prisons in other
countries as well; English and Norwegian prison officials noted prisoners use the time in prison to ‘catch up on health-care’ (Condon, Gill, et al., 2007; Feron, Paulus, Tonglet, Lorant, & Pestiaux, 2005; Nesset M, Rustad A, E, R, & Bjorngaard J, 2001).

Patterns of disease are different in prisons from that in the community. Higher rates of infections such as sexually transmitted diseases and blood borne diseases like hepatitis B and C and HIV are found in prisons. Due to high-risk lifestyle choices outside prison, drug and alcohol abuse proportions amongst incoming prisoners is also high. Many of these prisoners also have undiagnosed chronic health problems such as hypertension, gout, dental caries and cardiovascular disease. An increasing number are being diagnosed with Type 2 diabetes as well.

Families of New Zealand prisoners were asked about the positive and negative effects prison has had on the health of their family member imprisoned in a 2009 prison report. Many of these prisoner families felt the positive effects on their relatives were regular access to healthcare, improved physical fitness, regular meals and lack of drugs or alcohol (or a reduction in same). Some negative effects were an increase in injuries due to prison violence, and some families felt existing health conditions were exacerbated in prison (Wesley Community Action 2009). Prisoners knew that smoking was not good for their health. The majority of prisoners involved in the interview process for this report told the researcher they were aware of the negative aspects of using tobacco; however they felt powerless to do anything about it. A primary reason cited for this was the inability to pay for smoking cessation aids despite having the finances to pay for tobacco itself (There is no cost to prisoners to access NRT and lozenges to aid smoking cessation in any New Zealand prison). Some prisons came across increased resistance when they charged the cost of nicotine patches and lozenges to their prisoners (Foley, Proescholdbell, Malek, & Johnson 2010). Studies overseas have demonstrated a reduction in use of tobacco produces an improvement in health, especially in cardiovascular and respiratory conditions (Pisinger, Godtfredson 2007), aspects of which were supported by this research.

The second theme to emerge was that of changes in taste with most prisoners appreciating the ability to taste food again, although two prisoners did not like the taste of prison food. One man was waiting to get out and taste ‘real food’ like ‘KFC’ before he decided if there had been a change in his taste buds. Prisoners were initially given carrot sticks and dried fruit to help withdraw from nicotine. More alternative food choices have been since added to the list of groceries prisoners can buy weekly, such as nuts, and tinned fish and crackers. A USA court ordered one prison to serve more appetising food after a prisoner complained but this was successfully overturned by lawyers who argued that the 8th amendment of the American constitution required that food that prisoners receive is ‘merely adequate to maintain health and does not need to be aesthetically pleasing’ (Greenwood 2008). As little as 150 years ago, a
prison diet was bread, water and gruel. But nowadays, prisoners in United Kingdom prisons have variety of menus to choose from daily and can have ‘standard’, vegetarian, halal, Caribbean and kosher each day as they chose. Prisoners in Italy help to grow the food they eat and even have a small wine allowance as part of their daily menu (Robinson 2011). New Zealand prisoners are only offered the one choice and cannot change diets daily to suit. There is a high component of bread in the diet. A prisoner health survey in 2005 found that most prisoners did at least eat the recommended daily servings of fruit (MOH 2006). No prisoners recognised the link between putting extra salt on their food so they could taste it and the high rates of hypertension among prisoners (Binswanger et al.2009)

The third theme from the interviews was stress and ways in which prisoners dealt with it. Most prisoners stated they had begun smoking to fit in with their peer groups and continued within prison as a method of coping with boredom or the stress of prison life. There is a degree of stress at all times by being in a prison; the prevalent gang cultures, the threat of violence, intimidation or other ‘stand-over’ schemes employed by other prisoners for food, drugs, sex, or property. Roguszki and Chauvel (2009) found prisoners had ‘heightened states of anxiety over prolonged periods’ due to these negative components of prison culture. There appears to be little difference between Maori and non-Maori in the reasons given for smoking. Many prisoners describe prison routine as so boring they become apathetic, listless and disinterested in doing anything, even when offered as a chance to better themselves (Viggiani, 2007).

Institutionalisation to prison life appears to sap any independent decision making abilities of prisoners and it becomes easier to sit in the cell and do nothing rather than find a fruitful way of passing time. Becoming involved in educational classes and exercise are two recognised methods of combating stress within prisons.

The last main theme noted was the reasons behind starting smoking in the first place. For some it was because they wanted to be the same as everyone else, or fit in with the ‘in’ crowd. For others it was because they liked the taste and could see no reason to stop doing something they enjoyed, even when they knew how harmful it was to other people’s health-it was never their health that was spoken of. Some of the prisoners interviewed could name relatives in their nineties apparently in good health who had smoked all their lives, so they could see no reason for them to be concerned. Others did acknowledge the addictive nature of tobacco. One prisoner felt it was very satisfying having a smoke and had no intention of stopping. He declared the first thing he would do on his release was to buy a packet of cigarettes and smoke them.

Combining the results of all the tests; the lung age tests, the SF-36 questionnaire and the interviews from the 12 prisoners who completed the whole study shows some demonstrable health improvements for these 12 prisoners. Of the prisoners surveyed, 80% of them felt their
lung age had either improved or stayed the same, and their physical health had improved. They acknowledged that smoking tobacco had been harmful to their health and did appreciate the changes they now felt in their health.

The Department of Corrections in New Zealand put in place organised physical training programmes within the prisons, which include running, weight training and static rowing to help prisoners after the smoking cessation commenced. Initially within this prison there was a very poor turnout of prisoners to even try something new, but gradually the numbers increased. By February 2012, a small group of prisoners had become so keen they participated in the New Zealand-wide Cancer Foundation Relay for Life. They attempted to set a world record in certain weight categories by rowing for 24 hours (under supervision) and trying to set records in various weight classes. Five world records were set over two sessions in different weight classes and one world record just missed.

5.4 Policy implications

Unless long-term interventions are put in place for prisoners once released, the short-term health gains of smoking cessation will be lost. Facilitating a change in prison culture so that both prison officers and prisoners feel a smoke-free environment is feasible and meaningful is necessary for its success. As the use of tobacco in the community lessens, the desire to be able to fit into the community without tobacco may be easier. Current advertising in social media networks extolling the benefits of smoking cessation utilise targeted programmes to different ethnicities. This work on the outside of prison may help to change a small part of the culture inside prisons, with new prisoners arriving daily, bringing the message of non-smoking. The habit of using positive reinforcement towards prisoners who have successfully completed the smoking cessation programme helps to boost their self-esteem and may foster belief in their ability to change other components of their criminogenic behaviour. Utilisation of individually tailored smoking cessation programmes for Maori prisoners, rather than generic programmes offers a better chance of long-term success.

Co-ordinating prison and community services with respect to smoking cessation need to be better managed though. One intervention for newly released prisoners could be if they were able to obtain NRT and lozenges freely from their probation officers, rather than a pharmacy, as they have to see their probation officers weekly. Cost is a barrier for many prisoners to access many things in the community, including further health care. Emphasis on health promotions such as becoming healthy for yourself and your family, and reinforcement of the health benefits of not smoking are good steps in lifestyle improvements that may assist in recidivism reduction.
Continuing use of schemes such as the health navigator, run by the Wanganui PHO, which have already shown reduction in prisoners returning to prison, should be encouraged. Peer support groups outside prison is another option to explore for supporting newly released prisoners in continuing to stay smoke-free.
CHAPTER 6 Summary and Conclusions

6.1 Summary

This thesis was comprised of a literature review, and a quantitative and qualitative study of prisoners in a New Zealand lower North Island prison. The literature review discussed the history of tobacco cessation in prison around the world; prisoner and staff opinions about smoking cessation; opportunities for prisoners to access smoking cessation programmes; efficacy of lung age spirometry in smoking cessation; a review post smoking cessation from New Zealand prisons, with reference to any problems encountered; prisoner self-care and responsibility, along with their perceptions of health and the health benefits of smoking cessation.

The literature review of tobacco cessation in prisons around the world revealed few prisons had problems if there was a long lead-in from formulating the smoking cessation policy to enforcing it. Some prisons that abruptly stopped smoking privileges had prisoner rebellion in the form of riots and fires within their prisons. Staff and prisoners were divided in their opinions about smoking cessation, with correctional staff expressing beliefs that it was a good thing, but worried of the possible ramifications of negative prisoner responses. Many prisoners recognised smoking was damaging their health, but were worried about how they would cope with stress and boredom.

Initial fears with regard to accessing smoking cessation programmes were unfounded in New Zealand prisons. The Department of Corrections organised for a large supply of nicotine replacement therapy patches and lozenges to be provided free of charge to prisoners for tailored twelve week programmes. Overseas prisons who charged their prisoners for the cost of nicotine replacement aids encountered considerable prisoner resistance, especially initially when the cost was more than the cost of the tobacco (Foley et al. 2010). Use of lung age spirometry to assist in smoking cessation is still a debatable concept. Within this study, it was used primarily to open a dialogue about smoking cessation with the prisoners. Assessment of changes in the quality of air within prisons was measured in another New Zealand study and found an improvement in the quality of the air. The post smoking review from within New Zealand prisons revealed prisoners’ ingenuity in attempting to continue smoking, and also how prized a commodity tobacco and lighters had become. The recent IPANZ awards show that the work the Department of Corrections is doing with smoking cessation within prisons is recognised as a significant step in the health of prisoners.

There was a review of prisoner self-care and the problems encountered by those assisting prisoners empowerment in smoking cessation. How prisoners perceive their health was
discussed, along with reasons why so many prisoners come to prison with poor health. Three theories were considered; the deprivation model which referred to prisoners developing a subculture within the prison as a result of imprisonment, in which their personal autonomy, security and normal sexual relationships are denied to them. The next model examined was the importation model; which referred to the subculture the prisoner has brought in from outside the prison, and includes his culture, values and language. The integration model was the third theory used to describe prisoner well-being; this model is a combination of both the deprivation and the importation models.

The short and long term benefits of smoking cessation were surveyed. The short-term gains can begin as quickly as eight hours post cigarette, and the long-term benefits can carry on for over 15 years, placing the ex-smoker in the same health risk category as a non-smoker.

The quantitative study in this thesis was a two-time analysis of lung age spirometry, before and after the smoking cessation programme commenced. Two units of the prison were used, and thirty-eight prisoners randomly selected from these units. One unit had less exposure to outside air than the other. The hypothesis that the unit which had the ‘freshest air’ would have the most improvement in lung age was not proven. Prisoners under the age of 45 improved their lung ages that is, their lung age decreased; however lung ages largely remained older than the prisoner’s chronological age. Prisoners over 45 were noted to have increased their lung age. Four non-smokers who took part in the testing showed significant decreases in their lung ages.

The qualitative study was a combination of a quality of life survey, (the SF-36); and a one-on-one interview with twelve prisoners randomly chosen from the 38 who participated in the lung age tests. This group of prisoners were varied in educational achievements, ages, length of prison sentences, and number of sentences. Of the twelve, 75% were of Maori descent. The majority of the 12 men felt smoking was harmful to their health, but all had smoked prior to the smoking cessation programme commencement. The Maori prisoners surveyed rated their health significantly better in five of the eight sectors of the SF-36; their physical functioning, their emotional health, vitality and general health. They were also slightly better in one sector; that of the limitations caused by physical problems and worse in the remaining two sectors of mental health and social functioning than the non-Maori prisoners who completed the same survey.

These same 12 prisoners then completed an audio-taped interview with the researcher. In this interview they were asked questions relating to smoking tobacco, and to their health. The four main themes that emerged from these interviews were; increased activity/improved health; change in the taste of food; decreased stress; and reasons for smoking commencement. When the results of all the tests were combined, the results showed 80% of the prisoners surveyed felt their lung age had either stayed the same or improved, and their physical health had also
improved. Mental health for the prisoners was generally poorer than that of men in the community. This finding has been corroborated by other prison studies.

Underpinning this research has been the use of the self-care deficit model advocated by nurse theorist Dorothy Orem. She felt each individual has an innate ability to care for themselves. There are times however when this ability is compromised by gap in their knowledge or ability and this prevents achievement of optimal health due to physical or mental health limitations. One problem identified in this research was the health hazards of smoking tobacco. Most prisoners recognised that tobacco smoking was a significant health hazard; however they felt powerless to do anything about it. Previous research in New Zealand prisons has shown most prisoners want to give up smoking but do not know how to start the process (Williams 2010). The reasons given for not being able to stop smoking ranged from inertia through to inability to afford nicotine patches and lozenges. Of the prisoners who wanted to stop smoking, none had a plan for an alternative to deal with any stress arising from not having a cigarette or for what to do with the time normally involved in the process of smoking.

Nurses are perfectly placed within the justice system to assist enabling of prisoners to accomplish some components of their healthcare that they had not managed by themselves. Using the supportive-educative system devised by Dorothy Orem, prisoners were assessed as having a gap in their knowledge base around smoking and smoking cessation. Nearly 80% of all prisoners were smokers. Strategies involved in the formulation of the smoking cessation programme had involved querying both current and ex-prisoners on what had worked for them, with regard to stopping smoking. Parts of the plan for the programme were devised from this. Each prisoner was assessed on his level of addiction and the appropriate nicotine patch and/or lozenge was prescribed to him, with a written timeline. Each prisoner also received a written sheet informing the prisoners of the benefits of smoking cessation and alternative ways of coping without cigarettes. Additionally the prisoner signed a contract acknowledging abuse of the patches and /or lozenges would result in their withdrawal.

This plan was implemented when the prisoner was first seen by the nurse on arrival to the prison. Several follow-up assessments were made over the 12 week course of the smoking cessation programme and alterations to the strength of NRT patches and /or lozenges as necessary. Evaluation has come through the interviews with prisoners, conducted in this research. One element of the plan that has been shown to be effective was the long lead up to the actual date of cessation of July 1st 2011. Other countries who tried short lead-ins had riots and fires; New Zealand prisons have reported few major problems.

The evaluation process has also shown the need for further smoking cessation assessment in the community for those released from prison. Groups such as Aukati Kai Paipa and Smokefree
New Zealand are ideally qualified to be linked to newly released prisoners for their support. On release from prison, prisoners are now given cards to these groups along with their health summaries for their general practitioners.

6.2 Conclusions

This study, while small, has shown prisoners mostly feel better about their health once they have ceased smoking. There was a range of ages, from 18-55, both Maori and non-Maori included in the study. There was also a difference in the length of sentences the prisoners were serving, from two years to life. The quality of life survey found there is still work needed on the mental health of prisoners, especially Maori. There is however no evidence to suggest prisoners will remain smoke-free once they leave prison, although the majority do want to, so the health benefits of smoking cessation while in prison may be short lived if there is nothing set up in the community to assist prisoners once they are released from prison. Orem’s theories have been helpful in designing individual care packages for prisoners to assist in reducing their self-care deficits especially with regard to smoking cessation. Her theories could also be utilised in a number of different self-care deficit scenarios within a prison; as many prisoners are basically healthy but have poor health literacy.

6.3 Recommendations

Greater health resources still need to be targeted at communities where health deprivations exist. Prisons are such a community and present a unique opportunity for Governments to alleviate some of the most pressing health needs while this ‘audience’ is in a ‘captive’ state. Continuing to offer smoking cessation resources to new prisoners to ease their addiction is the only way to keep the prisons smoke-free. Promoting other aspects of health to prisoners such as lifestyle improvements in diet and exercise will be easier. Post-release support for prisoners needs to be strengthened and peer-support groups for prisoners needs to be advocated. More research into how to incorporate prisoners’ desires for a healthier lifestyle on release with continuing smoke cessation is needed. Evaluation of the cessation programme with emphasis on its effectiveness will enable providers to better target clients who need more support. Using Maori support smoking cessation providers such as Aukati Kai Paipa or Te Hotu Manawa Maori will aid Maori ex-prisoners. Local initiatives that are working need to be promoted nationally to aid this, such as referrals to general practitioners or secondary providers. Other schemes that reduce barriers to care in the community should be promoted. Larger research
studies into smoking cessation in prisons are also needed to validate and enlarge on the findings of this study.
References


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specific algorithms in 10 countries: result from the IQOLA Project. International Quality of Life Assessment. *Journal of Clinical Epidemiology*, 51(11), 1167-1170.


Appendices

1.1 SF-36 Questionnaires

Your Health and Well-Being

This survey asks for your views about your health. This information will help keep track of how you feel and how well you are able to do your usual activities. Thank you for completing this survey!

For each of the following questions, please circle the number that best describes your answer.

1. In general, would you say your health is:

<table>
<thead>
<tr>
<th>Excellent</th>
<th>Very Good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>▼</td>
<td>▼</td>
<td>▼</td>
<td>▼</td>
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<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

2. Compared to one year ago, how would you rate your health in general now?

<table>
<thead>
<tr>
<th>Much better now than one year ago</th>
<th>Somewhat better now than one year ago</th>
<th>About the same as one year ago</th>
<th>Somewhat worse now than one year ago</th>
<th>Much worse now than one year ago</th>
</tr>
</thead>
<tbody>
<tr>
<td>▼</td>
<td>▼</td>
<td>▼</td>
<td>▼</td>
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<tr>
<td>1</td>
<td>2</td>
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<td>5</td>
</tr>
</tbody>
</table>

3. The following items are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?

<table>
<thead>
<tr>
<th>Yes, limited a lot</th>
<th>Yes, limited a little</th>
<th>No, not limited at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>▼</td>
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</tbody>
</table>

**Vigorous activities**, such as running, lifting heavy objects, participating in strenuous sports

<table>
<thead>
<tr>
<th>Vigorous activities</th>
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<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

**Moderate activities**, such as, sweeping floors, serving food, grooming-shaving, washing

<table>
<thead>
<tr>
<th>Moderate activities</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Lifting or carrying groceries

<table>
<thead>
<tr>
<th>Lifting or carrying groceries</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
Climbing several flights of stairs  1  2  3
Climbing one flight of stairs  1  2  3
Bending, kneeling, or stooping  1  2  3
Walking more than one kilometre  1  2  3
Walking half a kilometre  1  2  3
Walking 100 metres  1  2  3
Bathing or dressing yourself  1  2  3

4. During the past 4 weeks, have you had any of the following problems with your exercise routine or other regular daily activities as a result of your physical health?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
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<tbody>
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</table>

Cut down on the amount of time you spent on your exercise routine or other activities  1  2
Accomplished less than you would like  1  2
Were limited in the kind of exercise or other activities  1  2
Had difficulty performing the exercises or other activities (for example, it took extra effort)  1  2

5. During the past 4 weeks, have you had any of the following problems with your exercise routine or other regular activities as a result of any emotional problems (such as feeling depressed or anxious)?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
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<tr>
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</tbody>
</table>

a. Cut down on the amount of time you spent on exercise or other activities  1  2
b. Accomplished less than you would like  1  2
c. Did work or other activities less carefully than usual  1  2

6. During the past 4 weeks, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbours, or groups?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>A little bit</th>
<th>Moderately</th>
<th>Quite a bit</th>
<th>Extremely</th>
</tr>
</thead>
</table>
7. How much bodily pain have you had during the past 4 weeks?

<table>
<thead>
<tr>
<th>None</th>
<th>Very mild</th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
<th>Very Severe</th>
</tr>
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<td>5</td>
<td>6</td>
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</table>

8. During the past 4 weeks, how much did pain interfere with your normal exercise routine?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>A little bit</th>
<th>Moderately</th>
<th>Quite a bit</th>
<th>Extremely</th>
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</table>

9. These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past 4 weeks:

<table>
<thead>
<tr>
<th>Did you feel full of life?</th>
<th>All of the time</th>
<th>Most of the time</th>
<th>A Good bit of the time</th>
<th>Some of the time</th>
<th>A Little of the time</th>
<th>None of the time</th>
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<td>5</td>
<td>6</td>
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</table>

<table>
<thead>
<tr>
<th>Have you been a nervous person?</th>
<th>All of the time</th>
<th>Most of the time</th>
<th>A Good bit of the time</th>
<th>Some of the time</th>
<th>A Little of the time</th>
<th>None of the time</th>
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<td>5</td>
<td>6</td>
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</table>

<table>
<thead>
<tr>
<th>Have you felt so down in the dumps that nothing would cheer you up?</th>
<th>All of the time</th>
<th>Most of the time</th>
<th>A Good bit of the time</th>
<th>Some of the time</th>
<th>A Little of the time</th>
<th>None of the time</th>
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<td>5</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Have you felt calm and peaceful?</th>
<th>All of the time</th>
<th>Most of the time</th>
<th>A Good bit of the time</th>
<th>Some of the time</th>
<th>A Little of the time</th>
<th>None of the time</th>
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<td>5</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>
10. During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting friends, relatives, etc.)?

<table>
<thead>
<tr>
<th>All of the time</th>
<th>Most of the time</th>
<th>Some of the time</th>
<th>A little of the time</th>
<th>None of the time</th>
</tr>
</thead>
<tbody>
<tr>
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<td>5</td>
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</tbody>
</table>

11. How TRUE or FALSE is each of the following statements for you?

<table>
<thead>
<tr>
<th></th>
<th>Definitely True ▼</th>
<th>Mostly True ▼</th>
<th>Don’t Know ▼</th>
<th>Mostly False ▼</th>
<th>Definitely False ▼</th>
</tr>
</thead>
<tbody>
<tr>
<td>I seem to get sick a little easier than other people</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I am as healthy as anybody I know</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I expect my health to get worse</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>My health is excellent</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Thank you for completing these questions!
1.2 Interview questions

1. What are you going to do now instead of smoking?
2. What does/did smoking mean to you?
3. What physical benefits do you think you have got from not smoking?
4. What does being healthy mean to you?

1.3 Demographic questions

1. My education level is:
   a) Primary
   b) Secondary
   c) Vocational e.g. Apprenticeship or industry training organisation
   d) Tertiary, Polytechnic or University

2. I am:
   a) On remand
   b) On my first sentence
   c) On my second or more sentence

3. Which of these sentences best describes your beliefs about tobacco smoking?
   a) Tobacco smoking is harmful for my health.
   b) I have never thought about whether smoking is harmful for health.
   c) Tobacco smoking does not affect my health in any way.
<table>
<thead>
<tr>
<th>Questions and prompts used in interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introductions, explanations, go through consent process, reinforce confidentiality and anonymity</td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
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<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>(1)</td>
<td>What are you going to do now instead of smoking?</td>
</tr>
<tr>
<td>Prompt</td>
<td>Allow participant time to think over question</td>
</tr>
<tr>
<td></td>
<td>What do you fill in your time with that you used to spend smoking?</td>
</tr>
<tr>
<td>(2)</td>
<td>What does/did smoking mean to you?</td>
</tr>
<tr>
<td>Prompt</td>
<td>Why did you smoke?</td>
</tr>
<tr>
<td></td>
<td>What physical benefits do you think you have got from not smoking?</td>
</tr>
<tr>
<td>(4)</td>
<td>What does being healthy mean to you?</td>
</tr>
<tr>
<td>Prompt</td>
<td>What about your spiritual side-your Wairoa?</td>
</tr>
<tr>
<td></td>
<td>Is that important to you for being healthy?</td>
</tr>
<tr>
<td></td>
<td>How can you tell if you are healthy?</td>
</tr>
</tbody>
</table>

Thank participants. Any questions? Any more to add? Remind them they can have a copy of their answers if they want one.
2.1 Prisoner consent form

CONSENT FORM

Project Title: Smoking Cessation in New Zealand prisons

Researcher: Stephanie Muir

I have read and I understand the Information for Research Participants sheet dated 27/09/11 for volunteers taking part in this study. I have had the opportunity to discuss this study and am satisfied with the answers I have been given.

I understand I am able to withdraw all of my information until March 2012.

I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the testing at any time and this will in no way affect my future health care/continuing health care.

I understand that my participation in this study is confidential and that no material which could identify me will be used in any reports on this study.

I have had time to consider whether to take part, and know who to contact if I have any questions about the study.

I agree to take part in this research.

Yes ☐ No ☐

I consent to my interview/activity being audiotaped

I wish to receive a summary of the results

Signed: ______________________________________________________
Name: ______________________________________________________

Signature of Research Participant’s Support Person (if applicable)

Date: ____________________
Witness: ____________________

I Stephanie Muir undertake to maintain the confidentiality of information gather during the course of this research.

Signed ________________________________

Dated ________________________________

This study has been approved by the Central region Health and Disability ethics committee on 11/08/2011, Reference CEN/11/EXP/066.
### 2.2 Information for research participants

#### Information for Research Participants

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<tr>
<th>Date:</th>
<th>27/9/11</th>
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<th>Project Title:</th>
<th>Smoking Cessation in New Zealand prisons</th>
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<tr>
<th>Researcher(s):</th>
<th>Stephanie Muir</th>
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<th>Affiliation:</th>
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#### Description of the research:

Examining what prisoners perceive of health changes after stopping smoking.

#### What will participating in the research involve?:

Using a spirometer on two different occasions. Participating in an interview at the health centre which will take about 45 minutes and will be audiotaped. The interview will be on your opinions about the smoking ban and some aspects of your health.

#### What are the benefits and possible risks to you in participating in this research?

An insight into your health and ways to improve it.

#### Your rights:

- You do not have to participate in this research if you do not wish to.
- Once you have completed the research you have a 4 month period within which you can withdraw any information collected from you.
- You are welcome to have a support person present (this may be a member of your family/whanau or other person of your choice)
- You may request a summary of the completed research

#### Confidentiality:

All information collected is confidential and your name is not mentioned in the study. No information about you will be made to any other person without your written consent. Any data collected will be stored securely in the health unit for 10 years. Any taped material from the interviews will be wiped after it has been transcribed and you have had a chance to review it if you want to.

*This study has been approved by the Central Region Ethics Committee on 11/8/11, Reference # CEN/11EXP/066.*
3.1 Ethical approval for research

Ms Stephanie Muir
10 Fraser Place
Wanganui

Dear Ms Muir

Ethics ref: CEN/11/EXP/665 (please quote in all correspondence)
Study title: Ban Behind Bars

This expedited study was given ethical approval by the Chairperson of the Central Ethics Committee on 11 August 2011.

This approval is valid until 1 March 2012, provided that Annual Progress Reports are submitted (see below).

Amendments and Protocol Deviations
All significant amendments to this proposal must receive prior approval from the Committee. Significant amendments include (but are not limited to) changes to:

— the researcher responsible for the conduct of the study at a study site
— the addition of an extra study site
— the design or duration of the study
— the method of recruitment
— information sheets and informed consent procedures.

Significant deviations from the approved protocol must be reported to the Committee as soon as possible.

Annual Progress Reports and Final Reports
The first Annual Progress Report for this study is due to the Committee by 11 August 2012. The Annual Report Form that should be used is available at www.ethicscommittees.health.govt.nz. Please note that if you do not provide a progress report by this date, ethical approval may be withdrawn.

A Final Report is also required at the conclusion of the study. The Final Report Form is also available at www.ethicscommittees.health.govt.nz.

We wish you all the best with your study.

Yours sincerely

Awhina Rangiwai
ADMINISTRATOR
Central Ethics Committee
The above letter acknowledges the change in title of the study.
Reference Number 24/11

1 November 2011

Stephanie Muir
C/- Faculty of Health Science
EIT Hawke’s Bay

Dear Stephanie

Thank you for your re-submitted application "Ban Behind Bars", of which you have updated and revised with guidance from your Supervisor, Bob Marshall. I am pleased to inform you that your research project "Ban Behind Bars" has now been formally approved for a period of 2 years, by the Research Ethics & Approvals Committee through delegation in October 2011.

You are reminded that should the proposal change in any significant way, then you must inform the Committee. Please quote the above reference number of all correspondence to the Committee.

Please provide the Committee with a progress report after one year of the project and a brief summary at the conclusion.

The Committee wish you well for the project.

Yours sincerely

Kay Morris Matthews
Acting Chair – Research Ethics & Approvals Committee
3.3 Ethical approval from the Department of Corrections

28 October 2011

Stephanie Muir
10 Fraser Place
WANGANUI 4500

Dear Stephanie

Approval for research proposal

I am pleased to advise that all permissions for your proposal 'Smoke-free prisons: An evaluative study of male prisoners' perceptions of health benefits following a smoking cessation programme in NZ prisons' have been completed, and I am now able to give formal approval for your research. Please read and sign the enclosed Research Agreement, and return it in the prepaid envelope provided. A second copy is provided for your own records.

Please liaise with Sally Faisandier in Strategic Analysis and Research at the Department of Corrections to discuss any logistical or administrative issues. Sally can be contacted on 04 460 3087 or email sally.faisandier@corrections.govt.nz.

I wish you well with the research, and look forward to hearing of the outcomes.

Yours sincerely

Jane von Dadelszen
General Manager
Strategy, Policy and Planning

Enclosures
Research agreement x2
Postage paid envelope