BLIND PEOPLE CAN DO ANYTHING

BUT

NOT IN MY COMPANY

EMPLOYER ATTITUDES TOWARDS EMPLOYING BLIND AND VISION-IMPAIRED PEOPLE

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ABSTRACT

Previous international research has shown blind and vision-impaired people to be in the less favoured groups of employees employers are willing to hire. None of the research has addressed why this is the case.

The present study was undertaken firstly to see if in New Zealand also, blind and vision-impaired people were less favoured in comparison with other disability groups as potential employees; and secondly, to determine employer attitudes and perceptions towards employing blind people, and how or why these attitudes and perceptions influence employers to overlook the blind and vision-impaired when employing staff.

One hundred and two employers (sample 200) participated in a telephone survey and, of those, six were interviewed again in an in-depth face-to-face interview. A combination of attitudinal and perception survey instruments were used.

The research found participants had mainly favourable attitudes towards blind and vision-impaired people. However, in total contrast, blind and vision-impaired people (alongside those with moderate to severe intellectual disabilities) were regarded the least suitable or least employable for positions most and second most often available in firms across all industries.

The results were congruent with earlier findings (Gilbride, Stensrud, Ehlers, Evans & Peterson, 2000) in that of all of the disability groups, blindness and persons with moderate or severe (mental retardation) intellectual handicap were perceived as the hardest to employ in comparison with other disability groups.

Lastly, this report comments on how potential hiring practices (employers' potential behaviour) can be changed to better match their apparent positive attitudes towards blind and vision-impaired people. A range of recommendations are made such as the need for education programmes in schools, media campaigns and cultivating positive media relationships, workplace training and education, employer mentoring programmes, the development of government policies and strategies and the need for work experience programmes.

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DEDICATION

This thesis is dedicated to the blind, deafblind and vision-impaired people of New Zealand and, in particular, all of those blind individuals who have struggled against huge odds and the effects of persistent attitudinal barriers to obtaining and retaining employment.

"Prejudice is something we see in others and accuse them of it. We rarely admit it ourselves." Reich and Adcock

"The formula for success is putting the right people in the right jobs and then sitting on the sidelines and being a rousing good cheerleader." A. Marshal Jones

Note: DDA refers to the Disability Discrimination Act (United Kingdom)

GLOSSARY

adventitiously blind. A person who acquires a vision impairment or blindness during their lifetime

ADA. Americans with Disabilities Act

ANZIC. Australian and New Zealand Industrial Classification (1996)

ANZSCO. Australian and New Zealand Standard Classification of Occupations (2005)

ATDP. Attitudes Towards Disabled Persons scale.

ATBP. Attitudes Towards Blind Persons scale

attitude. Cognitive representations of our evaluation of ourselves, other people, things, actions, events, ideas

blind. Someone whose vision is such that they meet RNZFB registration criteria

blind and vision-impaired. Refers to and is inclusive of blind, vision-impaired and deafblind people.

congenitally blind. A person who is born blind or vision-impaired

deafblind. People who have both a vision and hearing impairment

disability. Impairments which become disabilities when the organisation of society makes access or inclusion difficult

environment. Physical characteristics of the world as well as societal attitudes, organisational practices and processes

habilitation. Services to help people gain, maintain, and improve skills that allow them to live and participate in their local community

impairment. A functional limitation, e.g. person may have limited hearing or experience learning difficulties

retardation. Someone with an intellectual disability or handicap

RNZFB. Royal New Zealand Foundation of the Blind

vision-impaired. People who have reduced or low vision, some of whom are eligible for membership and receive services from the RNZFB

Chapter 1

INTRODUCTION

BACKGROUND TO THE STUDY

Overview

It is estimated that one in five (743,800) New Zealanders have some form of disability (*New Zealand Disability Strategy*, Ministry of Health, 2001). The New Zealand Human Rights Act (New Zealand Human Rights Commission, 1993) prohibits employment discrimination against those who are disabled (including the blind and vision-impaired) and against people who choose to use a remedial aid such as a guide dog in performing their employment duties. The Human Rights Act is further embodied in the New Zealand Disability Strategy (2001) and the *Pathways To Inclusion Strategy* (Department of Labour, 2001). Yet in 2001, 9.4% of disabled people in the labour force were unemployed and actively seeking work, compared with 6% of non-disabled people (Ministry of Social Development - Office for Disability Issues, 2002).

The 2001 New Zealand Disability Survey (Statistics New Zealand, 2002) estimated that 81,500 New Zealand adults were blind or had a sight limitation that could not be corrected by glasses or contact lenses. In a 2002 study of 18–65-year-old members of the Royal New Zealand Foundation of the Blind (RNZFB), the unemployment rate was found to be between 14% and 24% (La Grow, 2004) depending on the definition of 'unemployed' and between 9% and 28% were considered to be underemployed. The unemployment rate of blind people is up to four times that of the general population and up to 2½ times that of the wider disabled population. In June 2003, the official unemployment rate in New Zealand dropped further to 4.7% which contributed an even greater employment gap.

Given the strong non-discrimination messages to employers through legislation and government strategies, why is it that there remain so many disabled (and in particular blind people) not employed or underemployed?

Blind people in employment

Blind people find it hard to obtain and retain employment in comparison with other disability groups (Jensen, Sathiyandra, Rochford, Jones, Krishnan & McLeod, 2004). This is despite Tyler's research which states that "with minor accommodations, visually impaired workers can become productive, loyal and enthusiastic numbers of the team" (as cited in Waby, 2003, p. 5). When a 2001 Saskatchewan Employer Survey asked employers which of nine disability types could fill jobs they had available in their companies only 6% said they had jobs that someone who was 'blind or visually impaired' could perform (Scott 2003).

Two New Zealand studies have examined blind people in employment. The first, by Beatson in 1981, found 60% of those 1419 blind and vision-impaired people surveyed were unemployed (this figure included those who stated they were "housewives", "students", or "retired"). Even if the students and so forth were removed from the calculations, 28.5% were unemployed. Beatson (1981) also concluded underemployment of blind people was significant in the New Zealand blind community.

These findings are reinforced by the second New Zealand study undertaken by La Grow (2004). La Grow's study examined the level of unemployment of blind and vision-impaired people in New Zealand. One hundred and fifty randomly selected members of the RNZFB between the ages of 18 and 65 years were interviewed. La Grow found that 39% were employed either full time or part time. Those with the least amount of usable vision were less likely to be employed (26%) than those with some usable vision (36%) or than those with "a lot" of usable vision (63%). The unemployment rate amongst blind and vision-impaired people was found to be between 14% and 24%, which is four to six times higher than the national unemployment rate is an extremely high rate when it is compared with the more recent overall unemployment rate 3.4% (*Household Labour Force Survey*, Statistics New Zealand, September quarter, 2005).

Definition of blind and vision-impaired

There are many different definitions of blindness and vision impairment. These include "legal" definitions used to authenticate people's access to rehabilitation and habilitation services. These definitions vary from country to country and from service organisation to service organisation. Definitions cover individuals who are both

congenitally blind and adventitiously blind and encompass varying degrees or levels of low vision through to complete blindness.

The definition utilised by the RNZFB for membership is 6/24m in the best corrected eye or less than 20% field of vision in the best corrected eye. However, a more general definition easily understood by the public was developed as part of the 2001 New Zealand Disability Survey where it was estimated 81,500 New Zealand adults were blind or had a sight limitation that could not be corrected by glasses or contact lenses. Approximately 7,800 of these adults were completely blind, while the rest had some level of seeing limitation that made it difficult for them to see ordinary newspaper print or see the face of someone across the room (with glasses or contact lenses if they usually wore them).

For the purposes of this research the latter more generally descriptive definition is used for what we call blindness and vision impairment. This definition is:

> People who are completely blind and people who have a vision impairment that makes it difficult for them to see ordinary newspaper print or see the face of someone across the room (with glasses or contact lenses if they usually wear them).

This definition was explained to people who were surveyed if they asked what was meant by "blind and vision-impaired". For those who did not ask for clarification it was assumed they took the statement "blind and vision-impaired" to mean general blindness.

Employment barriers

The Human Rights Act (1993) prohibits discrimination against people with disabilities. This applies to blind and vision-impaired people. It is therefore illegal to discriminate on the grounds of disability in employment (where the disabled applicant is qualified for the position) or to insist that the job tasks (not essential to the job) are difficult or impossible for blind and vision-impaired people to undertake.

Despite this Act and other government policies (such as the New Zealand Disability Strategy, Ministry of Health, 2001, and Pathways to Inclusion, Department of Labour, 2001) employer discrimination continues to impact on blind and vision-impaired job

seekers. Blind people themselves have identified that discrimination is the biggest hurdle for them to overcome (La Grow, 2004; Jensen et al., 2004; Gilbride et al., 2000; Crothall, 2004) in gaining employment. Many of these barriers are attitudinal and include a range of factors, for example, fear of the unknown, inferiority; pity; ignorance, stereotypes, denial and so forth.

Attitudes definition

There appears to be no universal definition of the concept of attitudes (Olsen & Zanna, 1993). However, in the past the concept of attitudes has been described in terms of evaluation, affect, cognition and behavioural predisposition. Triandis (1971) defines an attitude as "an idea charged with emotion which predisposes a class of actions to a particular class of social situations" (as cited in Antonak, 1988, chap. 9, p. 110). More recently Antonak and Livneh (2000) described attitudes as "latent or inferred psycho-social processes that lie dormant within one's self, unless evoked by specified referents" (p. 212).

Whatever the preferred definition of attitudes, it is clear they are driven by people's values and they influence (amongst other things) our beliefs and behaviour towards people with disabilities.

The effect of attitudes on people with disabilities

In a number of studies examining attitudes towards people with disabilities it has been reported that attitudes towards the disabled tended to be, by and large, negative (Gething & Wheeler, 1992: Levy, Jessop, Rimmerman, Levy & Francis, 1993). Negative attitudes are not just limited to those who have little experience or knowledge of people with disabilities, as Brillhart, Jay and Wyers (1990) discovered of those individuals or practitioners who work directly with people with disabilities. However, Junco (2002) concludes this is largely a burn-out/stress response due to situations where there is intense ongoing interaction between practitioners and individuals in their care with often severe or multiple disabilities. Overall, however, negative attitudes lead us to marginalise or discriminate against others.

In cases where the attitudes were more positive it was discovered that these individuals had had contact with people with disabilities (Levy, 1992; Kregel & Unger, 1993). Contact with people with disabilities, therefore, enables employers to overcome the fear

of the unknown, to understand and appreciate the abilities of others and to realise that blind people are similar to themselves.

Problem statement

Research into employers' attitudes towards employing people with disabilities has been carried out over 50 years or more. Lyth (1973) records the earliest research in 1949, conducted by Noland and Blake, who identified a number of elements of the employer role and how these related to attitudes regarding employing disabled people. Most of the research examines employer attitudes towards employing the disabled as a generic group rather than individual disabled groups. While this research is very useful it does not provide many answers to the question of why some disabled groups are less favoured by employers than others. Those who have examined individual disabled groups (Chism & Satcher, 1997) have done so by examining employers' attitudes to employing those with severe disabilities, e.g. intellectual disabilities or psychiatric disorders.

Of interest, and pertinent to this study, was research conducted into employers' hiring practices and perceptions towards employing people of different disabilities (Gilbride et al., 2000). This research identified that people with moderate to severe intellectual handicaps and those who were blind or vision-impaired were the hardest of 14 disability types to employ. However, the study did not go to the next level to find out why this was the case.

No research that I have found has studied employer attitudes to employing blind people specifically, other than one unpublished New Zealand study (Waby, 2003). Research that examines blind employment (both peer reviewed and informal) has focused its attention on understanding the level of blind employment in comparison with that of non-disabled employment (Beatson, 1981; La Grow, 2002) and understanding the perceptions of the blind on the barriers to gaining employment, e.g. employer attitudes (Waby, 2003; Maurer, 1995; Dick, 1998; Millman, 2001; Crothall, 2004).

Researcher's interest

The researcher's interest in this topic is generated through work responsibilities at the Royal New Zealand Foundation of the Blind (RNZFB). The division for which the

researcher has responsibility undertakes employer awareness and provides an employment placement service for blind and vision-impaired members of the Foundation. The anecdotal evidence points to employer discrimination towards blind and vision-impaired people. Assuming this current study ratifies this, it is hoped that as a positive outcome the study will provide a clearer understanding of employers' fears and misconceptions, so that the Foundation can target and design appropriate awareness activities to help break down negative attitudes within the business community.

RESEARCH OBJECTIVES

Purpose of study

My interest is in the blind community, which the research of the literature has shown to be in the less favoured groups of job applicants that employers are willing to employ. None of the research has addressed why this is the case. The purpose of this study is to investigate in depth the attitudes and perceptions of employers towards hiring people with disabilities and in particular the blind and vision-impaired.

Research aims

The aim of my research is therefore to ascertain if blind and vision-impaired people are less favoured (in comparison with other disability groups) as potential employees in New Zealand firms and to examine employer attitudes and perceptions towards employing blind people, what these attitudes and perceptions are and how or why they influence employers to overlook the blind and vision-impaired when employing staff. This aim can be broken down into four key components which are:

1. To understand and measure employer attitude differences towards hiring persons with specific disabilities.

2. To explore the origins of attitudes and perceptions towards people with disabilities (particularly the blind), for example are they based on myths or lack of knowledge?

3. To discover if there are interrelated demographic factors that predict attitude towards blind and vision-impaired people.

4. To develop relevant recommendations that mitigates any intrinsic discriminatory attitudes towards blind and vision-impaired people.

RESEARCH SEQUENCE

This introductory chapter is concluded with an explanation of the research report providing an overview of the research process, results and discussion. The structure of this study was a survey of employers to establish their attitudes towards blind and vision-impaired people, including their propensity for hiring them as employees.

Chapter 2 – Review of the literature, focuses on six key areas. The first is an overview and explanation of attitudes and the theories of attitude development. Secondly, the literature on employer attitudes towards employing people with disabilities is discussed and contrasted. Thirdly, the extent to which employer attitudes towards employing disabled people differs between the wider physical disability group and individual groups (in particular the blind) is examined. This is followed by a discussion of the employment barriers and employer attitudes experienced by the blind and vision-impaired and then how the attitudes contributing to barriers can be changed. Lastly, what further research is required to understand why employers prefer to employ people with certain disabilities over others is discussed.

Chapter 3 – Methodology, provides the detail of the methods the researcher used to assess employers' attitudes towards blind and vision-impaired people and their perceptions and hiring practices regarding the employability of people with disabilities. This chapter also discusses the development of the survey instrument, data collection methods and the research hypotheses.

Chapter 4 – Findings, details the findings of the research. The chapter begins with a general overview of the findings, then a description of the demographics of the participants, their companies and history of employing people with disabilities. The second part of the findings reports on the results of the employer hiring practices and perceptions survey which includes which disability types are rated as most employable through to those not easily employable. Some comparisons are provided between disability groups including which disability types are preferred for which types of jobs. The third part of the findings chapter reports on the attitudes towards blind persons scale and whether the variables such as age, gender and contact with people with

disabilities influence attitudes. Lastly this chapter presents the results against the research hypotheses.

Chapter 5 – Discussion, this last chapter analyses the results of the survey highlighting the dichotomy between attitudes and employment of blind and vision-impaired people. This chapter also examines possible explanations for employers' attitudes and what barriers these attitudes present for blind and vision-impaired people. Recommendations are also made regarding how to change attitudes and support employers to change and move forward in their disability employment practice. Lastly, the chapter concludes with general conclusions and limitations of the research, the implications of the study and suggestions for further research.

Chapter 2

REVIEW OF THE LITERATURE

Introduction

This literature review examines firstly the issues around attitudes, their development and associated theory, including the influence attitudes have on our beliefs and behaviours. Secondly, the attitudes towards people with disabilities are discussed along with any specific studies that examine attitudes towards the blind and vision-impaired. These attitude studies are compared and contrasted in terms of their emphasis towards a global or individual perspective. Thirdly, the literature relating to barriers to the employment of blind and vision-impaired people is examined, including an examination of attitude change.

Attitudes, development and theory

"An attitude is an idea charged with emotion which predisposes a class of actions to a particular class of social situations" (Triandis, 1971, p. 6). This definition was further explained by Triandis as comprising three components of attitudes: cognitive, affective and behavioural. These components can be further explained as follows:

1. Cognitive - is an idea which is usually a category used in our thinking, e.g. "dogs", which is a category we use to describe many breeds of dogs.

2. Affective - is the emotion which charges the idea, i.e. feeling "good" or "bad" about a category. For example, if we feel good when thinking about dogs we have a positive affect component towards them.

3. Behavioural - is our predisposition to action, e.g. walking, feeding and petting a dog.

We need to develop attitudes because they help us to summarise the complex environmental information we are constantly faced with.

The majority of writers appear to agree that attitudes are learned. Therefore we can deduce that attitude learning, retention, and decline of an attitude is no different from

learning a skill such as knitting, sewing or reading and writing. These skills involve the problems of perception and motivation as does attitude development (Doob, 1971). Brewster Smith (1973) discussed a theory that suggested six ways in which we acquire information that contributes to the formation of attitudes. These are:

- Blind trial-and-error
- General perception
- Perception of others' responses
- Perception of the outcomes of others' explorations
- Verbal instructions relevant to behaviour
- Verbal instructions about objects' characteristics

Attitudes are learned in a variety of ways throughout our lifetimes, although the majority of attitudes are learnt in our childhood years (Livneh, 1982). Attitudes can be both positive and negative (Yuker, 1994; Livneh 1982 & 1998; Antonak 1988; Antonak & Livneh, 2000).

Attitudes are formed through ways such as sociocultural conditioning and childhood influences (Livneh, 1982). Yuker (1994) also suggests attitudes towards disabled people are part of an attitude cluster that is a function of several types of variables including:

- the non-disabled person's characteristics,
- the perceived disabled person's characteristics and behaviour, and
- other variables such as context, group norms and method variables.

However, are attitudes a predictor of behaviour? This is a question that has been pondered by many researchers. Eccles and Six (as cited in Bohner and Wänke, 2002) undertook a comprehensive meta-analysis of attitude-behaviour studies which analysed research between 1927 and 1990. The studies reviewed were

> ...categorised according to the behavioural domain that they examined, and the mean correlation between attitude and behaviour was computed separately for studies in each category. The results indicated that attitudes do predict behaviour, albeit with differing accuracy. In some domains, such as altruistic behaviour or family planning (and work, researcher comment), correlations were low to moderate, whereas in other areas, for example using (both legal and illegal) drugs, the predictive power of attitudes was substantial (p. 222).

This study implies certain situations foster greater consistency between attitude and behaviour and highlights that particular attitudes or behaviours are more strongly linked than others.

Employer attitudes

The majority of research into employer attitudes towards employing people with disabilities has been conducted in the United States. Wilgosh and Skaret (1987) conducted a literature review relating to employer attitudes towards hiring individuals with disabilities. They concluded:

1. In some cases, employer attitudes were negative and thus likely to inhibit the employment and advancement of people with disabilities.

2. Employers attitudes differ towards employing people with different disabilities, and particularly

3. employers were least likely to employ people with an intellectual handicap or those who were blind.

4. Prior positive contact with people with disabilities was related to favourable employer attitudes; and

5. a discrepancy existed between employers' expressed willingness to hire applicants with disabilities and their actual hiring practices.

6. Training or educating employers on disabled peoples' capabilities and skills was important.

In the same year Greenwood and Johnson (1987) studied employer perspectives on workers with disabilities and employers' willingness to hire job applicants with disabilities. The researchers found that:

1. Employers from bigger companies reported more positive attitudes than those from smaller companies.

2. In a number of studies respondents with higher levels of academic achievement expressed more positive attitudes than those with lower academic achievement.

Hernandez (2000) reviewed the body of literature from 1987 to 1999. All in all this included 37 studies published after the 1987 reviews of Wilgosh and Skaret, and Greenwood and Johnson. The research by Hernandez identified that researchers have examined the attitudes of employers in two distinct ways. These are:

"Global" - where researchers evaluated the general area of employer attitudes to the employment of people with disabilities but did not cover individual employers' planned actions or intentions. Generally the results of these pieces of research demonstrated positive employer attitudes towards employing workers with disabilities.

"Individual" - where researchers evaluated more specifically employers' attitudes regarding their intentions not to hire people with disabilities. In general the results of this type of research demonstrated more negative employer attitudes towards workers with disabilities.

Attitudes towards individuals with disabilities

Global attitudes

Hernandez concluded that when employers were asked about the overall concept or philosophy about employing people with disabilities they were very positive in their responses but that this did not translate into individual actions to employ disabled people. their words were "these findings suggest that there appears a thin veneer of employer acceptance of workers with disabilities" (Hernandez., 2000, p. 3). This may give a clue as to why some disability groups (those with mild conditions or easily accommodated in the workplace) are favoured by employers over others and why those who appear in the 'too hard basket' or with more severe disabilities are less likely to be employed.

Levy et al. (1992) undertook a "global" mail questionnaire study of Fortune 500 executives of industrial and service organisations to assess their attitudes to employing people with severe disabilities. Three hundred and forty-one questionnaires were returned. Results concluded that attitudes were mainly favourable and that the level of disability acceptance was influenced by whether or not the person hiring had experience of working with someone with a disability. This research did not examine company policy on hiring people with disabilities or present different potential disabled

employee scenarios to assess why a company would or would not employ a particular employee with a certain disability.

Kregel and Unger (1993) studied employer perceptions of the work potential of individuals with disabilities. This research interviewed 46 employers who had hired or supervised supported employment participants. A Likert scale and some open-ended questions were used to assess attitudes. The results were generally positive regarding the employability of people with disabilities who were participating in a supportive employment programme. Like the 1992 Levy et al. research, this demonstrates that people who had had contact with disabled people (who in this case had been hired by them) showed positive attitudes. Again this research is very global in its perspective and does not address employer attitudes towards people with particular disabilities.

Goss, Goss and Adam-Smith (2000) researched disability in employment as it relates to the UK disability legislation. As part of this research a mail questionnaire study was conducted of employer disability awareness amongst private sector enterprises. One hundred and eighty questionnaires were returned. In explaining the low employment rates of disabled people across various companies (which would have ordinarily been expected to have much higher levels of disabled employees) the authors articulated what is often perceived as the key reason why disabled people are under-represented in employment:

> However, this is unlikely to be the complete explanation, to the extent that such labour-market 'invisibility' may be part of a more complex 'chicken and egg' situation: disabled people often do not apply for jobs with 'conventional' employers because previous experience of actual, or perceptions of likely, discrimination make such efforts appear futile (in addition to the emotional distress resulting from unfair treatment). Certainly there is no shortage of evidence that discrimination against disabled job applicants and serving employees who become disabled is widespread (Barnes, 1991, 1992; Brisenden, 1989; Hales, 1996; Barton, 1996). In this respect it is not a 'shortage' of disabled people that is at issue but the absence of good practice among employers that limits the labour-market choices of people with disabilities (Goss et al., 2000, p. 817).

A recent Australian study of 643 employers (Graffam, Shinkfield, Smith & Polzin, 2002) examined the factors influencing employer's decisions on hiring and retaining individuals with disabilities. This study found there were four key influences on employer's decisions to hire people with disabilities. These factors were those related to

the disabled person themselves (grooming, hygiene, being able to undertake the tasks etc.): management factors (concerns about terminating people, reluctance to take a chance, assistance available etc.), costs (extra supervision, training, productivity, workplace modifications etc.); and social factors (other staff being able to work with the person, effective disability awareness programmes, lack of social integration in the work place etc.). While this study examined factors influencing employment of people with disabilities, presenting some interesting and useful results, it did not examine factors related to the employment of individual with different disabilities.

The commonalities of these pieces of research are that they assess global attitudes, use local and national employer samples, focus very much on disabilities in general and not on an analysis of attitudes towards employing people with individual disabilities, and they used standardised scales to assess attitudes.

Individual attitudes

A New Zealand study by Bascand (1987) considered employers' attitudes towards the employment of people with disabilities in the Wellington area. Of a sample of 250 employers, 139 employers returned a mail questionnaire. Of these 39 were deemed ineligible, leaving 89 eligible respondents. Of the respondents, 59 were also interviewed face-to-face. Of those companies who had hired people with disabilities, only 2.8% were blind or vision-impaired. Employers were asked whether the nature of the disability affected selection criteria and placement into specific positions. Employers felt they could employ people with certain disabilities into certain jobs, however they tended to classify disabled persons into specific job areas. Also employers were asked if there were any disabilities their company excluded and the reasons for these exclusions. The most prevalent disability excluded was blindness. This was due to perceived problems with safety and the detail of the work concerned.

Chism and Satcher (1997) surveyed 147 human resource management students to assess their perceptions of employment factors and how these may impact on their decisions to employ people with disabilities compared with their individual knowledge of the ADA (Americans with Disabilities Act, 1990, USA Congress), personal relationships with people with disabilities or having a personal experience with disability.

This study did address some individual disability groups including blindness. The results indicate that the higher the knowledge or preparedness for the ADA the more positive they were in their attitudes towards people with disabilities. However it is in this study that the first indication is found that students are just as prone to stereotypical thinking about individuals with certain disabilities. In particular, the most significant negative perceptions were found towards those who were blind, epileptic and with cardiovascular disease.

Gilbride et al. (2000) recognised that disabled people find it difficult to attain employment and often feel excluded because of their disability. The research therefore concentrated on discovering, in more depth, the attitudes of employers towards hiring people with disabilities. Two hundred employers were telephone surveyed. One of the key questions addressed in the research was employers' attitudes towards hiring people with specific disabilities. This question was answered by asking employers to list the jobs most often filled by external applicants. Then they were asked to assess 14 different disabilities and there suitability for each job they identified. Results showed that employers thought it would be easier to fill these positions with people with cancer, heart impairment, or living with HIV. These same employers also indicated that it would be more difficult to hire persons with moderate or severe 'retardation' or persons who were blind for the same jobs. This research also confirmed that those employers who had some experience with people with disabilities were more inclined to employ them. It was interesting to note that of those disabled employees, blind people were the least likely to be employed all across the United States. This research was limited because it was confined to those companies which had employed people in the past from the Vocational Rehabilitation Agency, and it also failed to address why employers held these views regarding employee suitability.

In 2002, jobability.com, a job site for disabled people, commissioned Ipsos UK to research employers' attitudes towards employing disabled people. One thousand telephone interviews were conducted with employers in companies with 15 employees or more in various industries across the UK. The research did examine the employers' individual attitudes to employing people with disabilities in 'their' companies but failed to examine the differences in attitudes towards the different disability groups. However, this research did identify that 76% of employers said "opportunities to employ disabled people have not arisen yet" and 44% of the employers said the reason

was that "the type of work is not at all suitable for disabled people". Nearly one in five said that other people's attitudes had an influence on whether or not they chose to employ disabled people.

These studies illustrated the concern felt about employing persons with certain types of disability even though the studies used different measures and methods. The majority of these studies focused on specific disabilities and not 'global' disability. They therefore examined specific employer attitudes towards people with different disabilities and their willingness to employ them. In most cases employers were less willing to employ those people with intellectual and psychiatric disabilities, closely followed by blindness. These studies all failed to examine why employers held the attitudes identified in the studies.

Employment barriers and employer attitudes towards blind people

In the past four years three pieces of local New Zealand research have been undertaken on the blind in employment and one on people with disabilities in employment. Three of these are published and one not. Two further Canadian studies have identified the barriers and employer discrimination towards blind and vision-impaired people.

In 2002 La Grow undertook, on behalf of the Royal New Zealand Foundation of the Blind, a study of its working-age members. This study examined the participation of blind people in the workforce. Of the 150 working-age members who participated in the survey, between 14% and 24% were unemployed.

Of those working in paid employment, many (47.5%) were in part-time jobs and between 9% and 28% self reported that they were underemployed when considering either their abilities or qualifications or their remuneration level (La Grow, 2004).

The blind and vision-impaired people were employed in a wide variety of occupations, as one would expect in any society. Jobs ranged from service sector positions, to unskilled labour, professional, management, sales and clerical positions. The majority of people worked in the private sector (46%), some were self employed (29%) and some worked in the public sector (24%) (La Grow, 2004).

Factors affecting an individual's ability to gain and retain employment were further researched by La Grow in 2004. The factors affecting employment hinged on three

main variables. These were the amount of usable vision, the additional complication of other health conditions and the age at onset of blindness. Other variables such as age, gender or level of education and preferred reading medium had no effect on the prospects for employment. However, women with the least amount of vision were the group most likely to be unemployed.

Barriers to employment, retaining employment or advancing in careers featured significantly and affected 80% of participants in their efforts to gain and retain employment (La Grow, 2004). While there were many different barriers, the most common were vision impairment and complications arising from it which hindered doing the job itself. Other common barriers were discrimination, not being able to drive or general transport problems, and employer attitudes and ignorance. This study was an important first step in understanding the barriers experienced by blind and vision-impaired people. This study was limited in that it did not explore the barriers from the employer's point of view.

The findings of La Grow (2004) were confirmed in three further New Zealand studies. The first was an unpublished study (Waby, 2003) on perceived implications of employing blind and sight-impaired New Zealanders. Waby's study examined employers' views on employing blind and vision-impaired people and investigated the barriers to employment of blind and vision-impaired people from the employer's perspective. Waby mail-surveyed 125 employers from a wide variety of organisations and industries. Fifty-three (42%) completed questionnaires were returned. Some (26%) had employed people who were blind or vision-impaired, 74% had not. A number of employers gave their reasons for hiring a blind and vision-impaired person. The majority of these made positive comments about the employees concerned. Employers who had not employed a blind or vision-impaired person gave a variety of reasons why:

- Not being able to do the job (particularly not being able to read paper instructions or files, not being able to read computer screens and not being up to required standards)
- No blind people had applied
- A driver's licence was required
- Cost of adaptations to the employer
- Not being able to comply with health and safety requirements
- Staff resistance

This research has provided a good platform for beginning to understand the concerns of employers and their limited understanding of the skills and abilities of blind and vision-impaired people. The limitations of this research were the sample size and the fact that the employers were aware the research was being conducted by the RNZFB which could have introduced some social desirability responses to the questions. Lastly, this research did not examine the employer attitudes underlying their hiring decisions.

The second was a study undertaken by Crothall (2004) where 22 totally blind employed New Zealanders (people with no usable vision and a reliance on mobility aids such as a cane or guide dog) were interviewed. The study focused on examining employment barriers experienced and how these were minimised or overcome. The five key barriers identified by participants were:

- Negative attitudes and ignorance of employers (100%)
- Access to adaptive equipment (77%)
- Gaps between periods of employment (60%)
- Underemployment (55%)
- Difficulty gaining employment for which participants were qualified 46% (Crothall, 2004)

Note: the percentages have been rounded

Interestingly, Crothall also explored the success factors for participants in gaining and retaining employment. These included:

> "(1) adapting to and accepting vision impairment; (2) the ability to deal with frustrations relating to such things as other people's attitudes and equipment difficulties; (3) having good mobility and people skills; (4) knowing one's limitations but being prepared to be flexible and take risks; (5) being determined; (6) seeking vocational advice from the RNZFB and Workbridge; (7) being happy with achievements but not being so satisfied that achievement stops; and (8) remembering that everyone makes mistakes - it's not always because of blindness" (Crothall, 2004, p. 48).

Not surprisingly, the key thing that participants said in response to a call for ideas on what would mitigate the barriers, was the removal of the negative attitudes of employers. Crothall's study (2004) reinforces the view that employers do hold negative attitudes to people with disabilities (Chism & Satcher, 1997; Gething & Wheeler, 1992; Hernandez 2000: Hernandez, keys & Balcazar, 2004; Gilbride et al., 2000) and to some disability groups more than others (Gilbride et al., 2000; Chism et al., 1997; Wilgosh &

Skaret, 1987). This research has certainly identified barriers from the blind person's point of view; however, this research does not explore what the actual attitudes of employers are and their origins.

The third was a national study conducted by Jensen, et al. (2004) on disabled participation in the workforce and whether the type of disability influenced the prospects for employment. The Jensen et al. study (2004) reviewed two Statistics New Zealand surveys: the 2001 New Zealand Disability Survey and the 2001 Household Labour Force Survey. The results of this study identified that those with severe vision disabilities were the people employers would have the most difficulty accommodating in their workplace. This study was a comprehensive examination of disabled participation in the workforce and the first New Zealand study to identify people with severe vision disabilities as the least employable from the employer's perspective. While this study was based on existing research, it has provided us with a good starting point from which to launch further studies.

Lastly, a study undertaken by Barclay (2003) surveyed RNZFB members and conducted focus groups to discuss employment participation and the barriers faced by blind people seeking employment. The results of this study highlighted the low employment rates of blind people in comparison with those of the general population and the significant public and employer attitudes and lack of disability knowledge that put up barriers to their participation in the workforce.

A recent study undertaken by the Canadian Institute of the Blind (Simpson, Gold & Zuvela, 2005) surveyed 352 blind people on their needs. Part of the research explored employment and barriers to employment. By far the most common barrier was employer attitudes. Twenty-seven percent (27%) of working-age participants reported that employers "do not see the blind applicant's potential and another 26% reported that employers are simply unwilling to hire someone with vision impairment" (p. 1).

Changing attitudes

Many studies have been undertaken to assess whether or not it is possible to change attitudes. Junco (2002) undertook a study to assess the ability of an online training programme to change attitudes towards students with disabilities. Junco found that the

online training did make a difference in that it made attitudes more positive towards individuals with disabilities.

How do we change attitudes? (Triandis, 1971) described a number of ways attitudes can be changed. These can include:

1. Education/information from mass media or individuals which affects the cognitive component of attitudes. An example is the change in attitudes towards people with HIV/AIDS as a result of extensive public education programmes over the past 10 years or so.

2. Direct experience with attitude "object", i.e. the person or persons with disabilities.

3. Forcing an individual to behave in ways that are different from their existing attitudes, i.e. through legislation such as non-discrimination measures in the Human Rights Act (1993).

4. "Fait accompli" changes, meaning once an event has taken place, attitudes change to become consistent with the implications of the event, e.g. opposition to the invasion of another country but afterwards people tend to support it.

5. Counselling or psychotherapy can increase insight and change negative attitudes by providing positive reinforcement for certain more positive attitudes.

In terms of changing employers' attitudes towards hiring people with disabilities, Gilbride, et al. (2000) referred to evidence in five studies which suggested that if effective interventions are made, employers' receptivity towards hiring people with disabilities can be improved. However this was tempered by the suggestion that 'change' professionals must have more complete and accurate data about employer needs and attitudes to effectively design and undertake attitude change programmes.

While we might think that changing attitudes is easy, the amelioration of negative attitudes (Triandis, 1971; Yuker, 1994; Livneh, 1982, Wicker, 1971) is in fact a difficult process, especially if the underlying principles of attitude function, development, and rationale are not addressed. Identifying these underlying dimensions is crucial to effective programme development to alter or improve negative attitudes. It is necessary

to define what types of attitudes exist, among whom and to what degree, before beginning the process of course development. Festinger also wisely suggests that attitude change will not disappear unless "the environment is supportive of the behavioural change that accompanied attitude change. He argued that what developed the attitude in the first place continues to act on the subject, and he is likely to go back to his earlier attitude unless there is some real environmental change that sustains his new attitude" (cited in Triandis, 1971, p. 88).

Summary

In general the research discussed has shown that attitudes are learned and are a combination of cognitive, affective and behavioural components that help us to summarise the complex environmental information we are faced with daily. In some instances attitudes are predictors of behaviour but in other areas such as employment or hiring practices they are not. While changing attitudes is possible, it is not easy. A number of studies suggest that if effective interventions are made which address the underlying principles of attitude function, development and rationale the change process will be successful.

In terms of employer attitudes towards people with disabilities, it can be concluded that employers had positive attitudes towards employing people with disabilities in the "global" sense. They were less positive in those research studies that examined specific individual attitudes towards particular disability groups. Both of these attitude trends were positively influenced if the employer had prior contact with people with disabilities. There was, in the research on individual attitudes, an overt expression of a preferred disability type. For example, employers were more willing to employ those with physical disabilities than those who were blind or those with intellectual or psychiatric disabilities. This is supported by recent studies that found unemployment was high for blind and vision-impaired people in comparison with other disability groups and the general population. Employers also found it more difficult to employ them, and blind and vision-impaired.

Gaps

The research examines attitudes towards people with disabilities as a group. One study examines employers' potential hiring practice which provides some valuable insight into employers' attitudes towards hiring people with a variety of disabilities. However,

the research examined neither illustrates the extent to which employer attitudes stem from personal experience, misconceptions and stereotypes, lack of disability "ability" information nor how the disabled employees' special needs can be met. Secondly the research does not tell us why some disability groups are favoured over others.

The researcher's interest is in the blind, which this research has shown to be in the less favoured groups of potential. None of the research examined has addressed why this is the case. There is a lack of international and more specifically New Zealand research that examines employer attitudes towards hiring blind and vision-impaired people. However, there are a number of excellent New Zealand studies which examine employment levels of blind and vision-impaired people and barriers experienced by them in seeking, gaining and retaining employment. Therefore this current study examines employer attitudes towards employing blind people, what they are and why these influence employers to overlook the blind.

Given the lack of research into why specific disabled groups are favoured over others, and what and why particular attitudes may lead to such favouritism, this research will have some significance in addressing these research gaps.

In particular this study will contribute to the overall body of knowledge in the disability and business sectors by increasing our knowledge and understanding of these pervasive attitudes. This hopefully will lead to the discovery of mechanisms and strategies to change these attitudes and in the long term decrease discrimination towards blind people and people with disabilities in general and increase the numbers of blind people gaining and maintaining meaningful employment. This will be of immediate benefit to the Foundation of the Blind and their efforts to break down employment barriers, thus allowing the employment of blind and vision-impaired people. Ultimately the blind and vision-impaired job seekers of New Zealand will be the greatest beneficiaries in their quest for meaningful employment.

It is also hoped that this research will influence public policy in the equal employment opportunities area and contribute to developing new strategies for implementing the New Zealand Disability Strategy (2001) and Pathways to Inclusion Strategy (2001).

Chapter 3

METHODOLOGY

This study was designed to measure attitudes of employers towards hiring individuals with disabilities and particularly whether those who are blind and vision-impaired were less favoured than other disability groups. Secondly this study assesses employers' attitudes towards blind and vision-impaired people as a specific disability group. This chapter contains an explanation of the methods and procedures used in the conduct of the research.

Measurement of employer attitudes towards employing people with disabilities

Measurement of attitudes towards people with disabilities utilises various forms of disability scales. The Attitudes Towards Disabled Persons scale (ATDP) (Yuker, Block & Campbell, 1960) is probably the most well known. Others include the Interaction with Disabled Persons Scale (IDP) (Gething, 1994), Modified Issues in Disability scale (MIDS) (Makas, 1985), Scale of Attitude Towards Disabled Persons (SADP) Antonak, 1981).

The ATDP scale, which appears to be the most widely used, consists of three forms, form A, form B and form O. Form O, the most widely accepted, has been modified as part of this study, and consists of 20 items scored on a six-point Likert scale. The scale scores range from +3 (I agree very much) to -3 (I disagree very much). Scores can range from 0 to 120. In this study the scores were converted to a scale of 1 to 6 with 1 being "disagree very much" and 6 being "agree very much". The lower scores on the ATDP indicate more negative attitudes towards people with disabilities.

However the ATDP scale and other disability attitude scales rely on unidimensional measures of affect towards the "disabled". Those developing such scales seem to assume consistent "bias potential" within and even across disabilities (Thomas, 2001). "The approach also often makes the unlikely assumption that individuals with vastly different disabilities are perceived equally by the non-disabled" (p. 1).

In the current study, questions from the ATDP scale were modified to reflect blindness rather than unidimensional or generic disability and combined with some questions from the Attitudes to Blindness scale (AB) (Cowen, Underberg & Verrillo, 1958). The overall number of questions was reduced from 20 to 16.

The modified form was piloted with 12 employers. After obtaining the pilot data, a group, including the research supervisors, reviewed the results and comments from employers and made recommendations to improve the instrument. Some items were reworded to reduce potential ambiguity, the structure modified and some questions were removed and new ones added. The revised instrument was then reviewed again and retested on two employers to verify the validity of the changes made.

The final form was then validated using SPSS, the pre-test validation function, which found the modified scale utilised was reliable as it scored an alpha score of 0.849 which is greater than the 0.70 alpha score considered reliable. This is in line with Yuker and Hurley's (1987) conclusions which suggest a reliability alpha score of between 0.79 and 0.89 for the ATDP scale. A further test, an inter-item correlation matrix (Cronbach's alpha) was conducted to ascertain if the impact of removing each or any item would improve the reliability of the instrument. This resulted in none of the items having an improving influence on the total reliability of the instrument. The alpha scores ranged from 0.82 and 0.84.

Attitude scales have been scrutinised and questioned as to their validity in recent years. Some have sought to prove that research participants can fake their answers or give what is called the "socially desirable" responses to the questions. Junco (2002) reported on studies undertaken by Vargo and Semple (1984), Hagler, Vargo and Semple (1987) and Cannon and Szuhay (1986) in which all participants who had been asked to fake a more positive score on the ATDP scale found that participants scored significantly more positively than those participants who were asked to answer honestly.

While this bias can never be completely eliminated, the researcher has attempted to ensure that the developed instrument was valid and reliable. Being aware of this potential will assist in the analysis of results of the current study.

Selection of subjects

The UBD business directory was used to select businesses for this study. This directory gives not only the business contact details but also the staff size of each business, its main purpose and business classification. The online version of this database enables the researcher to target regions and businesses of various sizes and classifications. While this took some time, it was extremely efficient and easy to use. The total number of businesses in the research sample was 200.

Subject selection procedure

The method used to select the participants as described by Trochim (2002) was multi-stage sampling including: cluster sampling; probability stratified random sampling; and systematic random sampling.

The three steps in the sampling process are as follows:

1. Cluster (area) random sampling was used by the researcher to more effectively and realistically sample the population that is distributed across a wide geographic region, by dividing the sample population into clusters on a geographical basis. This was achieved by firstly dividing the business in each of the Statistics New Zealand classified regions into size categories (micro/small = 1 – 49 employees and medium/large = 50 employees and above). (See Appendix C). Secondly the population of region was calculated as a percentage of the total country population.

2. A stratified random sampling process was used to select the total number of businesses to be sampled in each region. Stratified random sampling involves dividing your population into homogeneous subgroups and then taking a simple random sample in each subgroup. This comprised three stages:

    a. The population percentage as part of the national population was established for each region, e.g. Northland's population is 140,130 and as a proportion of the total country population it is 3.7%.

    b. Each region's percentage of the national population was used to calculate the total number of businesses to be sampled in each region, e.g. Northland's percentage of population was 3.7%. Of the total

number of businesses to be in the sample of 200, Northland's share was seven (fractions were rounded either up or down as appropriate).

c. As small to medium businesses comprise approximately 90% of all businesses, the regional total sample was allocated proportionately. For example in Northland seven businesses were to be sampled and therefore 90% of those were to be small to medium businesses, which in this case was six businesses. The remaining 10% (or one business) was to come from those businesses in Northland that employed over 50 employees.

3. The selection method for the 200 company sample from the UBD database was achieved by using systematic random sampling in each region and within each stratum (small to medium businesses and large businesses). This is often used instead of random sampling. It is also called an Nth name selection technique. After the required sample has been calculated, every Nth record is selected from a list of population members. For this research an integer of 4 was selected then every 50th business was taken until the total for each region and strata was achieved. In each region and for each strata (to get to the start point for counting the businesses) the first four businesses were skipped and the counting began from that point onwards, which meant the first business to be selected was at count 54, the second at 104, the third at 154 and so on.

Instrumentation

Employer Hiring Practices and Perceptions Survey (EHPPS)

The Gilbride et al. (2000) Employer Hiring Practices and Perceptions Survey (EHPPS) was recently developed to investigate the attitudes and perceptions of employers towards hiring people with different disabilities. The instrument consists of 69 questions divided into three sections. The sections included demographic questions and employer identified jobs most often open to external applicants, including an assessment of how hard it might be to employ individuals with different disabilities for that job, on a five-point Likert scale. The third section examined employer awareness of the American Vocational Rehabilitation Service.

This instrument was repeated minus the third section in the current study because it was irrelevant in the New Zealand context and to the research objectives. The first two sections were utilised to ascertain which disability groups were more employable or less employable than others and, in particular, whether or not blind and vision-impaired people along with those with moderate to severe intellectual disabilities were the least likely to be employed in New Zealand.

Modified attitudes scale (ATDP and AB)

The Attitudes Towards Disabled Persons (ATDP) scale is a 27-item Likert scale which asks participants to rate their agreement or non-agreement to statements on the six-point forced-choice format scale. The ATDP scale is an accepted measure of attitudes that has been widely used in the literature (Antonak, 1988; Antonak & Livneh, 1988; Yuker & Hurley, 1987). Yuker and Hurley (1987) described how the ATDP scale has been extensively studied. Scores on the ATDP scale have shown acceptable split-half reliabilities ranging from 0.78 to 0.81 and *alpha* estimates ranging from 0.79 to 0.89.

The Attitudes to Blindness (AB) scale was developed in 1958 by Cowen, Underberg and Verrillo (Antonak & Livneh, 1988). The AB scale includes 30 questions answered on a four-point Likert scale. Reliability has been shown on the Spearman-Brown corrected split-half reliability coefficient of 0.91.

This current study utilises the two attitude scales (ATDP and AB), which for this study's purposes has been called the ATBP or Attitudes Towards Blind Persons scale. The ATDP was used as the base scale with some questions imported from the AB scale. These were then modified to more particularly include questions that addressed employment of blind and vision-impaired people. This modified scale (ATBP) was used to measure attitudes towards blind people in employment. However, research participants were led to believe that blind and vision impairment was randomly chosen out of all disability groups for the second part of the telephone interview.

Demographic questions

The first section consisted of questions related to the interviewee's role and type of business plus questions regarding whether the person had hired people with disabilities in the past and, if so, additional comments on that experience. This demographic instrument was a repeat of the first section of the EHPPS with the addition of some

specific information that related to the New Zealand situation. This included the Australian and New Zealand Standard Industrial Classification, 1996 (ANZSIC) was used to classify the businesses surveyed. In addition, the second section utilised the Australian and New Zealand Standard Classification of Occupations 2005 (ANZSCO) to classify the two occupations the researcher asked the participants about. The demographic questions comprised in part some variables to be measured in the research, particularly as many previous studies had identified these variables as correlates of attitude towards disability.

Final instrument

The final instrument comprised 67 questions and was divided into three sections. The first and second sections were a direct replication of the first and second sections in the EHPPS (Gilbride et al., 2000).

The first section consisted of eight questions that dealt with general employment data. Questions included the number of employees, job title of the contact person, previous knowledge of employing a person with a disability, number of employees with a disability hired, disability types, accommodations provided, and whether they were glad they had hired a person with a disability.

In the second section, employers identified the job positions "most often" and "second most often" open and typically filled by external job applicants. Employers were then presented with 14 different types of disabilities and asked to consider "how hard do you think it would be to hire a person for this job" for each disability. Perceptions were scored on a five-level Likert-style scale with responses ranging from 1 = "impossible" to 5 = "no problem at all".

The third and last section of the survey examined employer attitudes by utilising the Attitudes Towards Blind Persons scale (ATBP – modified ATDP scale with some input from the AB scale). The ATBP scale consisted of 16 statements where respondents indicated on a six-point Likert scale from "disagree very much" to "agree very much" how true each statement is to them. There is no neutral point on the scale. Three of the items are reverse scored (items 49, 53 and 57). Scores can range from 16 to 96, where the higher scores indicate more positive attitudes towards blind and vision-impaired people.

The third section also included some questions for general statistical purposes. These included questions on age of the respondent, education level, whether or not they had a family member, or previous contact, with individuals with disabilities, the participant's ethnicity and whether or not they would be willing to participate in a later in-depth interview.

Collection of data

Telephone surveys

Based on the Gilbride et al. (2000) EHPPS survey of businesses in the USA and discussion with statisticians at Massey University, a research sample of 200 businesses was established as sufficient to assess the hiring practices, perceptions and attitudes of businesses in New Zealand. The procedures used for selecting the research sample are discussed earlier in the methodology chapter.

The 200 participant businesses were called by telephone. The researcher chose the telephone survey method rather than the postal procedure due to an anticipated better response rate. Interviewers began the survey by asking to speak with the personnel manager or the individual in charge of hiring. They then briefly explained the purpose of the survey, noting the approximate time allotment of 10 minutes. Those who agreed to participate in the survey were then given the option of scheduling a convenient time to complete the survey or completing the survey during the initial phone call. The majority of those who participated in the survey did so at the time of the initial call and a small number made times for a call back.

The 67 questions in the survey were read by the researcher to the participants. In section 2 of EHPPS the answers to "how hard" it would be to hire for Job 1 and Job 2 were rounded up to the next highest whole number; for example, "between 2 and 3" would be considered a 3. The answers to all questions were recorded on paper copies of the survey instrument and the results entered into an Excel database which was then exported, after all data was rechecked and any typing errors were removed, into a statistical analysis package. In addition, all participants were asked at interview if they would be willing to participate in a detailed follow-up interview at a later date. Those who were willing had their name and contact details recorded in a separate Excel spreadsheet.

Personal interviews

Six follow-up interviews were held with randomly selected companies taken from the list of those who were willing to participate in the second stage of the research. The participants were representative of large and small, rural and city-based businesses. Participant consent forms (see Appendix B) were explained and discussed before the interview. If the participants were willing to proceed they signed the consent slip and returned it to the researcher.

The interviews were held at the participant's place of work and typically lasted from half to three-quarters of an hour. The interviews were designed to provide some further details on potential hiring practices and the origins of attitudes that affected hiring behaviour. They were not intended to be used as part of the main analysis but rather to add the substantive comments in the discussion on employers' attitudes and behaviour. The interviews were recorded and transcribed then emailed back to the participants to ensure accuracy of comments and to get final sign-off from the participants to proceed with using the interview material.

Hypotheses

The following hypotheses were developed based on the issues raised through the literature review.

1. Respondents would have unfavourable attitudes towards blind and vision-impaired people.

2. That respondents' demographic factors of age range and gender would not be related to their attitudes towards blind and vision-impaired people. Previous studies did not support either of these relationships.

3. That the respondents' education level would be related to their attitudes towards blind and vision-impaired people. Previous studies support this relationship.

4. It was hypothesised that the respondents' frequency of contact with a blind and vision-impaired person, or whether they had a family member who had a disability, or they had hired a person with a disability would be related to their attitudes towards blind and vision-impaired people.

5. The respondents would perceive blind and vision-impaired people as the least employable of the disability types.

6. Employers would perceive blind and vision-impaired people as unable or unsuitable to perform particular jobs.

Analysis of data

Statistics Package for the Social Sciences version 13 (SPSS 13.0) was used for analysing the survey data including the EHPPS and ATBP scales. The qualitative material from the personal follow-up interviews was used to provide some richness to the study and to clarify issues raised in the findings for discussion purposes.

The analysis has been undertaken by utilising parametric measures rather than non-parametric on advice received from Massey University Statistics department. There is much debate for and against using parametric analysis methods when the research data is ordinal. Usually when analysing ordinal data, non-parametric analysis is employed. In particular, opinion varies regarding whether it is better to use parametric or non-parametric statistical tests on the distribution of responses from Likert-type scales. However, a growing body of researchers are employing parametric testing, which gives a richer form of analysis.

Strictly, a Likert scale is not an interval scale and so the more conventional non-parametric tests should be used. In practice, however, the results of both forms of tests are very similar and so the more familiar and easier to manipulate parametric versions are commonly used. In justification of the parametric test, Bryman and Cramer (2001, pp. 116–117) state that even though attitude scales, as such, would be ordinal (i.e. calling for non-parametric tests), parametric tests are routinely applied to such variables (assuming interval-ratio scaling), arguing that the test applies to the numbers and not to what those numbers signify.

FINDINGS

Overview of findings

A total of 200 company representatives were telephoned of which 102 agreed to participate in the telephone survey. This was an overall 51% participation rate.

A further 44 people stated they were willing to participate in stage two of the research, a follow-up in-depth interview. A random selection of eight people were telephoned and invited to complete follow-up interviews, six of whom agreed to be interviewed.

The telephone survey and personal follow-up interviews were undertaken to test the research hypotheses (p. 29) and answer the research questions (pp. 6–7). To achieve this aim, a number of statistical tests were conducted on the results of both the EHPP and the ATBP scales. The results of these analyses are as follows.

Participant and company description/demographics

Individual participant's description

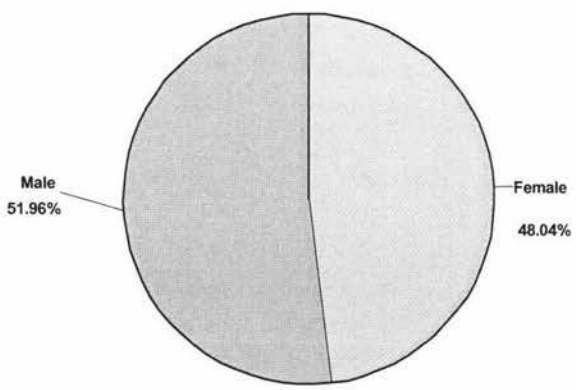

Figure 1: Gender of respondents

The gender of the participants was just about evenly mixed (see Figure 1). However the ethnicity of the participants presented in Figure 2 was representative of New Zealand European or Pakeha participants (87.25%). This would appear to be congruent with the overall country population statistics (European/Pakeha80%, Maori 14.7%, Pacific Peoples 6.5% and Asian 6.6%, *Census of population and dwellings*, Statistics New Zealand, 2001) and more particularly representative of those traditionally in managerial or positions with decision-making responsibility.

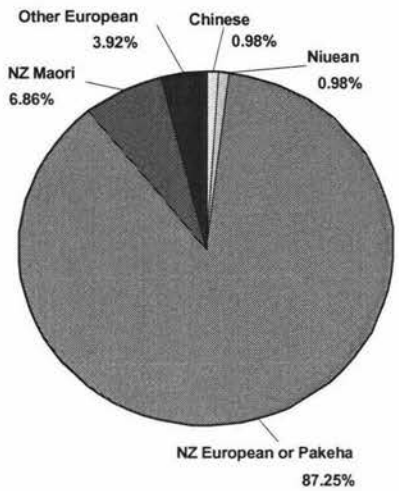

Figure 2: Ethnicity of respondents

In terms of age (see Figure 3) a small number of respondents were aged between 20 and 29 (6.86%) as were those aged over 70 years (3.92%). The largest age groupings of

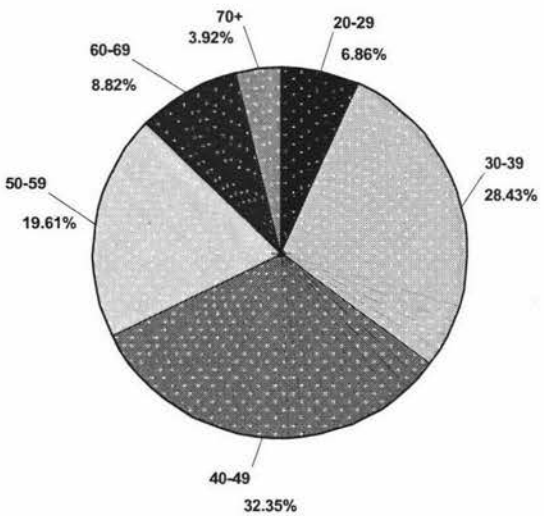

Figure 3: Age of respondents

respondents were those aged between 30 and 39 (28.43%) and those aged between 40 and 49 (32.35%). This was followed by those who were aged 50 to 59 (19.61%) and 60 to 69 (8.82%).

Of the total participants, 57.85% had a family member with a disability and 42.2% did not.

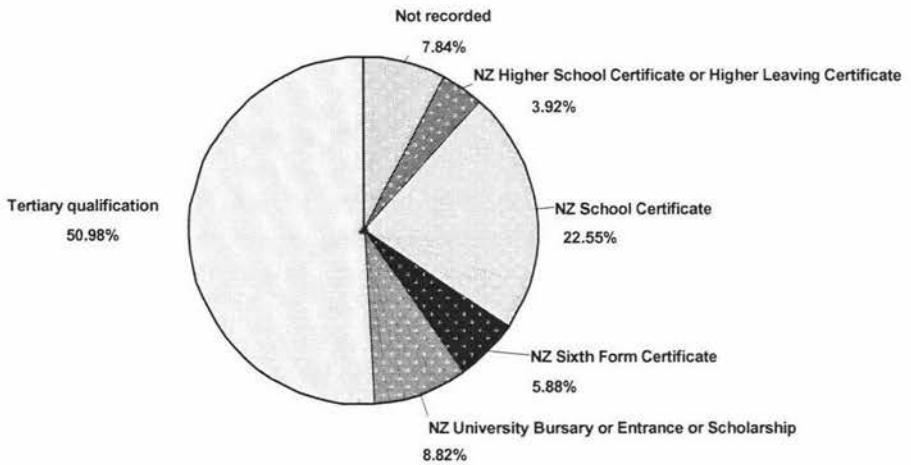

Figure 4: Educational level of respondents

Interestingly, Figure 4 shows there were a high number (50.98%) of participants with a university/tertiary qualification. This is higher than the 2001 Census rate of one in eight people possessing a university qualification. However, this may represent the employers' requirement for human resource or senior staff with hiring responsibilities to have acquired tertiary qualifications.

Business/company description

Participating businesses came from both rural and urban locations: 78.4% were from urban locations and 21.6% from rural areas. Businesses varied in size (based on

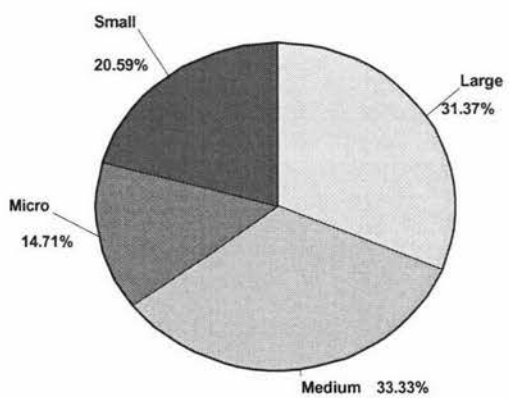

Figure 5: Business size

employee numbers). Figure 5 shows that approximately equal numbers were surveyed in the small/micro, medium and large-sized businesses.

Businesses were representative of a wide cross section of categories as per the ANZSIC standard. The most predominant business/industry category represented in the research sample was manufacturing (17.7%), followed by retail trade (11.8%) and property and business services (10.8%). The following table provides a detailed breakdown of the business types represented in the study.

Table 1: Australian & New Zealand Standard Industry Classification of businesses in the research sample

	ANZSIC classification	No. of participant companies	Percent
Valid	Accommodation	9	8.8
	Agriculture	2	2.0
	Cafes and Restaurants	4	3.9
	Communication Services	5	4.9
	Construction	8	7.8
	Cultural and Recreational Services	1	1.0
	Education	7	6.9
	Electricity	4	3.9
	Forestry and Fishing	1	1.0
	Gas and Water Supply	2	2.0
	Government Administration and Defence	1	1.0
	Health and Community Services	1	1.0
	Manufacturing	17	16.6
	Personal and Other Services	7	6.9
	Property and Business Services	11	10.7
	Retail Trade	12	11.8
	Transport and Storage	7	6.9
	Wholesale Trade	3	2.9
	Total	**102**	**100.0**

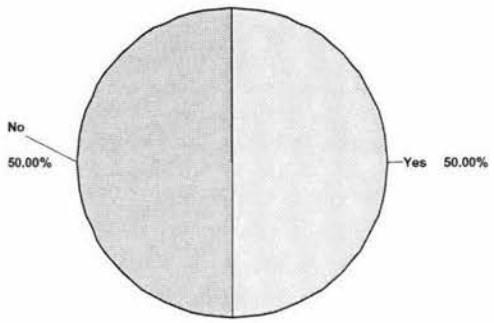

Figure 6: Percentage of respondents who have previously hired employees with disabilities

Surprisingly there was an exact 50%/50% split between respondents who had either hired or not hired people with disabilities (see Figure 6).

Of those who had hired people with a disability, the majority (88.24%) had hired between one and five people (see Figure 7).

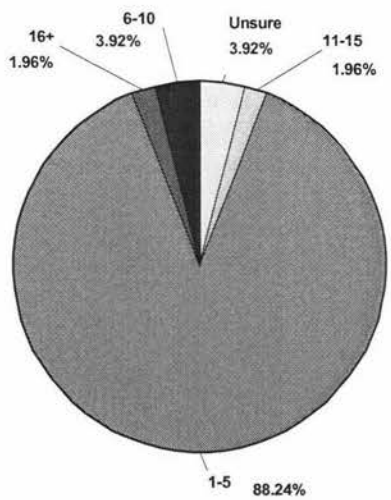

Figure 7: Number of disabled staff hired by respondents who have previously hired disabled staff

Those people who had hired a person or persons with a disability were overwhelmingly (96.08%) pleased to have hired them (see Figure 8).

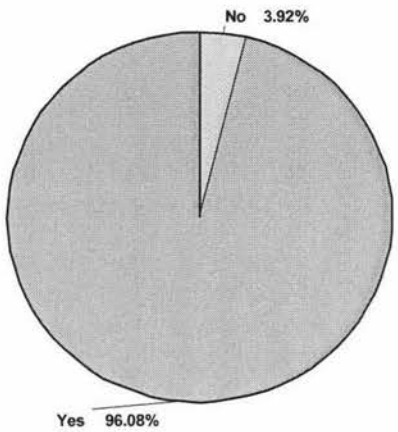

Figure 8: Respondents' satisfaction with having hired an employee with a disability

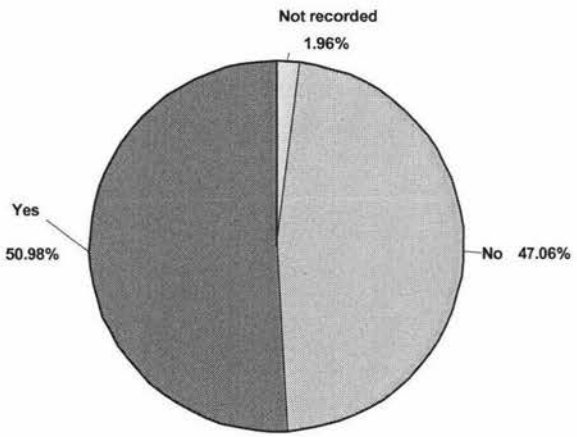

Figure 9: Number of respondents who have made modifications for employees with disabilities

Again, there was an almost even split between those participants who had made and those who had not made some modifications to work environments or work practices for employees with disabilities (see Figure 9).

Employer Hiring Practices and Perceptions Survey (EHPP)

Employers were asked to provide the name of a "job in your company that most often is open and needs external applicants". With this job in mind, they were then asked to consider "how hard do you think it would be to hire a person for this job" if the person has the following disability (14 disability types in total). Employers were then asked to respond on a five-point Likert-style scale of 1 – impossible, 2 – difficult, 3 – moderately difficult, 4 – easy, or 5 – no problem at all. Responses were recorded by circling the appropriate number on the scale for each question. Unsure responses were not entered into the data analysis.

Employers were also asked to "think of the second most often filled job in your company." As in job 1, employers were then asked to consider "how hard do you think it would be to hire a person for this job" if the person has the following disability. Responses to this second set of questions were recorded in the same manner.

Employability ratings for jobs most and second most frequently filled

T-tests were conducted to assess if there were significant differences in employability ratings for jobs most and second most frequently filled, i.e. did employers respond differently to the questions asked regarding employability of people with different disabilities for job 1 and job 2. T-tests test the null hypothesis that two populations are equal. The null hypothesis is where the difference between means is some specified value. In this case the null hypothesis is that the difference is zero or $p > 0.05$. The t-test (see Table 2) proved there was no significant difference (the significance was more than 0.05) in the results for jobs 1 and job 2. Therefore the data recorded in response to the questions for both jobs were combined to create a single measure for each disability type.

Table 2: Disability employability ratings paired samples test for jobs 1 and 2

Pair Number	Disability pairs	t	df	Sig. (2-tailed)
Pair 1	Mild IH - Mild IH	1.933	99	.056
Pair 2	Mod/sev IH - Mod/sev IH	-.729	100	.468
Pair 3	Blind - Blind	-.786	98	.434
Pair 4	Deaf - Deaf	.332	100	.741
Pair 5	Mobility - Mobility	-.840	100	.403
Pair 6	Back - Back	-1.223	100	.224
Pair 7	Arthritis - Arthritis	-1.285	98	.202
Pair 8	Mental illness - Mental illness	.164	89	.870
Pair 9	Emotional illness - Emotional illness	1.029	92	.306
Pair 10	Brain Injury - Brain Injury	-.111	101	.912
Pair 11	Heart disease - Heart disease	-1.084	100	.281
Pair 12	Respiratory disease - Respiratory disease	-1.821	99	.072
Pair 13	Cancer - Cancer	-1.943	94	.055
Pair 14	HIV positive - HIV positive	.000	94	1.000

Disabilities perceived by employers to be more employable than others

Mean ratings provide an indication of what the average is for Likert scale questions. The mean ratings were calculated in this study in order to understand the employability of different disability types for those jobs frequently recruited from external applicants (i.e. jobs 1 and 2 combined).

The results presented in Figure 10 clearly demonstrate that employers thought it would be easier to hire persons with a cancer diagnosis, heart impairment, or living with HIV for the job(s) within their businesses. These same employers also indicated that it would be more difficult to hire persons with moderate or severe intellectual handicap or persons who are blind for the same position(s). This result is totally congruent with the Gilbride et al. study (2000). The following graph illustrates the employability across all disability types. The higher the mean, the more employable participants believed the people with that particular disability to be.

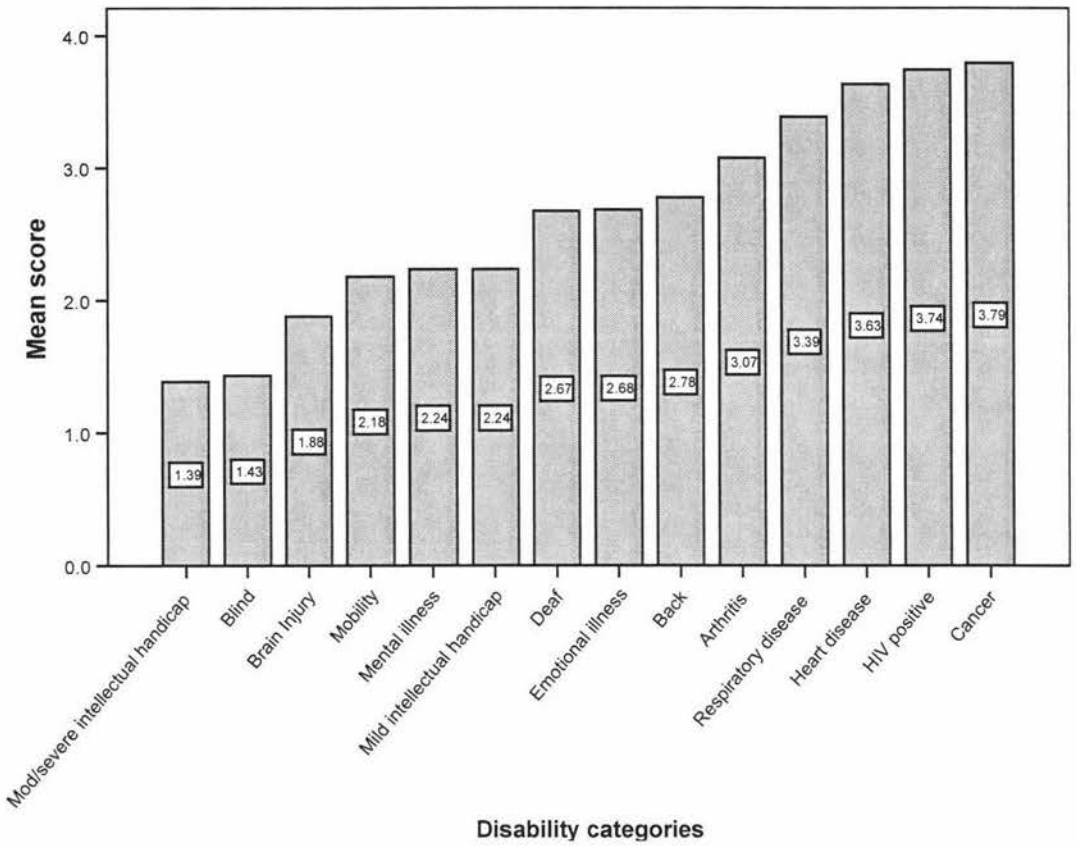

Figure 10: Employers employability rating for each disability type

Comparisons between disability groups

A Levene test is used to test if samples or groups have equal variances. Equal variances of means across samples is called homogeneity of variance. Some statistical tests, such as the analysis of variance, assume that variances are equal across groups or samples. The Levene test can therefore be used to verify that assumption. The Levene test followed by one-way ANOVA was used to assess differences in employability between different disability types and within disability types for two jobs.

These tests (see Table 3) showed that (using the mean disability score as a variable) the Levene test for homogeneity of variances is significant ($p < 0.05$) which means the

population variables for each group are not equal.

Table 3: Test of homogeneity of variance

Mean disability score

Levene Statistic	df1	df2	Sig.
10.994	13	1391	.000

The subsequent ANOVA test shows the F-probability value is $p < 0.05$ indicating significance and that the null hypothesis can be rejected, and therefore the mean disability score is different for all disability groups ($f(13, 1404) = 15.09$, $p = 0.000$ see table 4). However, this does not tell if blindness is different from any other group.

Table 4: ANOVA to test hypothesis of mean disability score between disability groups and within groups

Mean disability score

	Sum of Squares	df	Mean Square	F	Sig.
Between groups	865.245	13	66.557	55.095	.000
Within groups	1680.392	1391	1.208		
Total	2545.638	1404			

To establish whether a disability group is significantly different from blindness, a post hoc test was conducted to discover where the variance or significance lies.

A Dunnett test which is similar to the Tukey test is used only if a set of comparisons are being made to one particular group. A Dunnett test is used to compare each group to a reference category or control. Therefore, in this case, disability groups are compared to blind and vision-impairedness. Thus a Dunnett T3 post hoc test was utilised (testing blindness and vision impairment against all other disability types) using the mean disability score as the dependent variable in the multiple comparisons. This test in Table 5 shows that the p value associated with the comparison between blindness and all other disabilities other than moderate to severe intellectual handicap is less than 0.05 and thus is significant. This finding would indicate that all disability groups other than moderate to severe intellectual handicap differ significantly from one another. This means that the moderate to severe intellectual disability group is most similar to the blindness disability group.

Table 5: Dunnett T3 post hoc test, testing blindness and vision impairment against all other disabilities

Dependent variable: Mean disability score
Dunnett T3

(I) Disability type	(J) Disability type	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Blindness (visually impaired)	Mild intellectual handicap	-.7566(*)	.1250	.000	-1.196	-.317
	Moderate/severe intellectual handicap	.0392	.0940	1.000	-.290	.368
	Deaf/Hard of hearing	-1.2647(*)	.1290	.000	-1.718	-.811
	Mobility (wheelchair)	-.7892(*)	.1437	.000	-1.295	-.284
	Back limitation	-1.3705(*)	.1321	.000	-1.835	-.906
	Arthritis	-1.6634(*)	.1286	.000	-2.116	-1.211
	Mental illness	-.8080(*)	.1249	.000	-1.247	-.369
	Emotional illness	-1.2111(*)	.1283	.000	-1.662	-.760
	Brain injury	-.4559(*)	.1084	.004	-.836	-.076
	Heart disease	-2.1873(*)	.1355	.000	-2.664	-1.711
	Respiratory disease	-2.0084(*)	.1368	.000	-2.490	-1.527
	Cancer	-2.4186(*)	.1383	.000	-2.906	-1.932
	HIV positive	-2.3057(*)	.1516	.000	-2.840	-1.771

* The mean difference is significant at the .05 level.

What types of disabilities are preferred for which jobs?

Further tests were undertaken to assess the influence of particular job categories (based on the Australian and New Zealand Standard Industry Classification of Occupations Standard, 2005) on the employability of blind and vision-impaired people on the EHPP scale results. In this case the Levene test for homogeneity of variances indicates it is significant (0.000, $p < 0.05$) and the population variances are not equal for each group. The ANOVA F-probability value (0.016) is less than 0.05 which means the null hypothesis is rejected and the alternative hypothesis is accepted. The alternative is that there is a significant difference in the employability of blind and vision-impaired people into particular occupations. The significance has been established by using a Dunnett T3 post hoc test. The difference occurs between professionals and machinery operators and drivers, and professionals and labourers (see full test results in Appendix D). The following graph (see Figure 11) illustrates the job categories and perceived employability of blind and vision-impaired people in those roles.

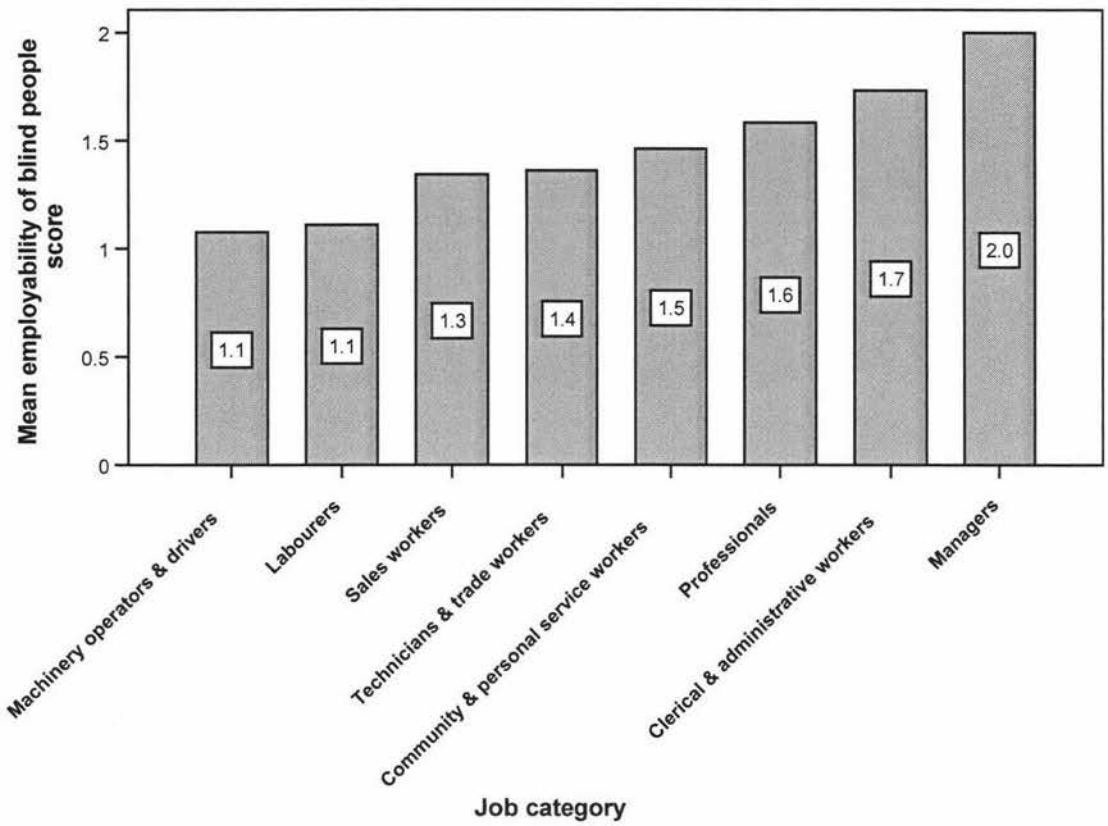

Figure 11: Employers' rating of blind people's employability by job category

Employment potential of blind and vision-impaired people

'Lastly blindness and vision-impairedness was compared with and against all other disability types. The homogeneity of variance is significant at 0.000 which indicates that the population variances for each disability group are not equal. The ANOVA test (0.000) again is significant as it is less than $p< 0.05$ and means the null hypothesis is rejected and it can be surmised that some or all of the other disability groups are different from blind and vision-impairedness regards employability potential. Two tests Dunnett t (2-sided) and Dunnett T3 were undertaken to determine where the significance lay. Both tests indicated that all other disability groups other than moderate/severe intellectual handicap disability were significantly different from the blind and vision-impaired in terms of employability.

Attitudes Towards Blind Persons (ATBP) scale

The second part of the survey instrument examined participants' attitudes towards blind and vision-impaired people. The ATBP scale (see Appendix A) was the instrument used.

Participants were asked a series of questions or items on a scale representing statements that suggested differences (or when rejected, similarities) between blind and non-blind people. The items depict two types of statements, i.e. characteristics of blind people (e.g. personal, social, intellectual, emotional) and workplace treatment modalities (e.g. workplace social integration, ability to perform work duties, safety, etc.).

Respondents either agreed or disagreed with each item on a six-point Likert scale. The scale ranged from 1 = Strongly agree, 2 = Agree, 3 = Not sure but tend to agree, 4 = Not sure but tend to disagree, 5 = Disagree, 6 = Strongly disagree. The scale is a "forced choice" scale as there is no neutral response opportunity provided in the scale. Responses were recorded by circling the appropriate number on the scale for each question.

Scoring the ATBP had to be undertaken carefully as approximately a third of the questions were worded positively with the remainder worded negatively. The first step required was to reverse the scores of all the positively phrased questions. After this was completed all of the responses were summed to give a total score for each participant. The scores on the scale can range from 16 to 96. The higher the score, the more favourable the attitudes are towards blind people.

The results for the ATBP scale indicate the majority of employers have positive attitudes towards blind people. This is illustrated in the following bar and line graphs (see Figures 12 and 13). The mid point on the scale (between 16 and 96) is 56 points. Therefore, for those participants who scored 57 or above their attitudes were considered more positive and for those who scored 55 or below their attitudes were considered more negative. The overall scores on the ATBP scale indicate that 76% (78 participants) of employers had more positive attitudes towards blind people and 25% (24 participants) had more negative attitudes. The spread of results for all participants is illustrated in the line graph (Figure 13) on the following page.

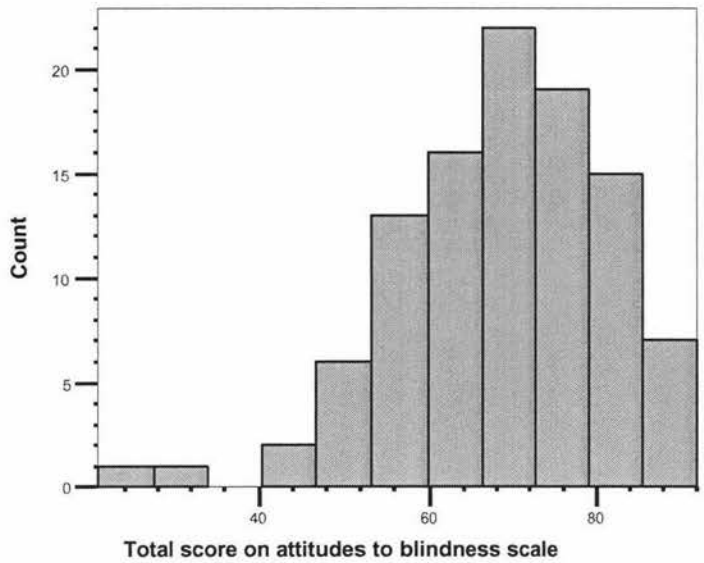

Figure 12: Employers attitudes' towards blind people by frequency of respondent responses

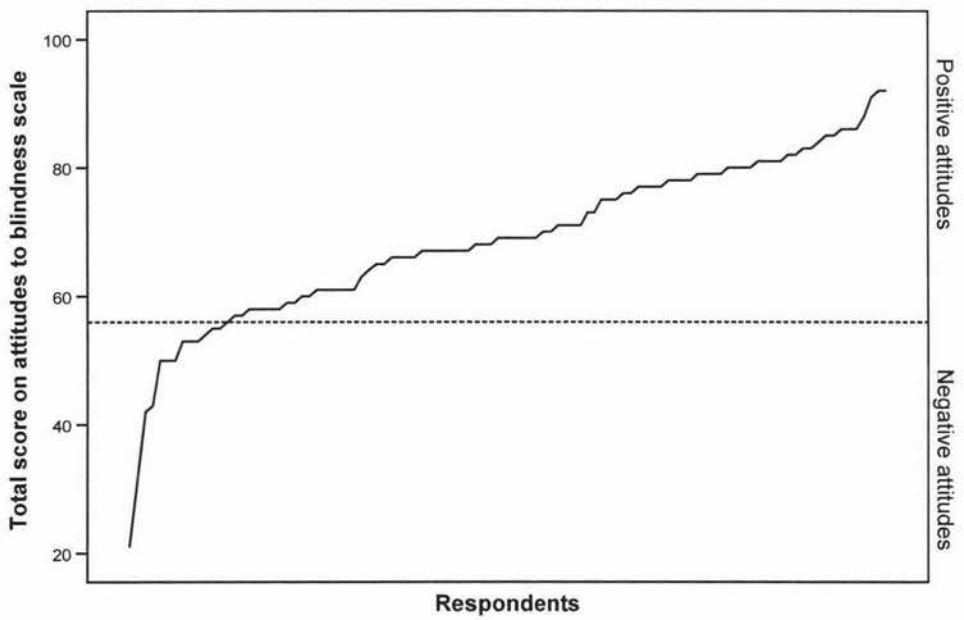

Figure 13: Employers' attitudes towards blind people by respondent

However there were some items in the ATBP scale that were of concern to employers more than any other on the scale. These included perceived issues for blind people regarding safety, the possible high costs of workplace adaptations and that blind people

would not be as productive as sighted employees. Figure 14 illustrates the mean scores for each attitude question.

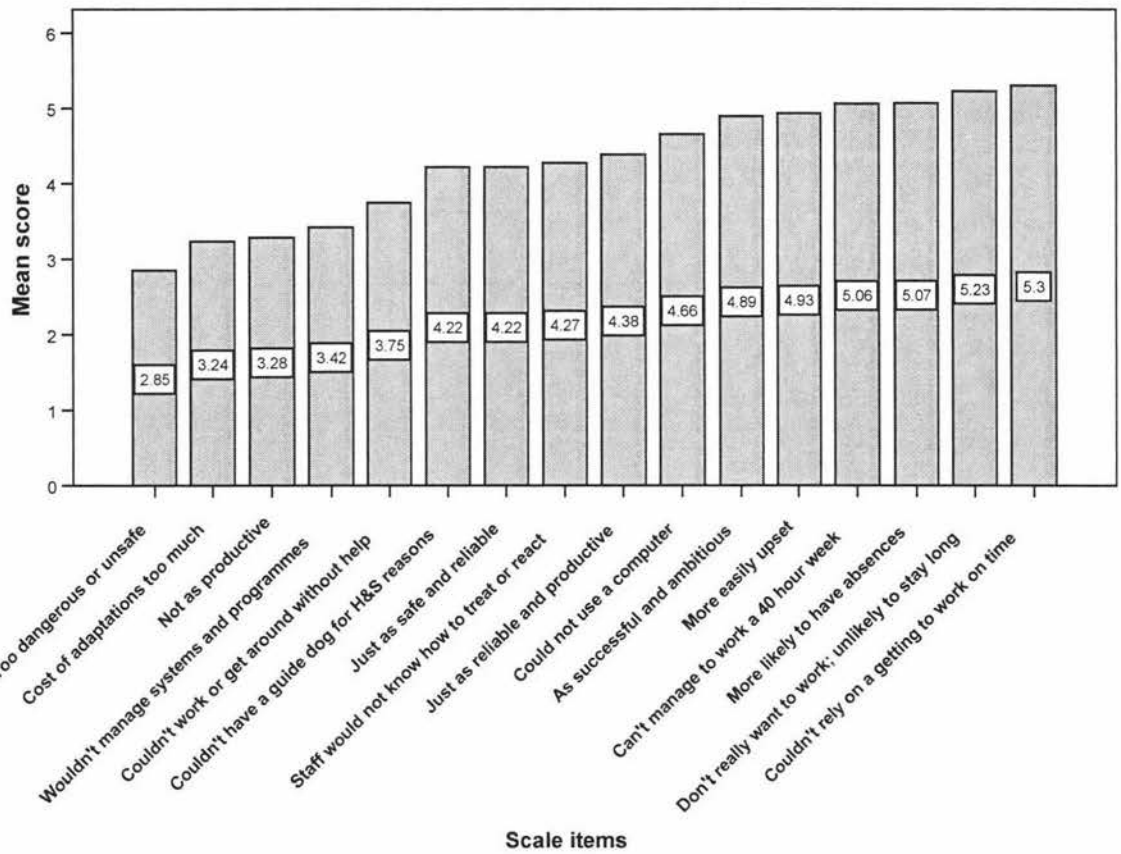

Figure 14: Respondents' score on each attitude scale item

The influence of variables on attitude

Once the ATBP scores were calculated, testing was undertaken to see if some or all of the variables had an effect on the total score of the ATBP. The Levene t-test was used to test for equity of variance. If the equity of variance is greater than 0.05 the variances are equal. If the differences are significant, the t-test would need to be less than or equal to 0.05 for equity of means. The variables tested included the following:

- whether an employer had previously hired a person with disabilities
- whether employers had a family member with a disability
- an employer's gender

The results for each variance (Table 6) indicate that equal variances can be assumed as the variances are greater than 0.05. However the variables have not had a significant influence on the outcome of the ATBP as the test for equity of means are in all cases more than 0.05. For example, for previously hired a person with a disability the variance is t (df) = 0.98, p = 0.326.

Table 6: Influence of variables on attitudes

Variables		F	Sig.	t	df	Sig. (2-tailed)
Previously hired person with a disability						
Total score on Attitudes to Blind persons scale	Equal variances assumed	.186	.667	.988	100	.326
	Equal variances not assumed			.988	96.290	.326
Family member with a disability						
Total score on Attitudes to Blind persons scale	Equal variances assumed	.848	.359	1.614	100	.110
	Equal variances assumed			1.559	78.066	.123
Gender						
Total score on Attitudes to Blind persons scale	Equal variances assumed	.204	.652	1.638	100	.105
	Equal variances assumed			1.639	99.696	.104

Other tests undertaken included one-way ANOVA tests which assessed the variables (age and education level) to see if there were differences on the total scores of attitudes to blindness.

The ANOVA tests undertaken in this case looked for non-significant scores on the test for homogeneity of variances (greater than 0.05). If it were found that the significance was greater than 0.05 a Tukey's post hoc test would then be used.

The results for the different age brackets indicated that the significance was greater than 0.05 on the homogeneity of variance test (0.072), which indicates confidence in that the population variance for each age grouping is approximately equal. However, the ANOVA F-probability value (0.159) is greater than 0.05. Therefore the null hypothesis

is accepted, which means there is no significant difference because of age on the individuals' attitudes towards blind people. The same result was found for education levels as the Levene homogeneity of variance test (0.863) and the ANOVA (0.121) were both greater than 0.05.

Additional representative graphs and inferential tables for all tests undertaken can be found in Appendix D.

Hypotheses findings

1. It was hypothesised that respondents would have unfavourable attitudes towards blind and vision-impaired people. This hypothesis was not supported by this study as the attitudes were mostly positive.

2. It was hypothesised that respondents' demographic factors of age range and gender would not be related to their attitudes towards blind and vision-impaired people. Previous studies did not support either of these relationships. Both the gender and age range portions of the hypothesis were supported which means they are not related to attitudes towards blind and vision-impaired people.

3. It was hypothesised the respondents' education level would be related to their attitudes towards blind and vision-impaired people. Previous studies support this relationship. In this current study, however, it was not established that there was a direct relationship between educational level attained and attitudes towards blind people.

4. It was hypothesised that the respondents frequency of contact with a blind and vision-impaired person, or whether they had a family member who had a disability, or they had hired a person with a disability, would be related to their attitudes towards blind and vision-impaired people. Previous studies indicated that there was a strong relationship between these variables and attitudes towards disabled people. This study did not support this hypothesis.

5. It was hypothesised that the respondents perceive blind and vision-impaired people as the least employable of the disability types. This study strongly supported this hypothesis. Blindness or a moderate to severe intellectual

handicap were ranked as almost equal lowest of all disability types employers felt they could employ in their companies.

6. It was hypothesised that employers perceive blind and vision-impaired people as unable or unsuitable to perform particular jobs. This hypothesis is supported by this current study. In particular, those jobs of machinery operators and drivers, along with labourers, were perceived as the least suitable for blind and vision-impaired people. Conversely, traditional jobs related to management or clerical work were viewed as most suitable occupations for blind and vision-impaired people.

Summary

Generally employers demonstrated positive attitudes towards blind and vision-impaired people. However, this was in total contrast to potentially employing them in positions vacant in their own companies. This finding was concurrent with the conclusions from a number of disability attitude studies reviewed by Wilgosh and Skaret (1987) and Hernandez (2000). The majority of employers stated that blind people would be the most difficult to employ, along with moderate to severe intellectually handicapped people.

Employers had three main concerns regarding employing blind people: safety on the job, productivity concerns and the costs associated with workplace adaptations.

The study also highlighted particular jobs that employers felt blind people could not undertake. These included operating machinery and labouring. This is in contrast to many other possible occupations, especially professional occupations.

When variables (age, gender, education or whether they had previous contact with people with disabilities, etc.) were considered as possible influences on attitudes or hiring decisions, there was little that could be linked to attitudes. These results are illustrated in the graphs included in Appendix D.

Chapter 5

DISCUSSION

Overview of problem

> Even today, when leisure-time interests exert increasing influence in our lives, employment is, for most adults, the primary source of not only income, but also identity and interactions, if not satisfactions. Unfortunately, for most adults with disabilities employment represents only a yet-to-be-fulfilled hope, a close but inaccessible goal, a daily reminder that they are not among the majority (McCarthy, 1988, p. 246).

McCarthy's opening sentences to his article on attitudes that affect employment opportunities for persons with disabilities is as true today as it was when he wrote it in 1988. This is truest for blind and vision-impaired people who have found (and continue to find) it hard to gain and retain employment, in comparison with other disability groups and the wider total working-age population. The unemployment rate for blind people is approximately four times that of the general working-age population and two and a half times that of the overall disabled working age population.

This scenario is not unique to New Zealand. Unger (2002) found that the employment rate for people with disabilities in the USA has increased very little since the 1980s even with the introduction of the Americans with Disabilities Act (1990). In addition Gilbride et al. (2000), who studied employers' perceptions and hiring practices, discovered that blind people were ranked by employers as the least able to be employed in their companies, on a par with people with moderate to severe mental 'retardation'. Dench, Meager and Morris (1996) found in the United Kingdom that 51.2% of employers reported it would be impossible to employ people with a seeing difficulty and Simpson et al. (2005) who surveyed working-age blind and vision-impaired people in Canada, found that 49% were unemployed.

Few, if any, international studies exist regarding the attitudes of employers towards employing blind and vision-impaired people as an individual disability group. Those studies that have been done, have included blindness as part of wider examinations of

employer attitudes towards the disability sector as a whole. The only New Zealand study (Waby, 2003) that examines employer's attitudes toward employing blind and vision-impaired people, found that 75% of employers had never employed a blind or vision-impaired person. Employers gave a number of reasons for this being the case, including not being able to do the job because the person could not see, the potential cost of adaptations and not being able to comply with health and safety regulations. These reasons appear to be quite common internationally with Unger (2002), Hernandez (2000) and others finding the main reasons for not employing people with disabilities are unfounded concerns about potential absenteeism, low productivity, high staff turnover, accommodation costs, health and safety, and dependability or dedication to the job. This is despite many studies that have identified disabled people as having above-average work performance, above-average attendance and exceptionally good safety records (Unger, 2002). Unger and other researchers (Hernandez, 2000) also noted that the findings across a wide cross-section of interviewees indicated that employers who have had previous contact and experience with workers with disabilities are more willing to employ such persons.

Blind and vision-impaired people, as one of a number of disability types, face negative attitudes from individuals without disabilities (Katz, Hass & Bailey, 1998; Livneh, 1982; Livneh, 1998; Chism & Satcher, 1997; Gething & Wheeler, 1992; Hernandez, 2000) and even those who work in helping roles with individuals with disabilities (e.g. rehabilitation nurses, teachers, etc.) hold negative attitudes. These attitudes have been shown to lead to negative rehabilitation and educational outcomes (Katz et al., 1998, Levy et al., 1993).

Blind people themselves have long talked of the difficulties they face in obtaining employment (Crothall, 2004; Barclay, 2003; La Grow, 2004; Simpson et al., 2005). The main difficulty blind people say they face is that of discrimination by employers. Some appear to be attitudinal responses and some are based on ignorance of what blind and vision-impaired people are capable of. Crothall (2004), who undertook research of New Zealand blind and vision-impaired people, found the study participants identified five key barriers to employment. The top barriers identified by all participants in the study were negative attitudes and ignorance of employers.

Attitudes, while they provide us with the means to summarise and understand the complex information in the environment we are faced with every day, can also have negative effects on individuals and groups. In the case of people with disabilities, employer attitudes have tended (in the main) to be negative towards disabled people gaining employment. This particularly affects blind and vision-impaired people who have, as discovered in a number of studies (Gilbride et al., 2000; Bascand, 1987; Jobability.com, 2000; Chism & Satcher, 1997; Levy et al., 1993), been perceived as amongst the hardest to employ of all the people with disabilities.

Understanding attitudes which lead to employment barriers is important and will contribute to our understanding of employers' concerns. It will also assist in the development of programmes to counteract negative hiring practices which significantly impact on the blind and vision-impaired seeking, gaining and retaining employment.

Previous studies discussed in the literature suggest blind and vision-impaired people face significant barriers to employment. These barriers, some of which are the result of negative attitudes and others as a result of ignorance, are in many instances generated by employers. This supports the findings of the current study and suggests that employer attitudes and perceptions must change in order for there to be significant change.

Discussion on findings

Employer attitudes towards blind and vision-impaired people

In general, the total study sample held favourable attitudes towards blind and vision-impaired people (76%). This result is different from earlier studies which assessed attitudes towards individual disability groups, but was congruent with more global views towards 'the disabled' as a total group. However, this study also found that blind and vision-impaired people (alongside moderate to severe intellectually handicapped people) are less favoured by employers (in comparison with other disability groups) as potential employees across all industries. This paradoxical result is congruent with other studies reported by Hernandez (2000) and "these findings suggest a thin veneer of employer acceptance of workers with disabilities" (p. 3). Further, Gibson and Groeneweg (1986) concluded that while the majority of employers may agree with the idea of hiring people with disabilities, this agreement does not necessarily transfer to a willingness to consider people with disabilities as job applicants for their own company.

One possible reason for this result in the current study is that employers do indeed have positive attitudes towards blind people but when it comes to employing them they are unable to transfer this attitude to their hiring practices, due to ignorance about blind people's abilities, and the roles blind people can actually undertake or indeed what aids are available for the blind to complete tasks which ordinarily require sight. When employers make employment assessments they may sometimes assess what is "possible" from their own eyes, i.e. "can a blind person do this job - when I close my eyes I can not see the computer screen therefore they (blind and vision-impaired) could not use a computer". One employer in this study said:

> Yes, definitely there are a lot of things, e.g. that a blind person could do that I would think would be impossible because I am thinking of what would happen if I couldn't see. The technology now is that they certainly could do an administrative job and probably much more than that. I wouldn't have a clue as I am too busy in my every day-to-day stuff in trying to understand that.

A second possible reason for the difference between attitude and the potential for hiring blind and vision-impaired people is that up to 76% of employers answered the attitude questions in such a way as to appear non-judgemental or non-prejudiced towards people with vision disabilities. This is called "social desirability response bias" (SDB) or sometimes "faking good" (discussed in Limitations to this research, p. 62).

A third reason may be that employers truly believe the myths about blind people and, as a result, are concerned that blind people will be unsafe, will require costly adaptations to the workplace, are less productive and unable to undertake particular tasks or manage company systems and programmes; all of which override employers' genuinely positive attitudes towards blind and vision-impaired people. One employer reinforced this by saying that:

> We do have to be careful with disabilities because we are a manufacturing operation; there are a lot of hazards. We are quite conscious of safety. In the administration area having a blind employee would be fine for us, I could see us working around that but around the manufacturing area it would be too risky for us to employ someone who was blind. With the health and safety risks to us now we couldn't put someone blind or vision-impaired down beside our machinery.

Holding stereotypical views about people with disabilities (and, in this case, blind people) is not new. Hunt and Hunt (2000) stated that "negative attitudes are believed to result in and reinforce discriminatory, biased, and stereotypical responses toward

people with disabilities" (p. 269). Unger (2002) reviewed many studies of employers' attitudes towards disabled people and found:

> Employers have unfounded concerns about workers with disabilities in many areas, including productivity, absenteeism, turnover, and interpersonal situations on the job, and unfounded fears about costs, including accommodations and increases in insurance rates. These concerns are unfounded in that many respondents are surveyed about their perceptions of persons with disabilities and may not have had direct experience working with or supervising employees with disabilities (p. 7).

Unger (2002) also noted that in contrast to these stereotypical views and mythological beliefs held by employers, employer ratings in some studies have indicated that employees with disabilities have average or above average performance, safety records and attendance. For example in 1958 DuPont assessed the differences in job performance amongst its disabled and non-disabled workers. They found that their disabled workers were as good as or better than the non-disabled workers on the measures of safety, attendance and job performance.

The effects of variables on employer attitudes and perceptions

A number of variables such as age, gender, education level and previous contact with people with disabilities or having previously hired people with disabilities were tested as potential influences on attitudes. All of the variables in this study were found to have no significant influence on attitudes. This is in contrast to other studies which identified that, of all the variables, previous contact with people with disabilities directly influences attitudes positively. In some studies gender and educational level had some positive influence as well. However, Yuker (1994) said "when there is convergence (e.g. in the preponderance of data indicating that most demographic variables are unrelated to attitudes toward people with disabilities) the results should be taken seriously" (p. 4). An examination of why the variables had no influence in this case has been undertaken; however, the reasons are not obvious. Some reasons may include:

1. The size of the sample may be too small to allow realistic assessment of the effect of variables on attitude.

2. That the variables identified have little influence and it is some other "undiscovered" variable or combination of variables that may have the

significant influence. It is also unclear from other studies if demographic variables have a significant effect on attitudes, as many studies contradict each other. Yuker (1994) discussed the influence of variables on attitudes and said, in relation to prior contact or knowledge of people with disabilities, that "while there are minimal data, theory leads to the prediction that knowledge about disabilities is either unrelated or negatively related to attitudes towards disabled people, because it emphasizes *dis*-abilities rather than abilities" (p. 6).

3. That there are wider "societal" and "cultural" norms or influences that impact on attitude or behaviour or both.

4. That attitude is not necessarily a predictor of behaviour - a view held by a number of researchers (Hernandez, 2000; Unger, 2002; Bohner and Wänke, 2002).

How attitudes are formed - employers' view

Those interviewed in the second stage of this study were asked about their attitudes and specifically how they were formed and what, if anything, influenced their behaviour. Some had little, if any, understanding of how they formed attitudes; others indicated that attitudes were learned from parents (how they were "brought up"), friends, relatives or people they relate to on a day-to-day basis and general community socialisation. Others said that mass media (TV being the biggest influence), education and interaction with people with disabilities had an influence on perceptions they formed or behaviours they exhibited. Yuker (1994) and Levy et al., (1993) also confirmed the role of media in influencing attitudes. The workplace was also identified as an environment where behaviours and attitudes were influenced. One study participant said:

> By experience, interacting with people, by talking to them the first few seconds of meeting and summing the person up and then developing that by spending time with them. The first time I saw Josh (a blind member of staff) he had his nose glued to the computer screen - I was taken aback.

Interestingly one participant said that "we often categorise people (particularly the disabled) into one overall disability category, rather than individuals or individuals with different disabilities. This might affect how we hire people I suppose." Another

participant discussed how their company came to hire a blind person:

> If you had come here a year ago we wouldn't have employed anyone with a sight disability. We didn't think that blind people could ever undertake the work we did so they were never considered as potential employees. Then we were approached by the local polytechnic who were promoting their recent graduates. We had a particular skills need to fill and that style of skill was hard to find, we took him (blind person) on a short-term contract and we were told we didn't have to take him on permanently. That was how it happened; we took him on a year's trial, the rest is history.

This company's experience illustrates that prior to being approached by the local polytechnic, the employer did not know what roles or tasks blind people could undertake, that a blind person could be a suitable employee and that blind people were an untapped labour source available to them.

The dichotomy between employer hiring practices and attitudes

Employers' attitudes towards blind and vision-impaired people appear to be overtly positive on the one hand and covertly negative on the other. Certainly in this current study there is a clear distinction between general attitudes towards the blind (which are positive) and potential hiring practices (which are mainly negative). Katz et al. (1988, chap. 4) suggest that attitudes to disabled and other marginalised groups can be contradictory, i.e. a combination of aversion or hostility on the one hand and sympathy and compassion on the other. Eccles and Six's research (cited in Bohner & Wänke. 2002) also explains the dichotomy between attitudes and behaviour where altruistic-based behaviour is less affected by attitudes, whereas more self-centred attitudes or beliefs, such as towards illicit drug use, were highly correlated to behaviour.

Katz et al. provide further support for his view through a review of the literature where they state the studies of Myerson, and Gonick (1953) concluded that public, verbalised attitudes towards those who had disabilities were favourable on the average but that the deeper universalised feelings were frequently rejecting.

Katz et al. (1988) conducted a number of experiments to explore people's attitudes and behavioural reactions to individuals with disabilities. The pattern of results indicates that reactions (behaviour) can be extremely favourable or unfavourable depending on the situation. Further, Katz et al. suggests that the results are consistent with four ideas:

1. "the sentiments of many people about persons who are disabled tend to be ambivalent rather than unambiguously hostile or friendly;

2. the pro and anti attitudes tend to be rooted to some extent in two general value orientations, individualism of the Protestant ethic variety and humanitarianism;

3. stimulus events that make salient one's ambivalence about disabled people create a state of psychic tension; and

4. efforts at tension reduction may take a form of extreme behaviour toward members of the group in question" (pp. 56–57).

Given the findings of the aforementioned research, it is not unusual that the responses received in the current study were overtly positive and covertly negative. These conclusions go some way to explaining why employers did not transfer their positive opinions on blind people as a group into individual positive employment decisions regarding blind and vision-impaired people.

Explaining employers' attitudes

> Many experts agree that the continuing unemployment of people with disabilities is due in large part to the fact that potential employers and co-workers still maintain negative attitudes toward them as a group. These negative attitudes appear to be rooted in a lack of knowledge about people with disabilities, as well as the perpetuation of erroneous stereotypes about them (Hunt & Hunt, 2004).

Many studies indicate that disabled people's attributes such as job qualifications and skills, attendance, punctuality and social skills are important to employers (Yuker, 1994). Similarly this current study found some reasons why employers felt they could not employ blind and vision-impaired people for jobs in their companies. The key reasons were issues or concerns with health and safety, the cost of adaptations, productivity concerns and perceived inability to manage company-specific programmes and systems; all of these rather than personal characteristics.

Employers also held very traditional or stereotypical views about the types of jobs for which blind people would be suitable and least suitable. Not surprisingly, manual jobs such as machinery operators and labourers were perceived as the least suitable for blind people and desk jobs such as management, clerical and administrative jobs were perceived as suitable.

Hunt and Hunt (2004) discuss employers' negative attitudes and perceptions regarding people with disabilities. In particular they highlight the erroneous "often negative stereotypes" (p. 4). Add to these negative perceptions "the fact that people with disabilities can evoke negative emotional reactions in others, such as pity or fear (Harris & Associates, 1991) and it becomes clearer why individuals in this group have difficulty integrating into the workforce" (p. 4). These negative perceptions were evident in the second-stage interviews, where one participant said:

> "Yes, fear! That once it got down to the nitty gritty of actually employing someone like that - alarm bells would ring, asking yourself "how would I do this?" Not so much as having to deal with that position but having to deal with that person."

Fishbein and Ajzen (cited in Hunt & Hunt, 2004) developed a framework for attitude formation in 1980. Using this framework, researchers Lee and Rodda (1994), asserted that "negative attitudes toward people with disabilities appear to stem from faulty information in the belief system about disability and about people who have disabilities" (cited in Hunt & Hunt, 2004, p. 4). This contention supports the ideas of Katz et al. (1988) on attitudes and behavioural reactions to individuals with disabilities. The thinking of Fishbein (1971), Levy et al. (1993) and Katz et al. (1988) all contribute to explaining the negative employer perception, the subsequent unwillingness to employ blind and vision-impaired people and why the stereotypes held continue to limit the employment opportunities and choices of blind people.

Participants in the second stage of the study discussed the stereotypes and barriers experienced by blind and vision-impaired people. However they chose to see these concerns (safety, productivity, adaptation costs, etc.) as part of making pragmatic employment decisions, rather than barriers.

Employment barriers

A number of studies have been conducted on employment barriers experienced by the blind and vision-impaired. Many of these (La Grow, 2002, 2004; Crothall, 2004; Waby, 2003; Barclay, 2003) have identified the key barriers e.g. attitudes of employers, such as discrimination or ignorance. This present study has researched the attitudes of employers towards employing blind and vision-impaired people. While on the attitude scale employers presented as having positive attitudes, their behaviour relating to employment of blind people negated these positive attitudes. When examining the

negative employment perceptions it was discovered the main 'barriers' (employment concerns) from the employers' point of view were:

1. *Health and safety* - it would be too dangerous and unsafe and OSH regulations were too restrictive and costly if breached.

2. *Cost of Adaptations to the work place or work processes* - this was based on no knowledge of what kind of adaptations would be required or the associated costs. Many studies have indicated costs are usually $500 or less. The United States Department of Labor, Office of Disability Employment Policy (2004) has shown that 15% of accommodations cost nothing, 51% cost between $1 and $500, 12% cost between $501 and $1000, and 22% cost more that $1,000.

3. *Not as productive as sighted employees* - this is a common misconception generally found in other studies (Unger, 2002).

4. *Wouldn't manage workplace systems or programmes* - this is based on ignorance on the behalf of the employer and is usually related to not knowing about available special aids and individual capabilities of blind and vision-impaired people. For example there are several computer programmes readily available to blind people. These convert all text into synthesised speech; all the operator need do is wear a pair of headphones.

These concerns about blind and vision-impaired people, which are founded on myths and stereotypes, are encapsulated in the following statements made by employers who were interviewed.

> There might be another reason which might be a stumbling block and that is, if the employer was to think - "look that person that person with an impairment is going to require close supervision over a length of time then that is going to take that person out of active capacity as well and they won't be quite as productive while they are teaching the vision-impaired person". In this day and age, especially for the last two or three years where the pressure has been on, it has become almost a rule of thumb that "I don't want to employ someone who is going to absorb lots of time to teach them".

> Retail probably; it is hard to say about the job because with trucks coming in and the yard can be very busy at times; it would be a hard situation for a blind person dealing with the amount of traffic that goes through the yard.

I think a lot of it would be fear, you see someone walking towards you that is either a dwarf or has a Seeing Eye dog or whatever and you automatically become fearful as you don't know what it is all about. Therefore you are not able to deal with disability despite whatever thoughts you might have about people with disabilities in general.

Take for example if a person was working in our office, we have the receptionist at the front, and if she goes away and if someone came in and the blind person was sitting at my desk they wouldn't be aware that there was a client waiting; the blind person wouldn't know that he/she was waiting to be attended to.

Like earlier studies (La Grow, 2004; Waby, 2003; Barclay, 2003; Crothall, 2004, etc.) this study implies that the barriers presented by employers are most likely based on myths and rooted in ignorance rather than as a result of general attitudes to disabled people. When barriers were explored with the participants in stage 2 of this survey it was discovered that:

- Only one participant knew there was government financial and advisory support available to both blind people and their employers. The government can provide to employers productivity allowances, and to blind and vision-impaired people an annual allowance for work-related expenses including purchase of specialist equipment or software, etc. The RNZFB provides advice and support, scripting and configuration services.

- None knew that blind and vision-impaired people were found to be as safe as, if not safer, than sighted people in the workplace; or

- OSH does not support the commonly held view of employers that OSH regulations preclude employment of blind people. In fact OSH have produced a statement for employers about employing blind and vision-impaired people, which includes the fact that workplace accommodations are usually minor and that blind and vision-impaired people are just as safe as their sighted colleagues in the workplace.

- None knew that blind and vision-impaired people were found to be just as productive as sighted staff.

- Nor did they know that systems and programmes in the main can be modified to facilitate the use of screen-reading software, a key aid to using computers for many blind and vision-impaired people.

The current study presents some first-hand insight into why employers' behaviour is incongruent with their expressed attitudes towards the blind and signals a need for wider employer education to dispel the myths and break down the barriers and bring lasting change to current perceptions.

Changing attitudes – a way forward

Amelioration of negative attitudes and behaviour is a difficult process. This is especially so if the underlying principles of attitude function, development, and rationale are not addressed. Identifying these underlying dimensions is critical to altering or improving negative attitudes and behaviours. For attitude change to be successful it is necessary to establish what types of attitudes exist (and to what degree) before beginning the process of attitude change.

All of the participants in the second stage of the research identified that for employers' attitudes, perceptions, and behaviour towards blind and vision-impaired people to change, some form of education or training would be required. They also acknowledged that their attitudes are learned and come from a multitude of sources including parents, friends, relatives, education settings and the media, etc. The following comments are illustrative of the employers' views regarding attitude change.

> "I was once given some very sound advice and that is that when there are those perceptions, we don't try and change things by rebutting that perception – we go and create another perception altogether. I felt that was very pertinent advice of the situation that we were in at the particular time. So it comes down to: advertising, public relations, information – the type of thing that will change perceptions."

> "It comes back to that question you raised before, KNOWLEDGE to convey to the business community or indeed the community at large that these people have capabilities which are beyond that which would be seen superficially. Demonstrations, people who are actually doing it. Wouldn't it be marvellous to get a few interested in the sight-impaired people, particularly a segment on '60 Minutes' or one of those programmes on Sunday, sight-impaired people sitting at their computer doing their thing would be great."

Triandis (1971) proposed a number of ways to change attitudes, including education or information sharing from media or individuals; direct attitude experience with the

attitude "object"; forcing behavioural change on the individual, i.e. Through legislation; fait accompli changes; and lastly counselling or psychotherapy. While this current study did not examine methods of attitude change with participants, a number of those interviewed in the second stage indicated it had to be a multi-pronged intervention which included measures from a government level as well as individual and community based initiatives.

Limitations

Finally, a number of important limitations to the current study need to be considered. These limitations are grouped under four key headings: sample size; research instrument; sample selection and potential response bias. These limitations will assist in the design of future research and the development of research methodologies.

Sample size

The research sample was 200 of which 102 people took part. Yuker (1994) stated that "Studies should use adequate sample sizes, as determined by a power analysis, to be able to confirm their hypotheses" (p. 5). This study sample may be too small a sample for accurate assessments to be made regarding the effects or otherwise of demographic and social variables on attitudes towards blind and vision-impaired people. However, the demographic data on respondents presented a representative cross-section of variables such as males and females, ethnic make-up, age ranges, people who had hired people with disabilities and those who had not, etc.

Research instrument

A second limitation is that the ATBP part of the research instrument was designed by the researcher and while it was validated it did not follow the traditional Yuker et al. (1960) Attitude Towards Disabled Persons scale instrument design. In particular the number of questions was reduced from 20 to 16 and some items were incorporated from the Attitudes to Blindness Scale (Cowen, Underberg and Verrillo, 1958). Yuker (1994) said that "there should be attempts to improve existing measures rather than devising new ones. Measures with low reliability should not be used. Dissertation students should be forbidden to develop new attitude measures (p. 5)."

Sample selection

Another limitation is the selection of the sample. The selection was done manually by utilising population data and the UBD Business directory. Selecting this way (while all efforts were used to ensure it was well constructed and random) introduces the risk of human error. Ideally the sample should have been selected through electronic sampling means.

Potential response bias

While the overall instrument was scrutinised and all efforts made to ensure there would be no problem with socially desirable bias (SDB), it cannot be guaranteed to be foolproof and, as the results have shown, there may well have been strong elements of this in the responses to the ATBP attitude scale.

The measurement of non-cognitive variables as discussed by Rennie (1982) is subject to response bias, or response set. This is the tendency of a person to respond to questions in a particular way independently of the content of the questions or, as conventionally termed, items. There are many kinds of response biases: for example, the tendency to agree rather than disagree, or the tendency to make extreme responses.

Nancarrow and Brace (2000) suggest that in some circumstances, respondents may be tempted to give the socially desirable response rather than describe what they actually think, believe or do. "This has typically been assumed to be a function of two factors, the general strength of need for approval felt by an individual (personality trait) and the demands of a particular situation" (Nancarrow & Brace, 2000 p. 2).

Another important distinction has been made by Nancarrow & Brace (2000) between SDB in response to a question being either a function of attempting to present oneself in a favourable light to others (interviewer and researcher) and/or a self-esteem preservation function. The former function is known as "impression management" and the latter as "self-deception" or "ego defence".

The two potential problems SDB presents to researchers are:

1) "Over-reporting of socially desirable behaviour and under-reporting of socially undesirable behaviour

2) Confounding of relationships; the presence of SDB can attenuate, inflate or moderate relationships between variables" (Nancarrow & Brace., 2000 pp. 2–3)

Kerlinger (1973, p. 497) believes that "while response set is a mild threat to valid measurement, its importance has been overrated". More recently, Lehmann (1980) indicated that more research was needed on response sets, including the kinds of people susceptible to response set; the kinds of items and tests affected by response sets; and whether or not their effect could or should be neutralised.

All possible efforts were taken (utilising well-known and validated research scales validating the modified research instrument, pre-testing the instrument on a sample of employers, learning research interview techniques, etc.) to minimise potential response bias in the survey results. Therefore the level of influence on the results is uncertain, given employers may genuinely have positive attitudes to blind and vision-impaired people as well as holding negative stereotypical views about their employability.

Conclusions and implications of this study

The aims of this research have been examined and in summary the following conclusions can be drawn.

To understand and measuring employer attitude differences towards hiring persons with specific disabilities

The major implication of this research is that there is a disparity between employers' attitudes towards blind and vision-impaired people and their willingness to employ them in positions in their own companies. In particular employers had positive attitudes towards blind and vision-impaired people but felt of all disability types blindness (on a par with moderate to severe intellectual disabilities) was the least employable of all disability types.

To explore the origins of attitudes and perceptions towards people with disabilities (particularly the blind), for example are they based on myths or lack of knowledge?

Certainly it appears that employers are subject to negative stereotypes and the myths about blind and vision-impaired people. In particular employers believed that blind and vision-impaired people presented a real health and safety risk, were not as productive as sighted employees, couldn't manage workplace systems or programmes and that the cost of adaptations to the workplace or work processes would be

prohibitive. This indicates that employers are ignorant of the abilities and capabilities of blind and vision-impaired people, the aids and adaptations that are available to assist them in their roles and associated costs.

Employers also are subject to typecasting of blind people into what has been seen as the "traditional" role for a blind person. In this research this translated to blind people being precluded for manual occupations such as labouring and machinery operating. Attitude change and disability-awareness programmes are a must if barriers and negative attitudes are to be ameliorated for blind and vision-impaired people.

To discover if there are interrelated demographic factors that predict attitude towards blind and vision-impaired people.

Earlier studies have found that variables such as gender, age, business size or previous contact with people with disabilities had an influence on attitudes, either a positive or negative influence. However in this study it was found that the variables had no significant influence on employer's attitudes. These results imply that attitudes are not necessarily a predictor of behaviour as previously thought by researchers.

To develop relevant recommendations that mitigates any intrinsic discriminatory attitudes towards blind and vision-impaired people.

The only way that blind and vision-impaired people will be able to enjoy similar employment opportunities as sighted people is for there to be broad-spectrum community and employer-education programmes. Government must also take responsibility for developing community-education programmes and the development of complementary strategies and policies that support blind and vision-impaired people into employment.

Recommendations

1. Start education programmes early

   As attitudes and stereotyping start being developed at a young age it is important that education programmes on understanding blindness and vision impairment as a disability are developed and directed towards primary and secondary students. These programmes will, over time, break down stereotypes and help students to better conceptualise and develop positive attitudes towards blind and vision-impaired people.

2. Fostering a responsible and non-discriminatory media culture

   Most respondents said that their impressions of people with disabilities came from the home and education environments and then was reinforced through the mass media (television, newspapers, internet and magazines). Clearly this is a very influential channel and therefore there should be conscious attempts to utilise the media in a constructive manner so as to foster positive public attitudes and acceptance of people who are blind or vision-impaired. It will also be important to target media individuals to educate them so that the general misconceptions and misunderstanding towards people who are blind and vision-impaired can be explained and ameliorated. Reporters and editors should have an accurate understanding of blindness as well as an awareness of their own pervasive power and social responsibility in equal opportunities. Positive images of people who are blind and vision-impaired should be portrayed by highlighting their strengths and their contribution towards society.

3. Implement workplace training

   Breaking down barriers through educating employers, changing misconceptions and attitudes will not happen without the utilisation of specially designed and targeted programmes. Training and blindness awareness educational programmes need to be more widely introduced. Currently the Foundation of the Blind undertakes such training but is limited in being able to offer this widely to current and prospective employers because of limited personnel and funding resources. However, this kind of training should be delivered in a more expansive way through other organisations as well, e.g. the EEO Trust, Workbridge and others rather than relying solely on the Foundation of the Blind.

4. Establish an employer mentoring programme

   The present study results indicate that one means to achieve better employment outcomes for blind and vision-impaired people is to create a vehicle for employers who may be considering hiring blind staff to speak with employers who have already done so. Employers experienced at employing blind and vision-impaired staff could act as mentors for those who have never hired a blind person. If matched by industry and occupation type, the credibility of

experienced employers should be high because the parties can share common concerns and discuss problems such as hiring visually impaired candidates, accommodations, and the retention process, etc.

5. Develop government policy and strategy

   Government is responsible for developing strategies and policies detailing services and support of people with disabilities. The current Disability Strategy (2001) and Pathways to Inclusion (2001) provide a direction, amongst other things, for increasing the participation of people with disabilities in employment. While government has made some implementation funds available it has relied on the community to absorb much of the employer educational work required into existing contracts.

   As blind people are the least likely to be hired by employers it is essential for the government to put resources directly into a broad community education programme similar to the "Like minds, like mine" campaign which was implemented in 1996, after an inquiry into mental health services. Judge Ken Mason recommended that the government fund a public education campaign to reduce discrimination associated with mental illness. This was a five year campaign attracting funding of $12.6 million for its implementation.

   While it could not be considered for the same level of funding it could be advocated for that a nationwide government-funded education programme was warranted. Government has tended to categorise people with individual disabilities as one disability group and target its campaigns generically. However, this has not and will not work for blind and vision-impaired people. Blindness is 'low incident' in comparison with the other disabilities (such as the physical disabilities e.g. those in wheelchairs), and as a consequence is consumed by the larger disability group whose needs are focused around the physical disability needs rather than the sensory.

6. Introduce government funding for community initiatives

   Currently many community health and social service organisations undertake awareness activities related to disability to some degree or another. However, many of these organisations do so without financial backing from the

government. As these organisations work directly with those affected by health conditions and disabilities, they are in the best position to provide community awareness programmes. Government should allocate sufficient funds to these organisations under contract to enable them to undertake this work with sufficient resources to do so.

7. Promote work experience programmes

   As employers are, in the main, negatively disposed to employing blind and vision-impaired people, work experience programmes should be promoted to employers and funded by government. If employers could be encouraged to take blind and vision-impaired people on under a work experience programme it would assist them to understand the capabilities of blind people, including that they are just as competent, loyal and hard working as sighted employees. Such a scheme would mean employers would not be required (during the work experience period) to provide permanent employment.

   Such schemes are important to break down the barriers blind people face in gaining employment. Non-disabled people, mostly in their teenage years, get the opportunity to undertake work experience either in after-school or weekend employment or regular daily jobs like paper deliveries, etc. These work experience opportunities are where young people learn the skills of getting up to go to work, getting there on time and learning the social etiquette of work, etc. Blind and vision-impaired people very rarely get this opportunity.

   A work experience programme can therefore assist blind and vision-impaired people to gain valuable work skills and opportunities for future employment. Employers similarly get to observe blind and vision-impaired people in the work environment and gain a potential employee.

Future research questions

Firstly this study should be repeated on a larger sample. This will confirm whether there is any relationship between variables and attitudes and attitudes and behaviour in comparison to this study which found no relationship.

Most importantly, research should be conducted to examine if there is a combination of variables that determine attitudes or negative behaviour and/or whether there is some, as yet undiscovered, relationship between societal and cultural norms and attitudes and behaviour.

There may also be some value in examining employers' attitudes to blind and vision-impaired people by utilising more hidden disguised research methods to see if there is any difference to the results found in this study.

Additional research could be done to compare small businesses and large businesses on hiring practices relating to blind and vision-impaired people. It would be interesting to explore this avenue of research and whether or not there are differences in the way big businesses as opposed to small businesses would respond to hiring someone who is blind and vision-impaired.

Lastly it would be useful to research the most appropriate ways of changing employers' attitudes towards blind and vision-impaired people.

Summary

The findings of this study have provided a wealth of information about employers' attitudes and employment practice behaviour. The employers came from different industries, rural and urban locations, different age groups and had various educational backgrounds and experiences with disabled people.

Although the attitudes to blind and vision-impaired people were in the main positive, employers' behaviour regarding employing blind and vision-impaired people was negative. In addition, employers believed that stereotypical jobs were best for blind and vision-impaired people precluding them from the manufacturing and other manual positions. Also a number of demographic variables were tested for potential effect on attitude and employment behaviour – none of which had any significant influence.

Past research has shown both negative and positive attitudes to people with disabilities depending on the type of research. Research which assessed the global views to disability was generally positive and those which examined attitudes towards individual disability groups were generally negative. This was in stark contrast with this study. Some more recent research has established that there is little connection between

attitude and behaviour (Hernandez, 2000), where positive attitudes may just be a smoke screen for more deep-seated negative behaviours. Or is employers' behaviour just a result of disability ignorance. Certainly, there is not any definitive answer and either option could be the case in this current research.

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APPENDICES

Employer Survey
(Telephone)

Hello, my name is _____ I would like to talk to the person who is responsible for employing staff in the organisation please.

Interviewer Name: _____

Hello, my name is _____ I am calling from Massey University (in Auckland) to ask you about your company's experiences with hiring people with disabilities. This interview should take about 10 minutes. Do you have time to talk now or would you rather schedule a time for me to call back?

Thank you. Before we begin the survey I would firstly like to get some background details from you about you and your company for our records. Secondly I would like to assure you that any information gathered in this survey will not be attributable to any person or company. You can be certain that anything you say will be treated confidentially. The results of the survey will be collated, statistically analyzed and reported under board employer groupings.

(1) Company Name: _____
[for our records only]
(2) Company Address: _____
[for our records only]
(3) City/town_____

(4) What best describes your type of company/agency _____
[Agriculture, Forestry and Fishing, Mining, Manufacturing, Electricity, Gas and Water Supply, Construction, Wholesale Trade, Retail Trade, Accommodation, Cafes and Restaurants, Transport and Storage, Communication Services, Finance and Insurance, Property and Business Services, Government Administration and Defence, Education, Health and Community Services, Cultural and Recreational Services, Personal and Other Services]

(5) Number of Employees:_____

(6) Person Interviewed: _____ (7) Job Title:_____

(8) Gender: _____ [you shouldn't need to ask this once they have told you their name and you have heard their voice]

The interview is divided into three sections which will take 1-3 minutes each to complete.

Section One:

I will start by asking you some questions about people you have hired in the past.

(9) Have you ever hired a person with a disability before? Yes___ No___
If no, go to section 2. If yes, ask the following questions 10-15
(10) Did you know the person had a disability before you hired them? Yes_____No____
(11) If you have hired people with disabilities, how many people have you hired?

(12) What disability(s) does your employee(s) have that you know of? _____
_____
_____

(13) Have you provided work place modifications or support for employees with disabilities?
Yes___ No___ If no, go on to question 15 otherwise if yes, go straight on to question 14

(14) If yes, what work place modifications or support have you provided (may have to give examples – see below)? _____
_____

(examples:
Providing interpreters, readers, or other personal assistance, Modifying job duties, Restructuring work sites, Providing flexible work schedules or work sites, Obtaining accessible technology or other workplace adaptive equipment.)

(15) Are you pleased you hired a person(s) with a disability? Yes__ No _
What has been your experience with this person as an employee that lead you to say you were pleased / not pleased to employ them (probe for detailed answer):

Section Two:

I would now like you to think of the job in your company that most often is open and needs external applicants. What is the job title of that position?

(16) _____.

I am now going to read a list of different types of disabilities that people experience. Please think of the job you just mentioned and respond by telling me how hard you think it would be to hire a person for this job if the person has the following disability. Please respond using a scale of 1 - impossible, 2 = difficult, 3 = moderately difficult, 4 = easy, and 5 = no problem at all. If you don't know or are unsure, please respond "unsure"

	Impossible				No Problem	
(17) Mild intellectual handicap (IQ > 70)	1	2	3	4	5	Unsure
(18) Moderate/severe intellectual handicap (IQ 50 - 70)	1	2	3	4	5	Unsure
(19) Blindness (visually impaired)	1	2	3	4	5	Unsure
(20) Deaf/Hard of Hearing	1	2	3	4	5	Unsure
(21) Mobility (wheelchair)	1	2	3	4	5	Unsure
(22) Back limitation	1	2	3	4	5	Unsure
(23) Arthritis	1	2	3	4	5	Unsure
(24) Mental illness	1	2	3	4	5	Unsure
(25) Emotional illness	1	2	3	4	5	Unsure
(26) Brain Injury (memory and attention problems)	1	2	3	4	5	Unsure
(27) Heart disease	1	2	3	4	5	Unsure
(28) Respiratory disease	1	2	3	4	5	Unsure
(29) Cancer	1	2	3	4	5	Unsure
(30) HIV positive	1	2	3	4	5	Unsure

Now I would like you to think of the second most often filled job in your company. What is the job title of that position?

(31) _____.

I am going to read you the list again. Please respond using the same scale as before [Ask the person if they want you to repeat the scale. Repeat scale if necessary]

	Impossible				No Problem	Unsure
(32) Mild intellectual handicap (IQ . 70)	1	2	3	4	5	Unsure
(33) Moderate/severe intellectual handicap (IQ 50 - 70)	1	2	3	4	5	Unsure
(34) Blindness (visually impaired)	1	2	3	4	5	Unsure
(35) Deaf/Hard of Hearing	1	2	3	4	5	Unsure
(36) Mobility (wheelchair)	1	2	3	4	5	Unsure
(37) Back limitation	1	2	3	4	5	Unsure
(38) Arthritis	1	2	3	4	5	Unsure
(39) Mental illness	1	2	3	4	5	Unsure
(40) Emotional illness	1	2	3	4	5	Unsure
(41) Brain Injury (memory and attention problems)	1	2	3	4	5	Unsure
(42) Heart disease	1	2	3	4	5	Unsure
(43) Respiratory disease	1	2	3	4	5	Unsure
(44) Cancer	1	2	3	4	5	Unsure
(45) HIV positive	1	2	3	4	5	Unsure

Section Three:

Lastly I have some concluding questions related to one of the disability groups' often identified as hard to employ in jobs commonly filled by external applicants in companies. These questions are general in nature and not necessarily related to employing a person with a disability in any particular job.

I am now going to read you some statements which describe common perceptions about blind people at work. I would like you to respond to these using a scale of 1 = Strongly agree, 2 = Agree, 3 = Not sure but tend to agree, 4 = Not sure but tend to disagree, 5 = Disagree, 6 = Strongly disagree.

(46) A blind person would not be as productive as a sighted person
1 2 3 4 5 6

(47) The cost of adaptations to the workplace would be too much for our company
1 2 3 4 5 6

(48) It would be too dangerous or unsafe for a blind person to do the job
1 2 3 4 5 6

(49) Blind people are just as reliable and productive in the workplace as sighted workers
1 2 3 4 5 6

(50) A blind person could not use a computer
1 2 3 4 5 6

(51) We couldn't rely on a blind person being able to get to work on time
1 2 3 4 5 6

(52) A blind person is more likely to have absences from work
1 2 3 4 5 6

(53) Blind workers are as successful and ambitious as other workers
1 2 3 4 5 6

(54) A blind person wouldn't be able to manage to use our computer systems and specialist programmes 1 2 3 4 5 6

(55) A blind person could not work independently or get around the workplace without a lot of help from others 1 2 3 4 5 6

(56) Blind people generally can't manage to work a 40 hour week
1 2 3 4 5 6

(57) Blind workers are just as safe and reliable in the work place as non-disabled workers
1 2 3 4 5 6

(58) Staff in the company would not know how to treat or react to a blind person on the job
1 2 3 4 5 6

(59) We couldn't have a guide dog on the premises for health and safety reasons
1 2 3 4 5 6

(60) Blind people are more easily upset than people who are sighted

1 2 3 4 5 6

(61) Most blind people don't really want to work and are unlikely to stay in any job for very long 1 2 3 4 5 6

And lastly for our statistical purposes can you please tell me:

(62) Which of the following age ranges best describes your age:
20-29____, 30-39____, 40-49____, 50-59 ____, 60-69 ____, 70+___

(63) What is the highest educational level you have achieved?
NZ School Certificate ____, NZ Sixth Form Certificate ____, NZ Higher School Certificate or Higher Leaving Certificate _____, NZ University Bursary or Entrance or Scholarship _____,University qualification _____.

(64) Does any of your family, relatives or friends have a disability? Yes____ No____
If yes go to question 66, if no, go straight on to question 65

(65) Have you had any contact with people with disabilities? Yes___ No___

(66) Ethnicity:
NZ European or Pakeha___, NZ Maori____, Samoan____, Tongan____ Cook Island Maori____, Niuean____, Indian____, Chinese____, other European_____, Other please specify_____

We will be conducting about half a dozen personal follow-up ½ hour interviews or focus groups in a few weeks time. Would you be willing to be a participant?

(67) Phone Number: _____[if willing to be called back for detailed personal interview or join focus group]

Thank you for your time. If you have any questions about this survey or the results, please feel free to contact either Dr. Janet Sayers or Dr. Margot Edwards at Massey University, in Auckland by calling 09-414-0800.

APPENDIX B: CONSENT FORMS AND ETHICS STATEMENT

Date

5 Springleigh Avenue
Mount Albert
Auckland, 1003

Dear (insert participant's name):

This letter is to confirm you're participating in the second stage of my research which I am conducting as part of my Master's degree in the Department of Management and International Business at Massey University under the supervision of Dr. Janet Sayers and Dr. Margot Edwards. Firstly I would like to thank you for your participation already in the first stage telephone interview. Secondly I would like to provide you with more information about this project and what your involvement in the second stage will entail.

Over the years, people with disabilities have experienced, to varying degrees, difficulty in finding employment, and research in the past decade suggests participation in the workforce of disabled people is affected by employers' lack of awareness of disabled people and their abilities, and the personal attitudes of employers. Since the introduction of the New Zealand Human Rights Act 1993 which prohibits employment discrimination against those who are disabled, attitudes have gradually begun to change. The Human Rights Act was later supplemented with the Disability Strategy (Ministry of Health, 2001) and the Pathways to Inclusion Strategy (Department of Labour, 2001). Hence, this has resulted in further encouragement of employers to consider employing people with disabilities. The purpose of this study, therefore, is to examine in more detail disabled people's participation in the workforce by examining employers' views.

My particular interest is in the blind, which the research of the literature has shown to be in the less favoured groups of employees employers are willing to employ. None of the research has addressed why this is the case. The aim of my research is to ascertain if blind and vision-impaired people are less favoured (in comparison with other disability groups) as potential employees in New Zealand firms and to obtain an understanding of the common knowledge, attitudes or perceptions that contribute to the decisions made about hiring people with disabilities. In particular I hope to gain an understanding of what these attitudes and perceptions are and how or why they influence employers.

Participation in this study is voluntary. It will involve an interview of approximately 40 minutes to take place in a mutually agreed-upon time and location. You may decline to answer any of the interview questions if you so wish. Further, you may decide to withdraw from this study at any time by advising the researcher. With your permission, the interview will be tape-recorded to facilitate collection of information, and later transcribed for analysis. Shortly after the interview has been completed, I will send you a copy of the transcript to give you an opportunity to confirm the accuracy of our conversation and to add or clarify any points that you wish. All information you provide is considered completely confidential. Your name will not appear in any thesis or report resulting from this study, however quotations may be used. Data collected during this study will be retained for the duration of the research project in a locked filing cabinet in my home. Only my supervisors and myself will have access. There are no known or anticipated risks to you as a participant in this study.

If you have any questions regarding this study, or would like additional information to assist you in preparing for your participation in the second stage of the research, please contact me by phone on 09-815-2427 or 0274-755634 or by email at chrisi@pl.net You can also contact my supervisors, Dr. Janet Sayers-(09) 414-0800 ext. 9215 or email J.G.Sayers@massey.ac.nz and Dr. Margot Edwards at (09) 414-0800 ext. 9218 or email M.F.Edwards@massey.ac.nz.

The project was judged to be low risk and approved by the researcher and supervisor under delegated authority from Massey University Human Ethics committee on 15th March 2004. If you have any comments or concerns regarding the ethics of this study, please contact Professor Sylvia Rumball, Assistant to the Vice-Chancellor (Ethics & Equity), telephone 06 350 5249, email humanethicsspn@massey.ac.nz

I hope that the results of my study will be of benefit to those organisations directly involved in the study, and people with disabilities themselves who are not directly involved in the study, as well as to the broader research community.

I very much look forward to speaking with you and thank you in advance for your assistance in this project.

Yours Sincerely,

Chris Inglis
Master's Student

CONSENT FORM

I have read the information presented in the information letter about a study being conducted by Chris Inglis of the Department of Management and International Business at Massey University. I have had the opportunity to ask any questions related to this study, to receive satisfactory answers to my questions, and any additional details I wanted.

I am aware that I have the option of allowing my interview to be tape-recorded to ensure an accurate recording of my responses.

I am also aware that excerpts from the interview may be included in the thesis and/or publications to come from this research, with the understanding that the quotations will be anonymous.

I was informed that I may withdraw my consent at any time without penalty by advising the researcher.

This project has been reviewed by, and received ethics clearance through, the Human Ethics Committee at Massey University. I was informed that if I have any comments or concerns resulting from my participation in this study, I may contact Vice-Chancellor (Ethics & Equity), telephone 06 350 5249, email humanethicsspn@massey.ac.nz .

With this knowledge, I agree to participate in the second stage of this study.

☐YES ☐NO

I agree to have my interview tape-recorded.

☐YES ☐NO

I agree to the use of anonymous quotations in any thesis or publication that comes of this research.

☐YES ☐NO

Participant Name: _____ (Please print)

Participant Signature: _____

Date: _____

Employer Experiences of Employing People with Disabilities

INFORMATION SHEET

---

1. **Researcher**

Chris Inglis
5 Springleigh Avenue
Mount Albert, Auckland
Tel: 0274-755634 (mobile); 09 815 2427 (home); or 09 355 6592 (work)
Email: chrisi@pl.net

As part of my degree of Master of Management I am researching in the area of employment of people with disabilities.

The research being undertaken examines the experiences of employers employing people with disabilities. I am seeking to understand the level of employment of people with disabilities in the workforce, what kinds of jobs are deemed suitable for people of different disabilities in a range of workplaces and lastly obtaining an understanding of the common knowledge, attitudes or perceptions that contribute to the decisions made about hiring people with disabilities. In particular I am looking at disability groups often identified as hard to employ (in this case the blind and vision-impaired) in jobs commonly filled by external applicants in companies.

2. **Supervisors**

Dr Janet Sayers, Senior Lecturer
Department of Management, Massey University, Albany Tel: 09-414 0800 ext. 9215
Email: J.G.Sayers@massey.ac.nz

And

Dr Margot Edwards, Senior Lecturer
Department of Management, Massey University, Albany Tel: 09-414 0800 ext. 9218
Email: M.F.Edwards@massey.ac.nz

3. **Participant recruitment**

The research is focusing on a sample of small, medium and large-sized New Zealand-based organisations. Your organisation was selected following a random web-based search of the UBD business directory.

The first stage telephone survey of the research has been conducted. You were a participant in this survey.

4. **Participant involvement**

In carrying out this research, a two-stage interview process has been employed. Firstly a randomly selected telephone survey was conducted with 200 New Zealand companies and secondly six personal interviews of people who volunteered for a follow-up interview in the telephone survey. Each interview should take no longer than 40 minutes.

All interviewees will be asked to review their interview transcripts for accuracy.

5. **Project procedures**

The research will be conducted in an ethical manner using the information provided only for the purposes of this research project. The identity of individuals will not be disclosed throughout the research project or in any reports without their written consent. If you request it, a pseudonym can be used to protect your identity and that of your organisation.

During the research period, all surveys and personal interview documents gathered during the research will be held in a secure place in the researcher's home at the above address, and will be destroyed at the completion of the research project and after publication. You will also be provided with a summary of the research report.

6. **Participant's rights**

Your participation in this research is voluntary and you can decline to participate, or refuse to answer any particular question(s), or withdraw up until the final draft of the thesis is completed (30 November 2005), or ask any questions about the study at any time during participation. You also have the right to ask for the audio tape to be turned off at any time during the interview.

7. **Committee approval statement**

This research was peer reviewed and the project was judged to be low risk and approved by the researcher and supervisor under delegated authority from Massey University Human Ethics committee on 15th March 2004. Electronic copy of ethics approval document is appended.

If you have any concerns about the conduct of this research that you wish to raise with someone other than the researcher, please contact my supervisors, Dr. Janet Sayers and Dr. Margot Edwards or Lu Yan, Post Graduate Administrator, phone 0800 MASSEY extension 916.

8. **Project contacts**

If you have any questions, please do not hesitate to contact the researcher using any of the contact details listed above, or alternatively, you may have questions you wish to put to the research supervisor.

Chris Inglis
Master's Student

15 March 2004

Christine Inglis
5 Springleigh Avenue
Mount Albert
AUCKLAND

Dear Christine

Re: Employer experiences of employing people with disabilities

Thank you for the MUHEC Checklist and Section A of the MUHEC Application Form that was received on 12 March 2004.

As specified in the Code of Ethical Conduct for Research, Teaching and Evaluations involving Human Participants, persons who submit the MUHEC Checklist with every question answered with a 'no', together with Section A of the MUHEC Application Form (including a signed Declaration), may proceed with their research without approval from a Campus Human Ethics Committee. You are reminded that this delegated authority for approval is based on trust that the Checklist has been accurately filled out and is valid for three years. Please notify me if situations subsequently occur which cause you to reconsider your initial ethical analysis.

Please ensure that the following statement is used on all public documents, and in particular on Information Sheets:

"This project has been reviewed, judged to be low risk, and approved (*note to applicant: include the process below that is most appropriate to practice within your Department, School or Institute*)

by the researcher
by the researcher and supervisor
by peer review *(if you followed that process)*
by other appropriate process *(outline the process appropriately)*

under delegated authority from the Massey University Human Ethics Committee. If you have any concerns about the conduct of this research, please contact Professor Sylvia Rumball, Assistant to the Vice-Chancellor (Equity & Ethics), telephone 06 350 5249, email humanethics@massey.ac.nz".

Please note that if a sponsoring organisation, funding authority, or a journal in which you wish to publish requires evidence of Committee approval (with an approval number), you will have to provide a full application to a Campus Human Ethics Committee.

Yours sincerely

Professor Sylvia V Rumball, Chair
Assistant to the Vice-Chancellor (Ethics & Equity)

Cc Janet Sayers
Management and International Business, ALBANY

New Zealand Population per Region and Percentage against Total Population
Used to ascertain Subsequent Research Sample Proportion of total Research Sample

	Northland Region	New Zealand	Percentage	Large	Small	Total
Males	68,910	1,823,007				
Females	71,220	1,914,273				
Total	140,130	3,737,277	3.70%	1	6	7
	Auckland Region	**New Zealand**				
Males	563,109	1,823,007				
Females	595,782	1,914,273				
Total	1,158,891	3,737,277	31%	6	56	62
	Waikato Region	**New Zealand**				
Males	175,962	1,823,007				
Females	181,764	1,914,273				
Total	357,726	3,737,277	9.60%	2	17	19
	Bay of Plenty Region	**New Zealand**				
Males	116,211	1,823,007				
Females	123,201	1,914,273				
Total	239,412	3,737,277	6.40%	1	12	13
	Gisborne Region	**New Zealand**				
Males	21,510	1,823,007				
Females	22,461	1,914,273				
Total	43,971	3,737,277	1.20%	0	2	2
	Hawke's Bay Region	**New Zealand**				
Males	69,675	1,823,007				
Females	73,272	1,914,273				
Total	142,947	3,737,277	3.80%	1	7	8
	Taranaki Region	**New Zealand**				
Males	50,418	1,823,007				
Females	52,437	1,914,273				
Total	102,858	3,737,277	2.80%	1	5	6
	Manawatu-Wanganui Region	**New Zealand**				
Males	107,301	1,823,007				
Females	112,788	1,914,273				
Total	220,089	3,737,277	5.90%	1	11	12

Continued over page:

	Wellington Region	New Zealand				
Males	205,869	1,823,007				
Females	217,899	1,914,273				
Total	423,765	3,737,277	11.30%	2	21	23
	West Coast Region	**New Zealand**				
Males	15,261	1,823,007				
Females	15,045	1,914,273				
Total	30,300	3,737,277	0.08%	0	1	1
	Canterbury Region	**New Zealand**				
Males	234,519	1,823,007				
Females	246,915	1,914,273				
Total	481,431	3,737,277	12.80%	3	23	26
	Otago Region	**New Zealand**				
Males	88,266	1,823,007				
Females	93,273	1,914,273				
Total	181,539	3,737,277	4.80%	1	9	10
	Southland Region	**New Zealand**				
Males	45,171	1,823,007				
Females	45,831	1,914,273				
Total	91,002	3,737,277	2.40%	0	5	5
	Tasman Region	**New Zealand**				
Males	20,670	1,823,007				
Females	20,685	1,914,273				
Total	41,352	3,737,277	1.11%	0	2	2
	Nelson Region	**New Zealand**				
Males	20,136	1,823,007				
Females	21,432	1,914,273				
Total	41,568	3,737,277	1.11%	0	2	2
	Marlborough Region	**New Zealand**				
Males	19,605	1,823,007				
Females	19,953	1,914,273				
Total	39,561	3,737,277	1%	0	2	2
	Area Outside Region	**New Zealand**				
Males	408	1,823,007				
Females	315	1,914,273				
Total	726	3,737,277	0%	0	0	0
			0.99102	19	181	200

Number of businesses per size category per region

Regions	50+	1 to 50	Total
Northland	108	5,649	5,757
Greater Auckland	1,699	38,550	40,249
Waikato/BOP	554	22,416	22,970
Hawke's Bay/East Coast	152	6,945	7,097
Taranaki	94	3,756	3,850
Manawatu/Wairarapa/Wanganui	188	8,893	9,081
Greater Wellington	535	13,814	14,349
Nelson/Marlb/W Coast	143	6,631	6,774
Canterbury	596	18,670	19,266
Otago/Southland/ Fiordland	278	11,270	11,548
		0	
Total businesses	4,347	136,594	140,941

Proportional business sample strata combined from New Zealand statistics regions into UBD directory amalgamated regions

Northland/ Greater Auckland			**Totals per combined regions**
	Nthld	Auck	
Small-medium [0-49]	6	56	
Large [50 plus]	1	6	
Total	7	62	69

Waik/BOP/Hawkes B/East Cost				
	Waik	BOP	Hawkes B/EC	
Small-medium [0-49]	17	12	9	
Large [50 plus]	2	1	1	
Total	19	13	10	42

Taranaki/Manawatu/Wairarapa/Wang			
	Taranaki	Man/Wairap/Wang	
Small-medium [0-49]	5	11	
Large [50 plus]	1	1	
Total	6	12	18

Greater Wellington		
	Wellington Region	
Small-medium [0-49]	21	
Large [50 plus]	2	
Total	23	23

Continued on next page:

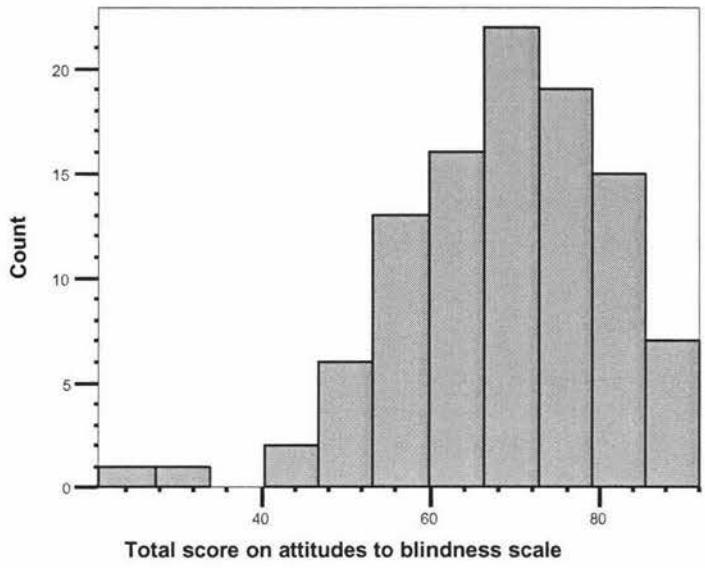
Nelson/Matlb/West C/Canterbury

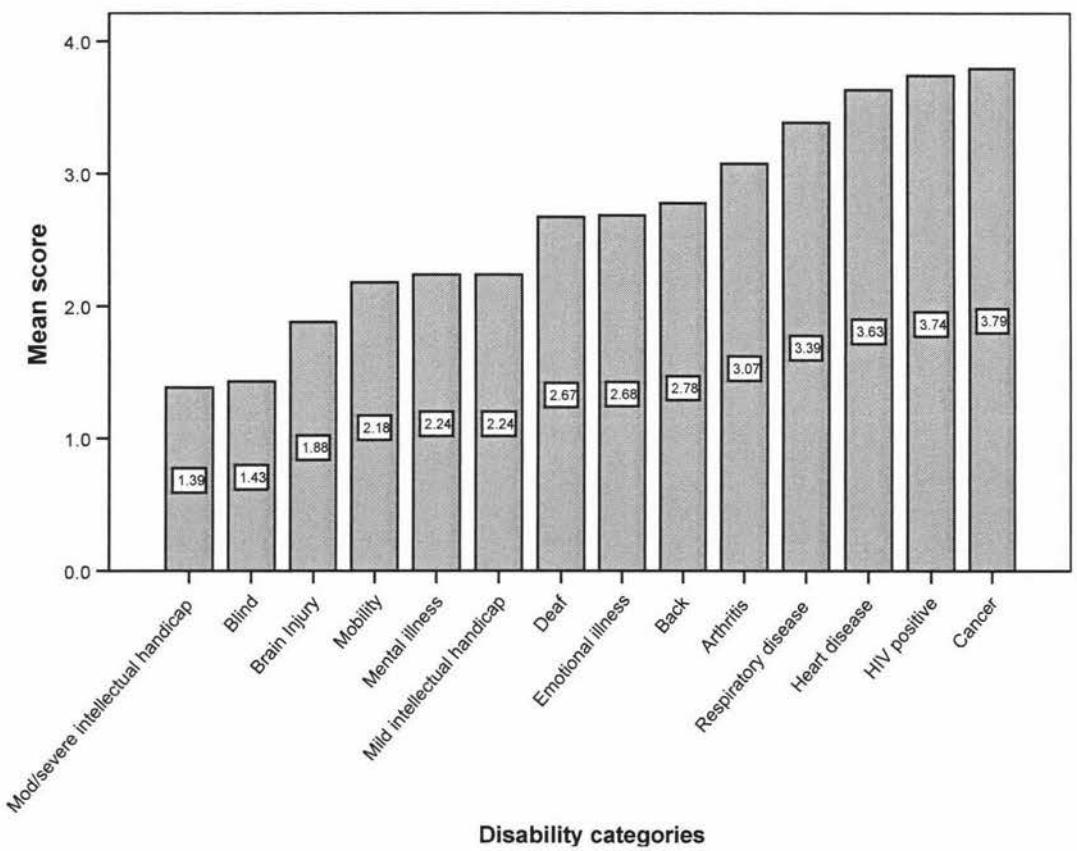
	Nelson/Marlb/West C	Canterbury	
Small-medium [0-49]	7	23	
Large [50 plus]	0	3	
Total	7	26	33

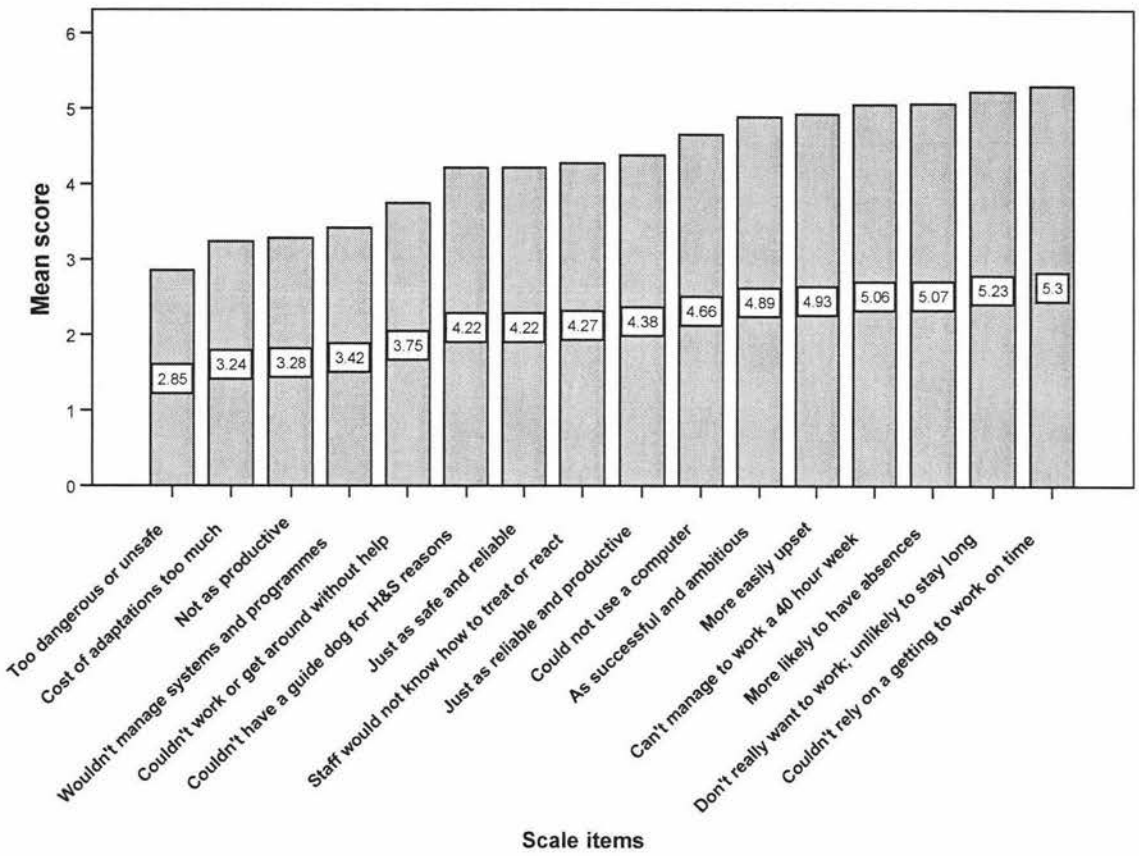
Otago Southland

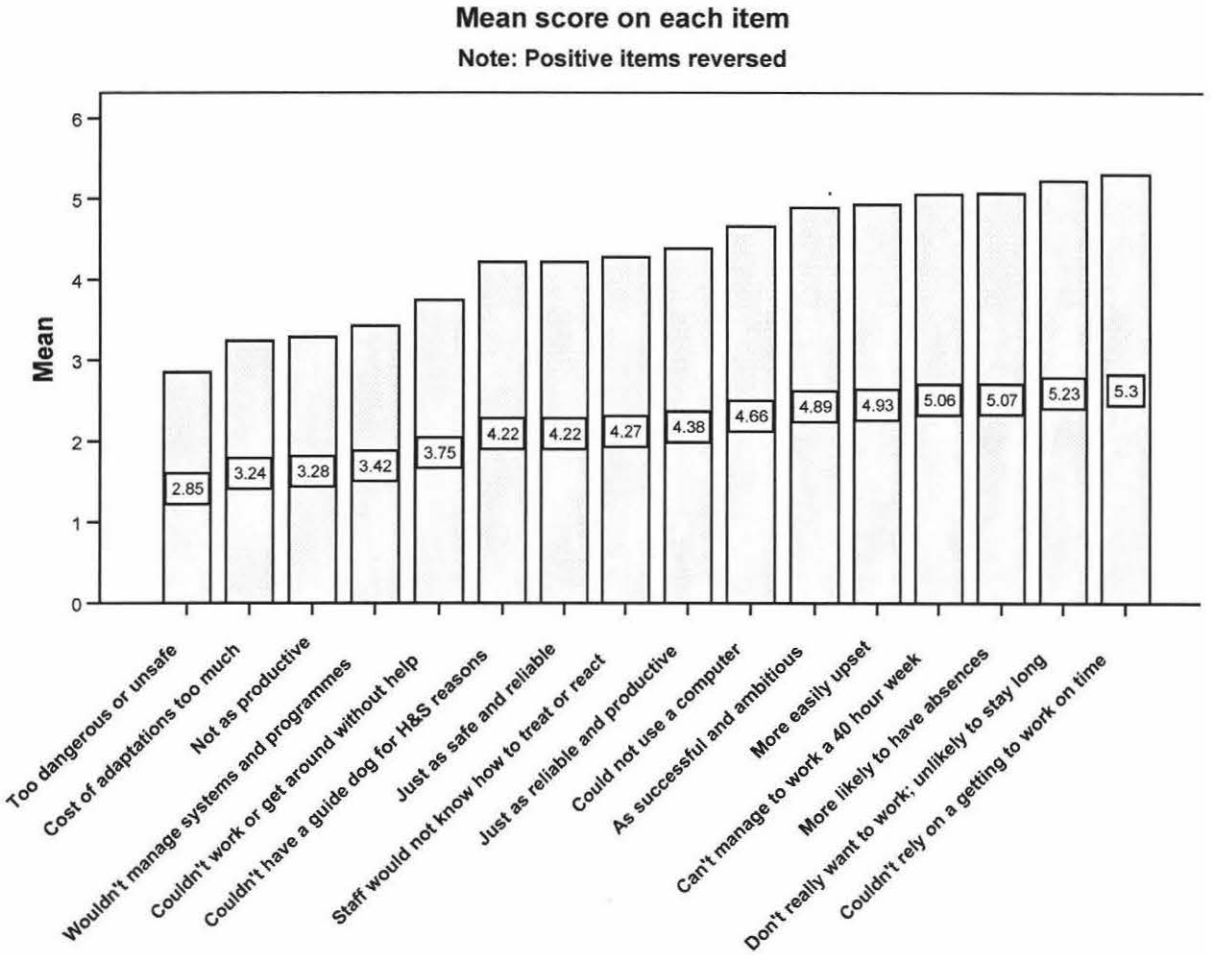
	Otago Sthland	
Small-medium [0-49]	14	
Large [50 plus]	1	
Total	15	15

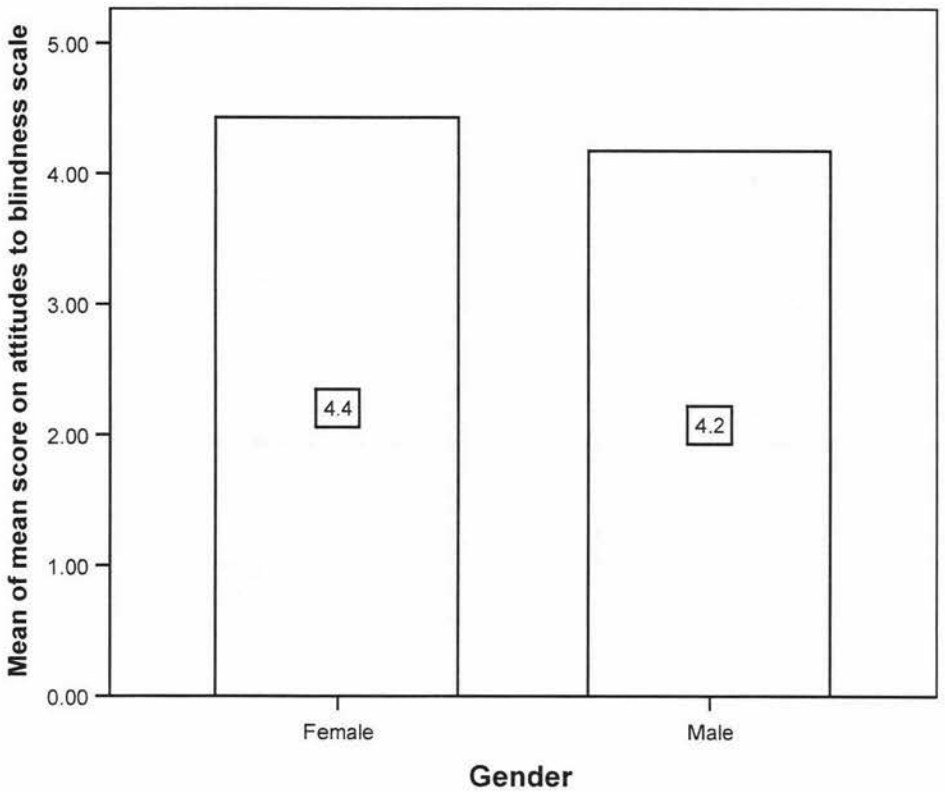
Cross check total 200

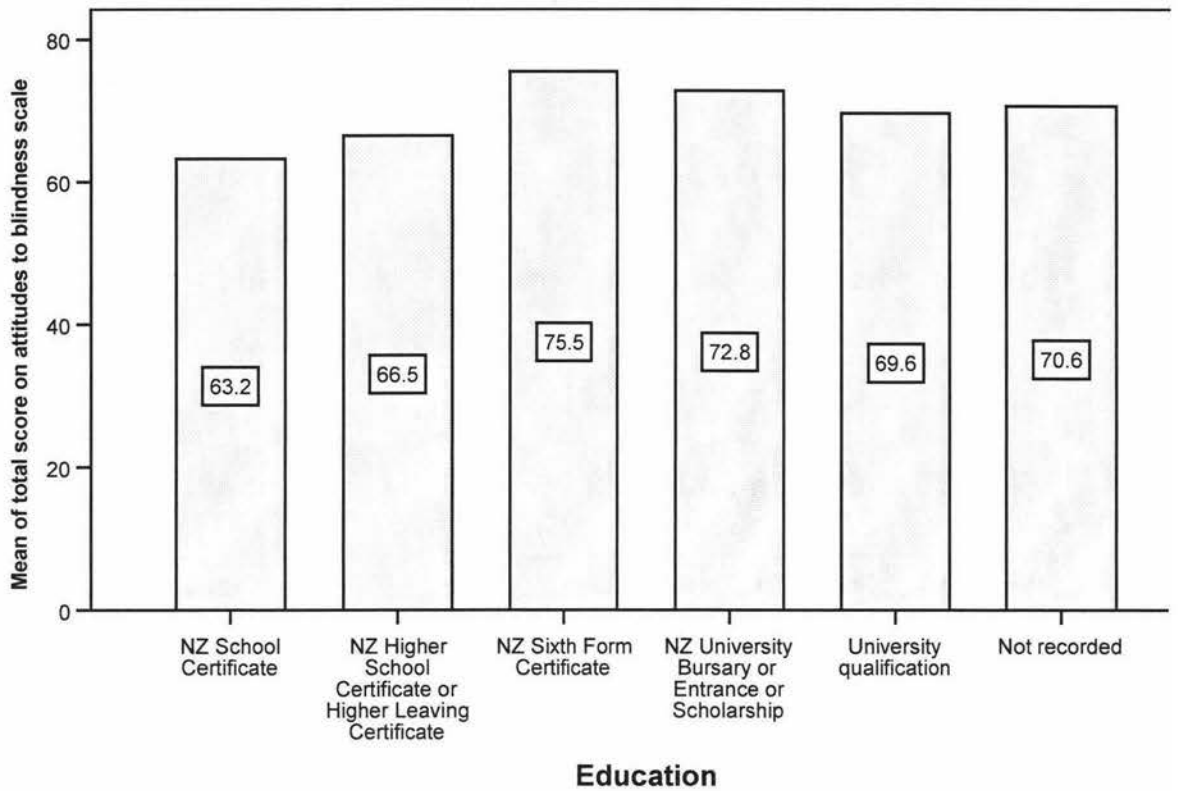

Count
20
15
10
5
0
40
60
80
Total score on attitudes to blindness scale

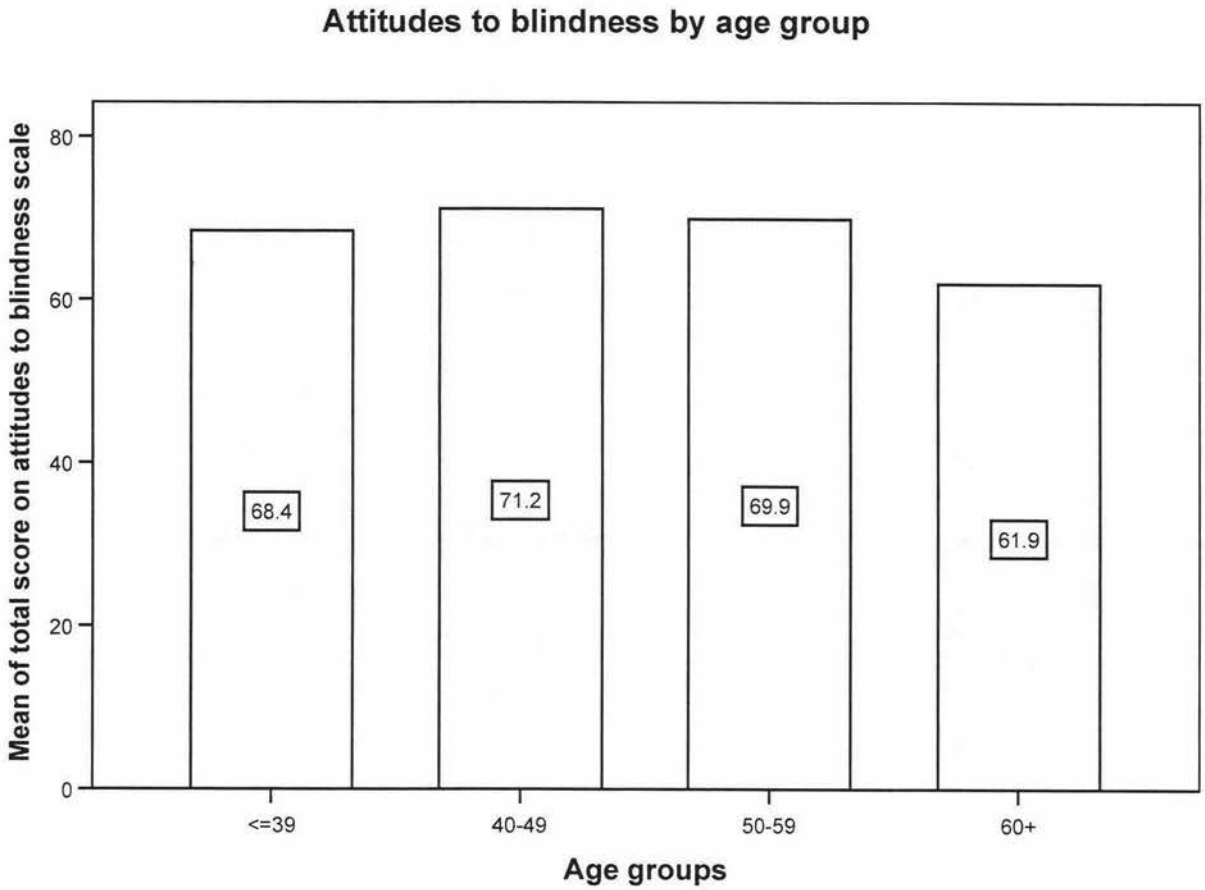

Mean score
4.0
3.0
2.0
1.0
0.0
1.39
1.43
1.88
2.18
2.24
2.24
2.67
2.68
2.78
3.07
3.39
3.63
3.74
3.79
Mod/severe intellectual handicap
Blind
Brain Injury
Mobility
Mental illness
Mild intellectual handicap
Deaf
Emotional illness
Back
Arthritis
Respiratory disease
Heart disease
HIV positive
Cancer
Disability categories

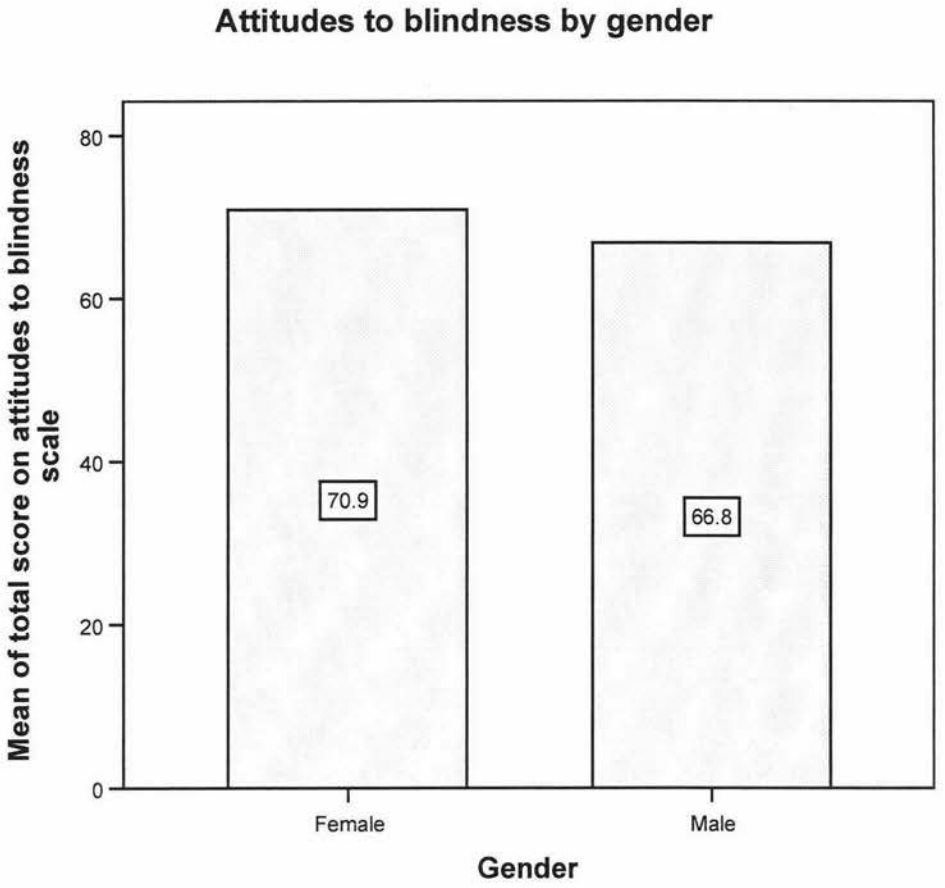

Mean score
0
1
2
3
4
5
6
2.85
3.24
3.28
3.42
3.75
4.22
4.22
4.27
4.38
4.66
4.89
4.93
5.06
5.07
5.23
5.3
Too dangerous or unsafe
Cost of adaptations too much
Not as productive
Wouldn't manage systems and programmes
Couldn't work or get around without help
Couldn't have a guide dog for H&S reasons
Just as safe and reliable
Staff would not know how to treat or react
Just as reliable and productive
Could not use a computer
As successful and ambitious
More easily upset
Can't manage to work a 40 hour week
More likely to have absences
Don't really want to work; unlikely to stay long
Couldn't rely on a getting to work on time
Scale items

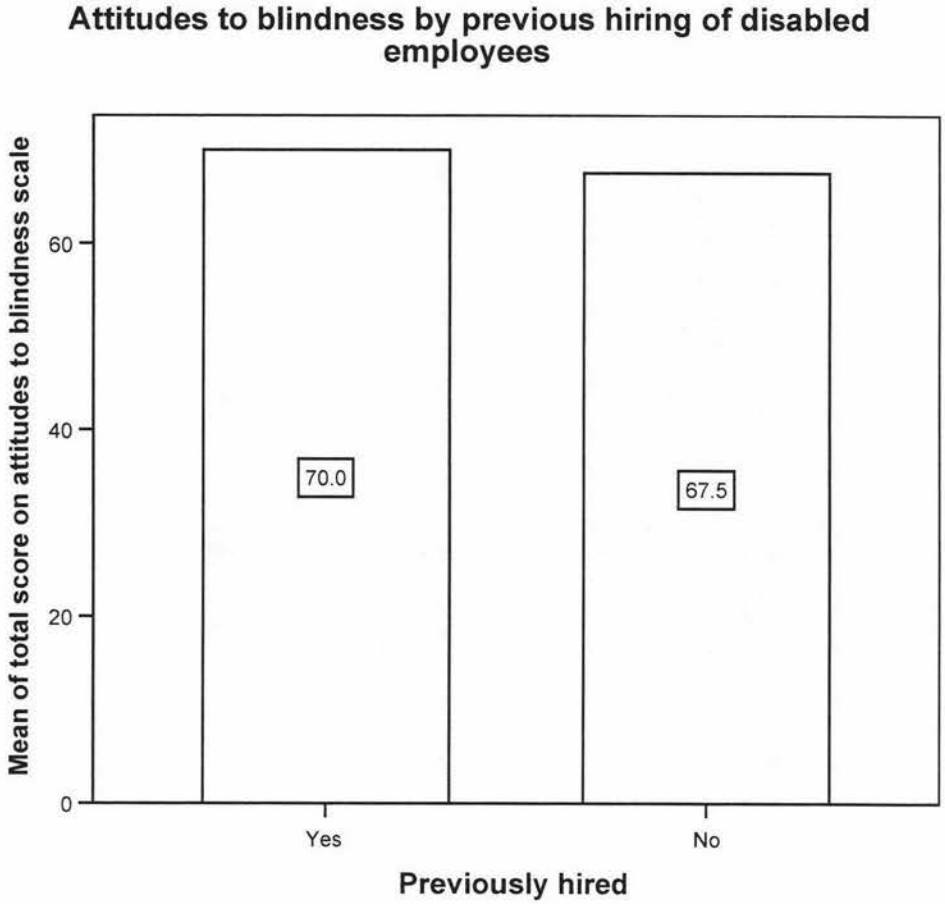

Mean score on each item
Note: Positive items reversed
Mean
0
1
2
3
4
5
6
2.85
3.24
3.28
3.42
3.75
4.22
4.22
4.27
4.38
4.66
4.89
4.93
5.06
5.07
5.23
5.3
Too dangerous or unsafe
Cost of adaptations too much
Not as productive
Wouldn't manage systems and programmes
Couldn't work or get around without help
Couldn't have a guide dog for H&S reasons
Just as safe and reliable
Staff would not know how to treat or react
Just as reliable and productive
Could not use a computer
As successful and ambitious
More easily upset
Can't manage to work a 40 hour week
More likely to have absences
Don't really want to work; unlikely to stay long
Couldn't rely on a getting to work on time

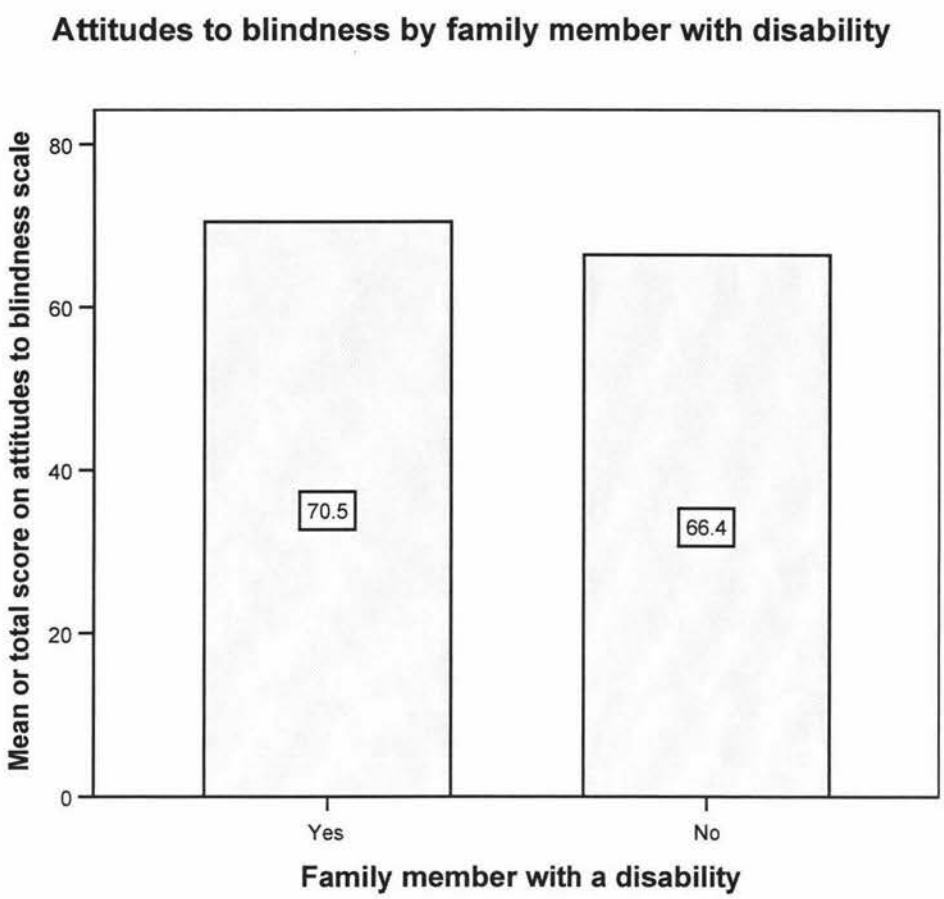

Attitudes to blindness by gender
Mean of mean score on attitudes to blindness scale
5.00
4.00
3.00
2.00
1.00
0.00
4.4
4.2
Female
Male
Gender


Attitudes to blindness by educational level
Mean of total score on attitudes to blindness scale
80
60
40
20
0
63.2
66.5
75.5
72.8
69.6
70.6
NZ School Certificate
NZ Higher School Certificate or Higher Leaving Certificate
NZ Sixth Form Certificate
NZ University Bursary or Entrance or Scholarship
University qualification
Not recorded
Education

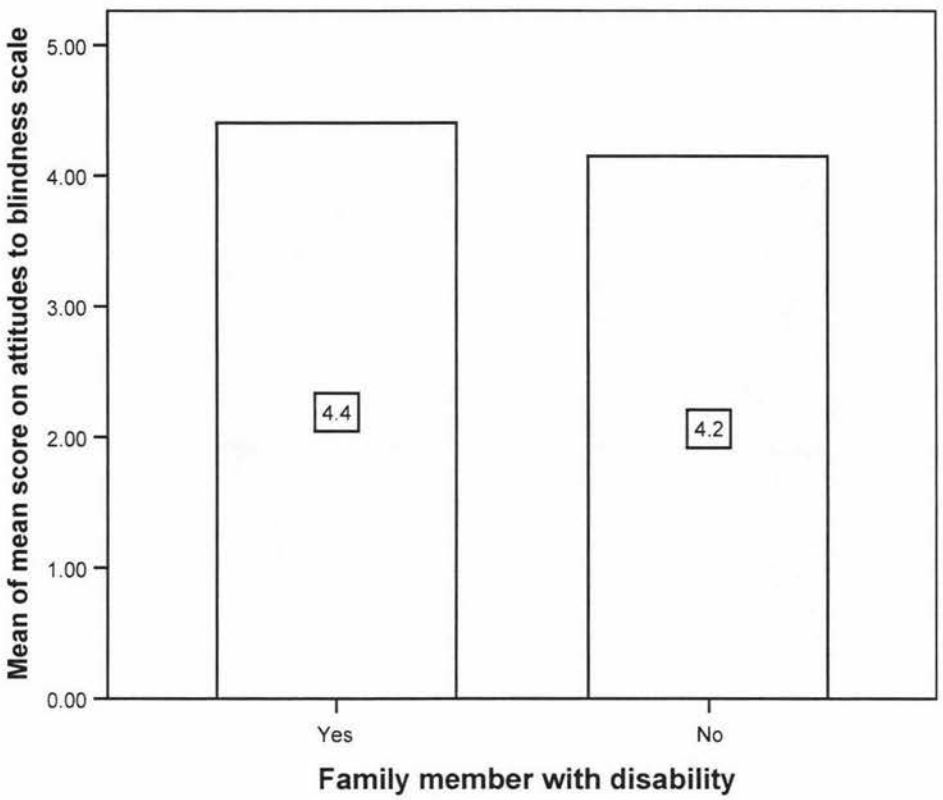

Attitudes to blindness by age group
Mean of total score on attitudes to blindness scale
80
60
40
20
0
68.4
71.2
69.9
61.9
<=39
40-49
50-59
60+
Age groups

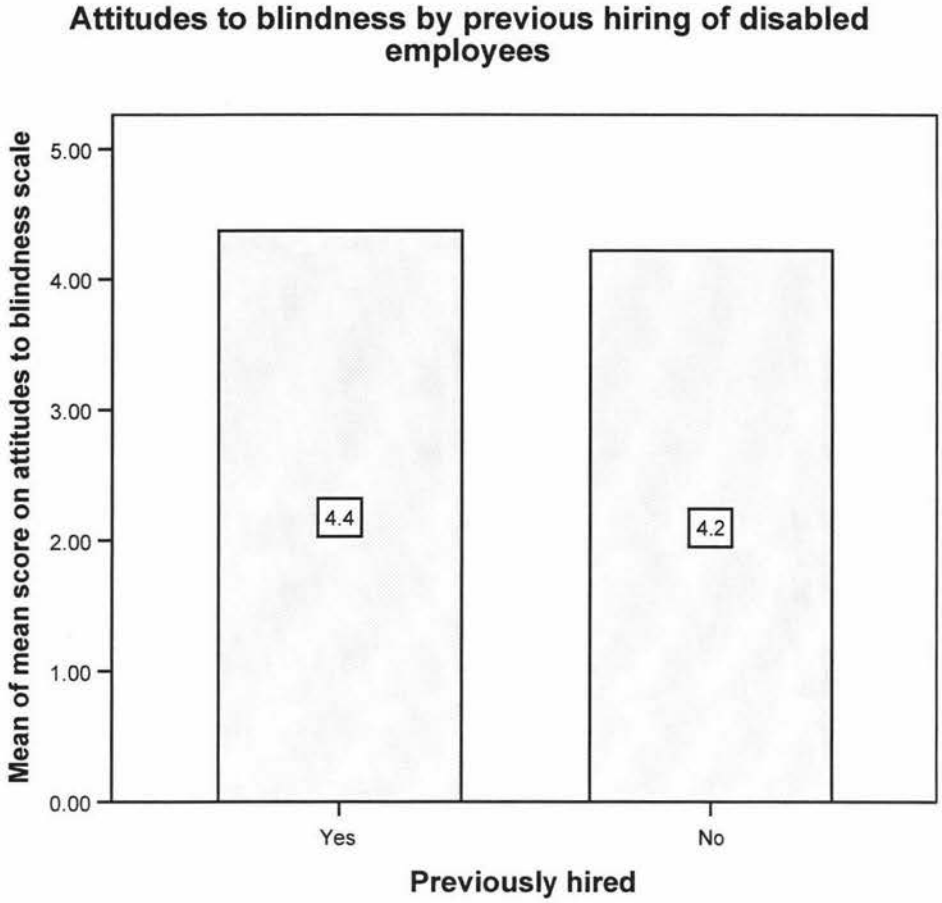

Attitudes to blindness by gender
Mean of total score on attitudes to blindness scale
80
60
40
20
0
70.9
66.8
Female
Male
Gender

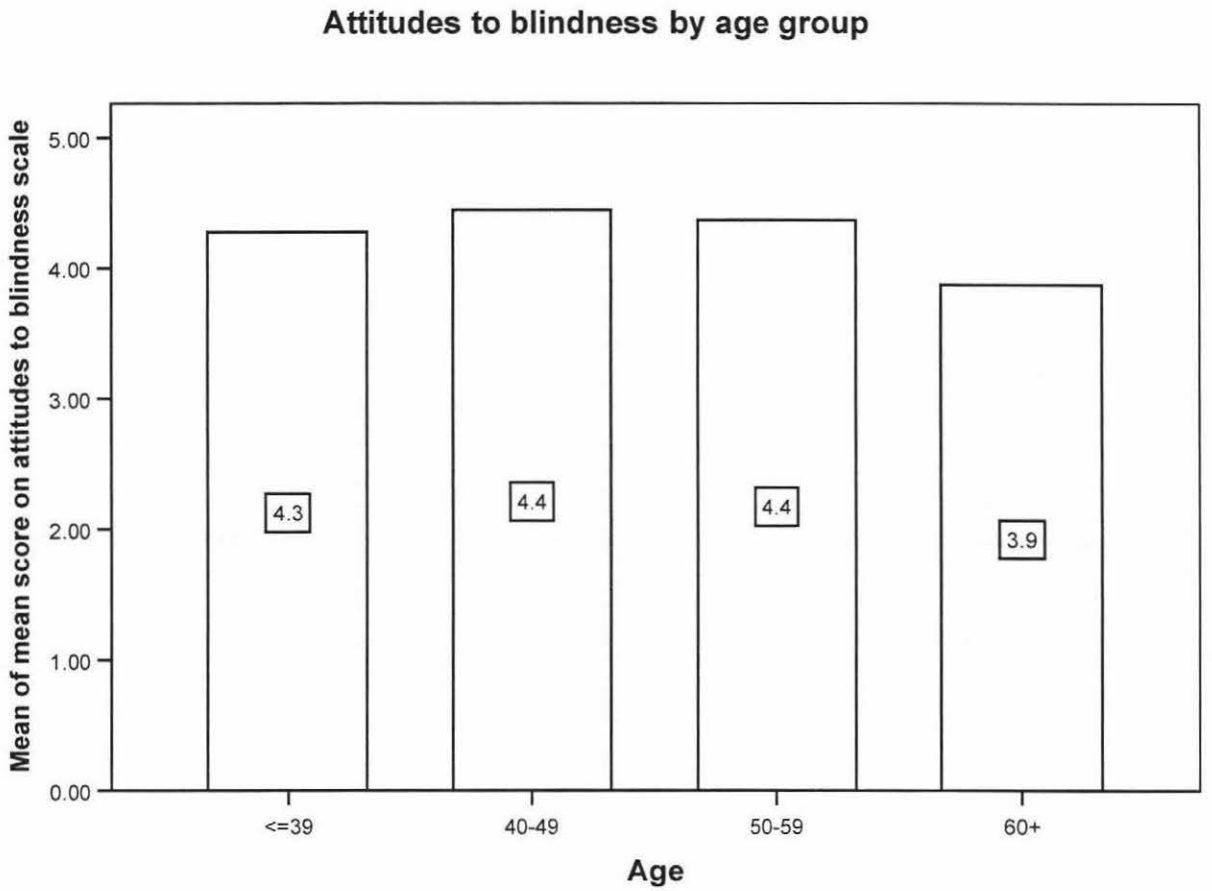

Attitudes to blindness by previous hiring of disabled employees
Mean of total score on attitudes to blindness scale
0
20
40
60
70.0
67.5
Yes
No
Previously hired

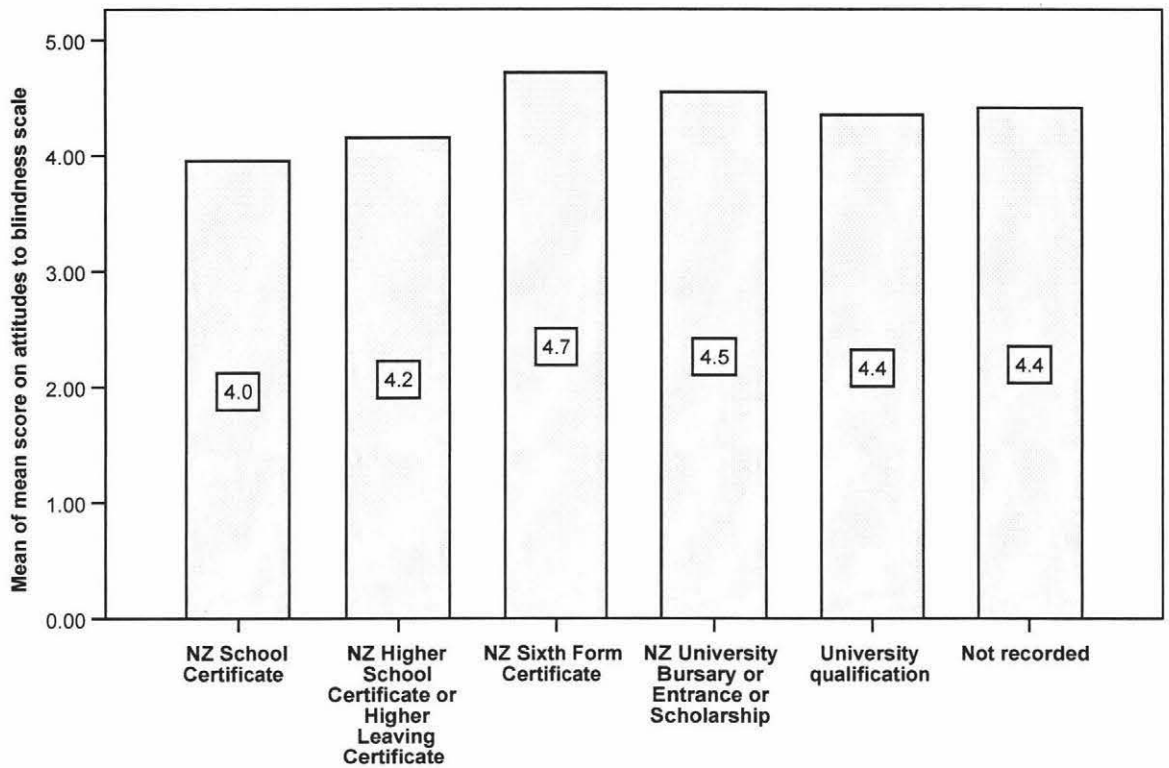

Attitudes to blindness by family member with disability
Mean or total score on attitudes to blindness scale
80
60
40
20
0
70.5
66.4
Yes
No
Family member with a disability

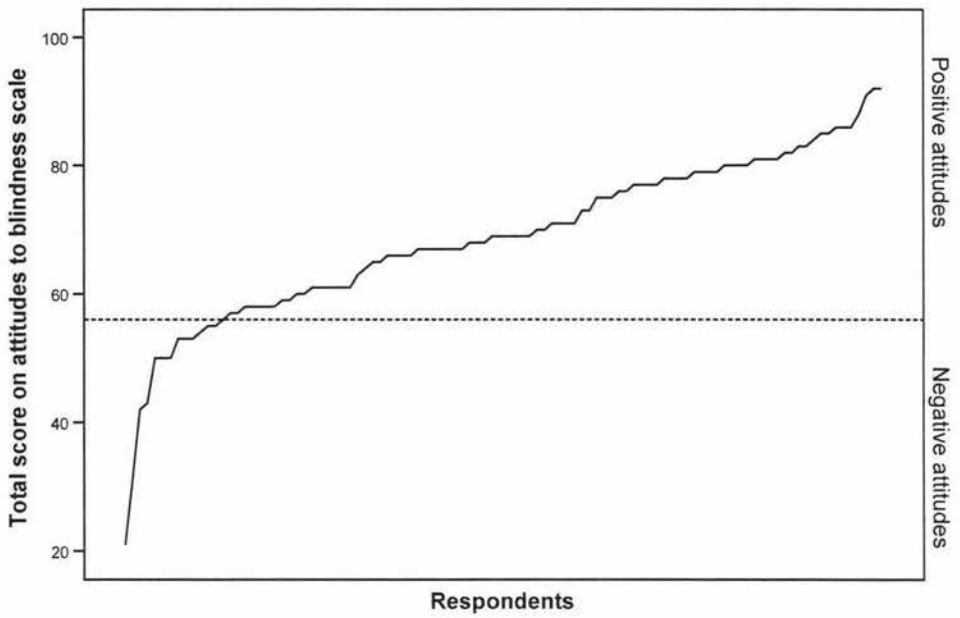
Attitudes to blindness by family member with disability

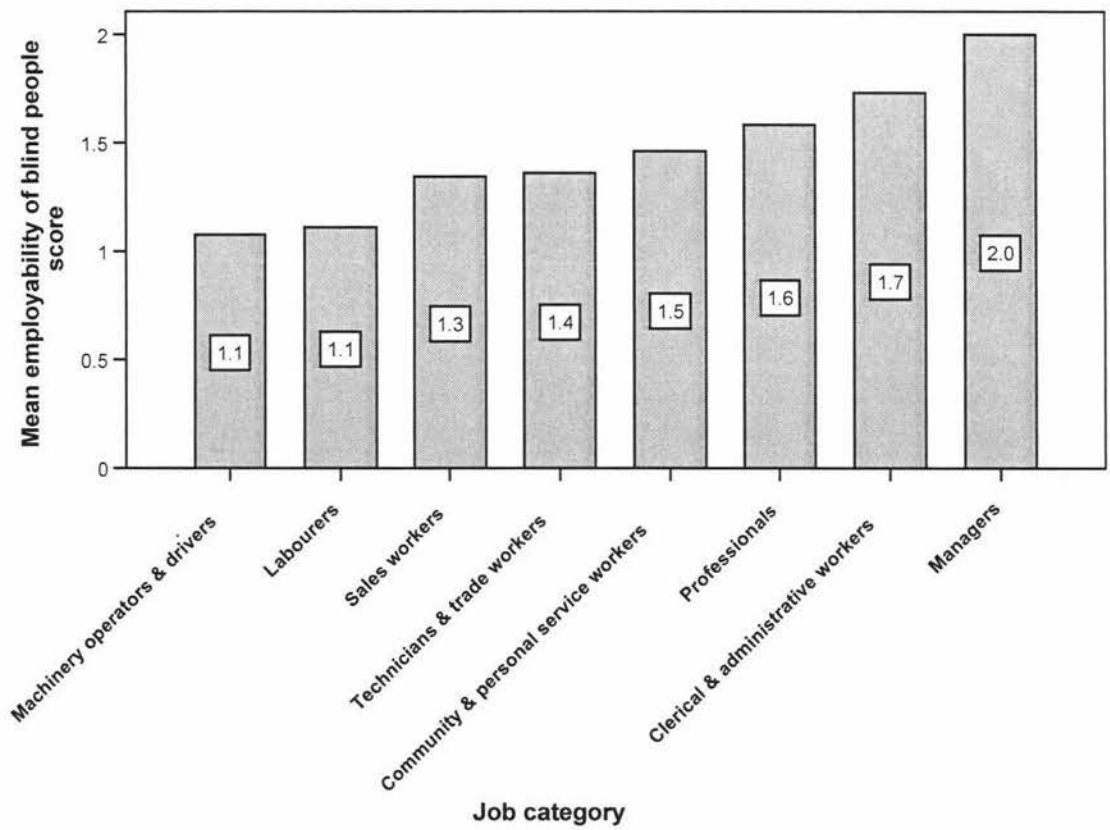



Attitudes to blindness by previous hiring of disabled employees
Mean of mean score on attitudes to blindness scale
5.00
4.00
3.00
2.00
1.00
0.00
4.4
4.2
Yes
No
Previously hired


Attitudes to blindness by age group
Mean of mean score on attitudes to blindness scale
5.00
4.00
3.00
2.00
1.00
0.00
4.3
4.4
4.4
3.9
<=39
40-49
50-59
60+
Age


Attitudes to blindness by education level
Mean of mean score on attitudes to blindness scale
5.00
4.00
3.00
2.00
1.00
0.00
4.0
4.2
4.7
4.5
4.4
4.4
NZ School Certificate
NZ Higher School Certificate or Higher Leaving Certificate
NZ Sixth Form Certificate
NZ University Bursary or Entrance or Scholarship
University qualification
Not recorded


Total score on attitudes to blindness scale
100
80
60
40
20
Positive attitudes
Negative attitudes
Respondents


Mean employability of blind people score
2
1.5
1
0.5
0
1.1
1.1
1.3
1.4
1.5
1.6
1.7
2.0
Machinery operators & drivers
Labourers
Sales workers
Technicians & trade workers
Community & personal service workers
Professionals
Clerical & administrative workers
Managers
Job category

T-Test: previously hired disabled staff

Group Statistics

	Previously hired	N	Mean	Std. Deviation	Std. Error Mean
Total score on Attitudes to Blind Person scale	Yes	51	70.00	11.326	1.586
	No	51	67.53	13.818	1.935

Independent Samples Test

		Levene Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Total score on Attitudes to Blind Person scale	Equal variances assumed	.186	.667	.988	100	.326	2.471	2.502	-2.493	7.434
	Equal variances not assumed			.988	96.290	.326	2.471	2.502	-2.495	7.436

T-Test: family member with disability

Group Statistics

	Family member with disability	N	Mean	Std. Deviation	Std. Error Mean
Total score on Attitudes to Blind Person scale	Yes	59	70.47	11.276	1.468
	No	43	66.42	14.085	2.148

Independent Samples Test

		Levene Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Total score on Attitudes to Blind Person scale	Equal variances assumed	.848	.359	1.614	100	.110	4.056	2.513	-.930	9.042
	Equal variances not assumed			1.559	78.066	.123	4.056	2.602	-1.124	9.235

T-Test: Gender

Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Total score on Attitudes to Blind Person scale	Female	49	70.88	12.370	1.767
	Male	53	66.81	12.672	1.741

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Total score on attitudes to blindness scale	Equal variances assumed	.204	.652	1.638	100	.105	4.066	2.483	-.860	8.992
	Equal variances not assumed			1.639	99.696	.104	4.066	2.480	-.855	8.988

One-way ANOVAs

One-way: age

Test of Homogeneity of Variances

Total score on Attitudes towards Blind Persons scale

Levene Statistic	df1	df2	Sig.
2.400	3	98	.072

ANOVA

Total score on Attitudes Towards Blind Persons scale

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	826.637	3	275.546	1.766	.159
Within Groups	15289.716	98	156.018		
Total	16116.353	101			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Total score on Attitudes to Blind Persons scale
Tukey HSD

(I) Age	(J) Age	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
<=39	40-49	-2.735	3.010	.800	-10.60	5.13
	50-59	-1.483	3.483	.974	-10.59	7.62
	60+	6.494	4.042	.380	-4.07	17.06
40-49	<=39	2.735	3.010	.800	-5.13	10.60
	50-59	1.252	3.540	.985	-8.00	10.50
	60+	9.228	4.090	.116	-1.46	19.92
50-59	<=39	1.483	3.483	.974	-7.62	10.59
	40-49	-1.252	3.540	.985	-10.50	8.00
	60+	7.977	4.450	.283	-3.65	19.61
60+	<=39	-6.494	4.042	.380	-17.06	4.07
	40-49	-9.228	4.090	.116	-19.92	1.46
	50-59	-7.977	4.450	.283	-19.61	3.65

Homogeneous Subsets

Total score on attitudes to blindness scale

Tukey HSD

Age	N	Subset for alpha = .05
		1
60+	13	61.92
<=39	36	68.42
50-59	20	69.90
40-49	33	71.15
Sig.		.078

Means for groups in homogeneous subsets are displayed.
a Uses Harmonic Mean Sample Size = 21.621.
b The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

One-way: Education level

Test of Homogeneity of Variances

Total score on Attitudes to Blind Persons scale

Levene Statistic	df1	df2	Sig.
.321	4	89	.863

ANOVA

Total score on Attitudes to Blind Persons scale

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1182.410	4	295.602	1.879	.121
Within Groups	14002.026	89	157.326		
Total	15184.436	93			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Total score on Attitudes to Blind Persons scale

Tukey HSD

(I) Education	(J) Education	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
NZ School Certificate	NZ Higher School Certificate or Higher Leaving Certificate	-3.283	6.795	.989	-22.20	15.64
	NZ Sixth Form Certificate	-12.283	5.750	.214	-28.29	3.73
	NZ University Bursary or Entrance or Scholarship	-9.560	4.932	.305	-23.29	4.17
	University qualification	-6.417	3.141	.254	-15.16	2.33
NZ Higher School Certificate or Higher Leaving Certificate	NZ School Certificate	3.283	6.795	.989	-15.64	22.20
	NZ Sixth Form Certificate	-9.000	8.096	.800	-31.54	13.54
	NZ University Bursary or Entrance or Scholarship	-6.278	7.537	.920	-27.27	14.71
	University qualification	-3.135	6.508	.989	-21.26	14.99

NZ Sixth Form Certificate	NZ School Certificate	12.283	5.750	.214	-3.73	28.29
	NZ Higher School Certificate or Higher Leaving Certificate	9.000	8.096	.800	-13.54	31.54
	NZ University Bursary or Entrance or Scholarship	2.722	6.611	.994	-15.69	21.13
	University qualification	5.865	5.408	.814	-9.19	20.92
NZ University Bursary or Entrance or Scholarship	NZ School Certificate	9.560	4.932	.305	-4.17	23.29
	NZ Higher School Certificate or Higher Leaving Certificate	6.278	7.537	.920	-14.71	27.27
	NZ Sixth Form Certificate	-2.722	6.611	.994	-21.13	15.69
	University qualification	3.143	4.528	.957	-9.47	15.75
University qualification	NZ School Certificate	6.417	3.141	.254	-2.33	15.16
	NZ Higher School Certificate or Higher Leaving Certificate	3.135	6.508	.989	-14.99	21.26
	NZ Sixth Form Certificate	-5.865	5.408	.814	-20.92	9.19
	NZ University Bursary or Entrance or Scholarship	-3.143	4.528	.957	-15.75	9.47

Homogeneous Subsets

Total score on Attitudes to Blind Persons scale

Tukey HSD

Education	N	Subset for alpha = .05 1
NZ School Certificate	23	63.22
NZ Higher School Certificate or Higher Leaving Certificate	4	66.50
University qualification	52	69.63
NZ University Bursary or Entrance or Scholarship	9	72.78
NZ Sixth Form Certificate	6	75.50
Sig.		.267

Means for groups in homogeneous subsets are displayed.
a Uses Harmonic Mean Sample Size = 8.468.
b The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

One-way: Job categories

Descriptives

Employability of blind people

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Managers	4	2.00	1.414	.707	-.25	4.25	1	4
Professionals	36	1.58	.770	.128	1.32	1.84	1	3
Technicians & trade workers	50	1.36	.722	.102	1.15	1.57	1	4
Community & personal service workers	13	1.46	.660	.183	1.06	1.86	1	3
Clerical & administrative workers	26	1.73	1.041	.204	1.31	2.15	1	4
Sales workers	32	1.34	.653	.115	1.11	1.58	1	3
Machinery operators & drivers	13	1.08	.277	.077	.91	1.24	1	2
Labourers	27	1.11	.320	.062	.98	1.24	1	2
Total	201	1.41	.744	.052	1.31	1.52	1	4

Test of Homogeneity of Variances

Employability of blind people

Levene Statistic	df1	df2	Sig.
9.114	7	193	.000

ANOVA

Employability of blind people

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	9.302	7	1.329	2.529	.016
Within Groups	101.425	193	.526		
Total	110.726	200			

Post Hoc Tests
One-way

Descriptives

Employability of blind people

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Managers	4	2.00	1.414	.707	-.25	4.25	1	4
Professionals	36	1.58	.770	.128	1.32	1.84	1	3
Technicians & trade workers	50	1.36	.722	.102	1.15	1.57	1	4
Community & personal service workers	13	1.46	.660	.183	1.06	1.86	1	3
Clerical & administrative workers	26	1.73	1.041	.204	1.31	2.15	1	4
Sales workers	32	1.34	.653	.115	1.11	1.58	1	3
Machinery operators & drivers	13	1.08	.277	.077	.91	1.24	1	2
Labourers	27	1.11	.320	.062	.98	1.24	1	2
Total	201	1.41	.744	.052	1.31	1.52	1	4

Test of Homogeneity of Variances

Employability of blind people

Levene Statistic	df1	df2	Sig.
9.114	7	193	.000

ANOVA

Employability of blind people

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	9.302	7	1.329	2.529	.016
Within Groups	101.425	193	.526		
Total	110.726	200			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Employability of blind people
Dennett T3

(I) Job category	(J) Job category	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Managers	Professionals	.417	.719	1.000	-4.32	5.15
	Technicians & trade workers	.640	.714	.997	-4.15	5.43
	Community & personal service workers	.538	.730	1.000	-4.06	5.13
	Clerical & administrative workers	.269	.736	1.000	-4.27	4.80
	Sales workers	.656	.716	.996	-4.10	5.42
	Machinery operators & drivers	.923	.711	.948	-3.91	5.75
	Labourers	.889	.710	.957	-3.96	5.74
Professionals	Managers	-.417	.719	1.000	-5.15	4.32
	Technicians & trade workers	.223	.164	.992	-.31	.75
	Community & personal service workers	.122	.224	1.000	-.65	.89
	Clerical & administrative workers	-.147	.241	1.000	-.94	.65
	Sales workers	.240	.173	.990	-.32	.80
	Machinery operators & drivers	.506(*)	.150	.038	.01	1.00
	Labourers	.472(*)	.142	.045	.01	.94

Technicians & trade workers	Managers	-.640	.714	.997	-5.43	4.15
	Professionals	-.223	.164	.992	-.75	.31
	Community & personal service workers	-.102	.210	1.000	-.84	.64
	Clerical & administrative workers	-.371	.228	.935	-1.13	.39
	Sales workers	.016	.154	1.000	-.48	.51
	Machinery operators & drivers	.283	.128	.546	-.14	.70
	Labourers	.249	.119	.651	-.14	.63
Community & personal service workers	Managers	-.538	.730	1.000	-5.13	4.06
	Professionals	-.122	.224	1.000	-.89	.65
	Technicians & trade workers	.102	.210	1.000	-.64	.84
	Clerical & administrative workers	-.269	.274	1.000	-1.19	.65
	Sales workers	.118	.216	1.000	-.64	.87
	Machinery operators & drivers	.385	.199	.751	-.34	1.11
	Labourers	.350	.193	.822	-.36	1.06
Clerical & administrative workers	Managers	-.269	.736	1.000	-4.80	4.27
	Professionals	.147	.241	1.000	-.65	.94
	Technicians & trade workers	.371	.228	.935	-.39	1.13
	Community & personal service workers	.269	.274	1.000	-.65	1.19
	Sales workers	.387	.235	.926	-.39	1.17
	Machinery operators & drivers	.654	.218	.126	-.08	1.39
	Labourers	.620	.213	.158	-.10	1.34

Sales workers	Managers	-.656	.716	.996	-5.42	4.10
	Professionals	-.240	.173	.990	-.80	.32
	Technicians & trade workers	-.016	.154	1.000	-.51	.48
	Community & personal service workers	-.118	.216	1.000	-.87	.64
	Clerical & administrative workers	-.387	.235	.926	-1.17	.39
	Machinery operators & drivers	.267	.139	.776	-.19	.73
	Labourers	.233	.131	.869	-.20	.66
Machinery operators & drivers	Managers	-.923	.711	.948	-5.75	3.91
	Professionals	-.506(*)	.150	.038	-1.00	-.01
	Technicians & trade workers	-.283	.128	.546	-.70	.14
	Community & personal service workers	-.385	.199	.751	-1.11	.34
	Clerical & administrative workers	-.654	.218	.126	-1.39	.08
	Sales workers	-.267	.139	.776	-.73	.19
	Labourers	-.034	.099	1.000	-.37	.30
Labourers	Managers	-.889	.710	.957	-5.74	3.96
	Professionals	-.472(*)	.142	.045	-.94	-.01
	Technicians & trade workers	-.249	.119	.651	-.63	.14
	Community & personal service workers	-.350	.193	.822	-1.06	.36
	Clerical & administrative workers	-.620	.213	.158	-1.34	.10
	Sales workers	-.233	.131	.869	-.66	.20
	Machinery operators & drivers	.034	.099	1.000	-.30	.37

* The mean difference is significant at the .05 level.

One-way: blindness vs. the others

Descriptives

Mean disability score

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Blindness (visually impaired)	102	1.422	.6477	.0641	1.294	1.549	1.0	4.0
Mild intellectual handicap	101	2.178	1.0784	.1073	1.965	2.391	1.0	5.0
Moderate/severe intellectual handicap	102	1.382	.6936	.0687	1.246	1.519	1.0	5.0
Deaf/Hard of hearing	102	2.686	1.1300	.1119	2.464	2.908	1.0	5.0
Mobility (wheelchair)	102	2.211	1.2982	.1285	1.956	2.466	1.0	5.0
Back limitation	101	2.792	1.1603	.1155	2.563	3.021	1.0	5.0
Arthritis	100	3.085	1.1148	.1115	2.864	3.306	1.0	5.0
Mental illness	98	2.230	1.0605	.1071	2.017	2.442	1.0	5.0
Emotional illness	98	2.633	1.0996	.1111	2.412	2.853	1.0	5.0
Brain injury	102	1.877	.8828	.0874	1.704	2.051	1.0	5.0
Heart disease	101	3.609	1.1992	.1193	3.372	3.846	1.0	5.0
Respiratory disease	100	3.430	1.2082	.1208	3.190	3.670	1.0	5.0
Cancer	97	3.840	1.2066	.1225	3.597	4.083	1.0	5.0
HIV positive	99	3.727	1.3670	.1374	3.455	4.000	1.0	5.0
Total	1405	2.643	1.3465	.0359	2.572	2.713	1.0	5.0

Test of Homogeneity of Variances

Mean disability score

Levene Statistic	df1	df2	Sig.
10.994	13	1391	.000

ANOVA

Mean disability score

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	865.245	13	66.557	55.095	.000
Within Groups	1680.392	1391	1.208		
Total	2545.638	1404			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Mean disability score
Dennett t (2-sided)

(I) Disability type	(J) Disability type	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Mild intellectual handicap	Blindness (visually impaired)	.7566(*)	.1543	.000	.325	1.188
Moderate/severe intellectual handicap	Blindness (visually impaired)	-.0392	.1539	1.000	-.469	.391
Deaf/Hard of Hearing	Blindness (visually impaired)	1.2647(*)	.1539	.000	.834	1.695
Mobility (wheelchair)	Blindness (visually impaired)	.7892(*)	.1539	.000	.359	1.219
Back limitation	Blindness (visually impaired)	1.3705(*)	.1543	.000	.939	1.802
Arthritis	Blindness (visually impaired)	1.6634(*)	.1547	.000	1.231	2.096
Mental illness	Blindness (visually impaired)	.8080(*)	.1555	.000	.373	1.243
Emotional illness	Blindness (visually impaired)	1.2111(*)	.1555	.000	.776	1.646
Brain injury	Blindness (visually impaired)	.4559(*)	.1539	.031	.026	.886
Heart disease	Blindness (visually impaired)	2.1873(*)	.1543	.000	1.756	2.619
Respiratory disease	Blindness (visually impaired)	2.0084(*)	.1547	.000	1.576	2.441
Cancer	Blindness (visually impaired)	2.4186(*)	.1559	.000	1.983	2.854
HIV positive	Blindness (visually impaired)	2.3057(*)	.1551	.000	1.872	2.739

* The mean difference is significant at the .05 level.
a Dennett t-test treats one group as a control, and compares all other groups against it.

One-way

Descriptives

Mean disability score

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Blindness (visually impaired)	102	1.422	.6477	.0641	1.294	1.549	1.0	4.0
Mild intellectual handicap	101	2.178	1.0784	.1073	1.965	2.391	1.0	5.0
Moderate/severe intellectual handicap	102	1.382	.6936	.0687	1.246	1.519	1.0	5.0
Deaf/Hard of Hearing	102	2.686	1.1300	.1119	2.464	2.908	1.0	5.0
Mobility (wheelchair)	102	2.211	1.2982	.1285	1.956	2.466	1.0	5.0
Back limitation	101	2.792	1.1603	.1155	2.563	3.021	1.0	5.0
Arthritis	100	3.085	1.1148	.1115	2.864	3.306	1.0	5.0
Mental illness	98	2.230	1.0605	.1071	2.017	2.442	1.0	5.0
Emotional illness	98	2.633	1.0996	.1111	2.412	2.853	1.0	5.0
Brain injury	102	1.877	.8828	.0874	1.704	2.051	1.0	5.0
Heart disease	101	3.609	1.1992	.1193	3.372	3.846	1.0	5.0
Respiratory disease	100	3.430	1.2082	.1208	3.190	3.670	1.0	5.0
Cancer	97	3.840	1.2066	.1225	3.597	4.083	1.0	5.0
HIV positive	99	3.727	1.3670	.1374	3.455	4.000	1.0	5.0
Total	1405	2.643	1.3465	.0359	2.572	2.713	1.0	5.0

Test of Homogeneity of Variances

Mean disability score

Levene Statistic	df1	df2	Sig.
10.994	13	1391	.000

ANOVA

Mean disability score

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	865.245	13	66.557	55.095	.000
Within Groups	1680.392	1391	1.208		
Total	2545.638	1404			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Mean disability score
Dennett T3

(I) Disability type	(J) Disability type	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Blindness (visually impaired)	Mild intellectual handicap	-.7566(*)	.1250	.000	-1.196	-.317
	Moderate/severe intellectual handicap	.0392	.0940	1.000	-.290	.368
	Deaf/Hard of Hearing	-1.2647(*)	.1290	.000	-1.718	-.811
	Mobility (wheelchair)	-.7892(*)	.1437	.000	-1.295	-.284
	Back limitation	-1.3705(*)	.1321	.000	-1.835	-.906
	Arthritis	-1.6634(*)	.1286	.000	-2.116	-1.211
	Mental illness	-.8080(*)	.1249	.000	-1.247	-.369
	Emotional illness	-1.2111(*)	.1283	.000	-1.662	-.760
	Brain injury	-.4559(*)	.1084	.004	-.836	-.076
	Heart disease	-2.1873(*)	.1355	.000	-2.664	-1.711
	Respiratory disease	-2.0084(*)	.1368	.000	-2.490	-1.527
	Cancer	-2.4186(*)	.1383	.000	-2.906	-1.932
	HIV positive	-2.3057(*)	.1516	.000	-2.840	-1.771
Mild intellectual handicap	Blindness (visually impaired)	.7566(*)	.1250	.000	.317	1.196
	Moderate/severe intellectual handicap	.7959(*)	.1274	.000	.349	1.243
	Deaf/Hard of Hearing	-.5081	.1550	.104	-1.051	.035
	Mobility (wheelchair)	-.0326	.1674	1.000	-.619	.554

	Back limitation	-.6139(*)	.1576	.012	-1.166	-.062
	Arthritis	-.9068(*)	.1547	.000	-1.449	-.365
	Mental illness	-.0514	.1516	1.000	-.582	.480
	Emotional illness	-.4544	.1544	.274	-.995	.086
	Brain injury	.3008	.1384	.925	-.184	.786
	Heart disease	-1.4307(*)	.1605	.000	-1.993	-.869
	Respiratory disease	-1.2518(*)	.1616	.000	-1.818	-.686
	Cancer	-1.6620(*)	.1629	.000	-2.233	-1.091
	HIV positive	-1.5491(*)	.1743	.000	-2.160	-.938
Moderate/severe intellectual handicap	Blindness (visually impaired)	-.0392	.0940	1.000	-.368	.290
	Mild intellectual handicap	-.7959(*)	.1274	.000	-1.243	-.349
	Deaf/Hard of Hearing	-1.3039(*)	.1313	.000	-1.765	-.843
	Mobility (wheelchair)	-.8284(*)	.1457	.000	-1.341	-.316
	Back limitation	-1.4097(*)	.1343	.000	-1.882	-.938
	Arthritis	-1.7026(*)	.1309	.000	-2.163	-1.243
	Mental illness	-.8472(*)	.1272	.000	-1.294	-.400
	Emotional illness	-1.2503(*)	.1306	.000	-1.709	-.791
	Brain injury	-.4951(*)	.1112	.001	-.885	-.106
	Heart disease	-2.2266(*)	.1377	.000	-2.710	-1.743
	Respiratory disease	-2.0476(*)	.1390	.000	-2.536	-1.559
	Cancer	-2.4579(*)	.1405	.000	-2.952	-1.964
	HIV positive	-2.3449(*)	.1536	.000	-2.886	-1.804
Deaf/Hard of Hearing	Blindness (visually impaired)	1.2647(*)	.1290	.000	.811	1.718
	Mild intellectual handicap	.5081	.1550	.104	-.035	1.051
	Moderate/severe intellectual handicap	1.3039(*)	.1313	.000	.843	1.765
	Mobility (wheelchair)	.4755	.1704	.396	-.121	1.072

	Back limitation	-.1058	.1608	1.000	-.669	.457
	Arthritis	-.3987	.1579	.653	-.952	.154
	Mental illness	.4567	.1549	.270	-.086	.999
	Emotional illness	.0536	.1577	1.000	-.499	.606
	Brain injury	.8088(*)	.1420	.000	.311	1.306
	Heart disease	-.9226(*)	.1636	.000	-1.495	-.350
	Respiratory disease	-.7437(*)	.1647	.001	-1.320	-.167
	Cancer	-1.1539(*)	.1659	.000	-1.735	-.573
	HIV positive	-1.0410(*)	.1772	.000	-1.662	-.420
Mobility (wheelchair)	Blindness (visually impaired)	.7892(*)	.1437	.000	.284	1.295
	Mild intellectual handicap	.0326	.1674	1.000	-.554	.619
	Moderate/severe intellectual handicap	.8284(*)	.1457	.000	.316	1.341
	Deaf/Hard of Hearing	-.4755	.1704	.396	-1.072	.121
	Back limitation	-.5813	.1728	.079	-1.186	.024
	Arthritis	-.8742(*)	.1701	.000	-1.470	-.278
	Mental illness	-.0188	.1673	1.000	-.605	.567
	Emotional illness	-.4219	.1699	.693	-1.017	.173
	Brain injury	.3333	.1554	.937	-.212	.879
	Heart disease	-1.3981(*)	.1754	.000	-2.012	-.784
	Respiratory disease	-1.2192(*)	.1764	.000	-1.837	-.601
	Cancer	-1.6294(*)	.1776	.000	-2.251	-1.007
	HIV positive	-1.5165(*)	.1881	.000	-2.175	-.858
Back limitation	Blindness (visually impaired)	1.3705(*)	.1321	.000	.906	1.835
	Mild intellectual handicap	.6139(*)	.1576	.012	.062	1.166
	Moderate/severe intellectual handicap	1.4097(*)	.1343	.000	.938	1.882

	Deaf/Hard of Hearing	.1058	.1608	1.000	-.457	.669
	Mobility (wheelchair)	.5813	.1728	.079	-.024	1.186
	Arthritis	-.2929	.1605	.997	-.855	.269
	Mental illness	.5625(*)	.1575	.039	.011	1.114
	Emotional illness	.1594	.1602	1.000	-.402	.721
	Brain injury	.9146(*)	.1448	.000	.407	1.422
	Heart disease	-.8168(*)	.1660	.000	-1.398	-.235
	Respiratory disease	-.6379(*)	.1671	.016	-1.223	-.053
	Cancer	-1.0481(*)	.1683	.000	-1.638	-.458
	HIV positive	-.9352(*)	.1795	.000	-1.564	-.306
Arthritis	Blindness (visually impaired)	1.6634(*)	.1286	.000	1.211	2.116
	Mild intellectual handicap	.9068(*)	.1547	.000	.365	1.449
	Moderate/severe intellectual handicap	1.7026(*)	.1309	.000	1.243	2.163
	Deaf/Hard of Hearing	.3987	.1579	.653	-.154	.952
	Mobility (wheelchair)	.8742(*)	.1701	.000	.278	1.470
	Back limitation	.2929	.1605	.997	-.269	.855
	Mental illness	.8554(*)	.1546	.000	.314	1.397
	Emotional illness	.4523	.1574	.325	-.099	1.004
	Brain injury	1.2075(*)	.1417	.000	.711	1.704
	Heart disease	-.5239	.1633	.129	-1.096	.048
	Respiratory disease	-.3450	.1644	.955	-.921	.231
	Cancer	-.7552(*)	.1656	.001	-1.336	-.175
	HIV positive	-.6423(*)	.1769	.032	-1.262	-.022
Mental illness	Blindness (visually impaired)	.8080(*)	.1249	.000	.369	1.247
	Mild intellectual handicap	.0514	.1516	1.000	-.480	.582
	Moderate/severe intellectual handicap	.8472(*)	.1272	.000	.400	1.294
	Deaf/Hard of Hearing	-.4567	.1549	.270	-.999	.086
	Mobility (wheelchair)	.0188	.1673	1.000	-.567	.605

	Back limitation	-.5625(*)	.1575	.039	-1.114	-.011
	Arthritis	-.8554(*)	.1546	.000	-1.397	-.314
	Emotional illness	-.4031	.1543	.566	-.944	.138
	Brain injury	.3521	.1383	.631	-.132	.837
	Heart disease	-1.3793(*)	.1604	.000	-1.941	-.818
	Respiratory disease	-1.2004(*)	.1615	.000	-1.766	-.635
	Cancer	-1.6106(*)	.1627	.000	-2.181	-1.040
	HIV positive	-1.4977(*)	.1742	.000	-2.109	-.887
Emotional illness	Blindness (visually impaired)	1.2111(*)	.1283	.000	.760	1.662
	Mild intellectual handicap	.4544	.1544	.274	-.086	.995
	Moderate/severe intellectual handicap	1.2503(*)	.1306	.000	.791	1.709
	Deaf/Hard of Hearing	-.0536	.1577	1.000	-.606	.499
	Mobility (wheelchair)	.4219	.1699	.693	-.173	1.017
	Back limitation	-.1594	.1602	1.000	-.721	.402
	Arthritis	-.4523	.1574	.325	-1.004	.099
	Mental illness	.4031	.1543	.566	-.138	.944
	Brain injury	.7552(*)	.1413	.000	.260	1.251
	Heart disease	-.9763(*)	.1630	.000	-1.547	-.405
	Respiratory disease	-.7973(*)	.1641	.000	-1.372	-.222
	Cancer	-1.2076(*)	.1654	.000	-1.787	-.628
	HIV positive	-1.0946(*)	.1767	.000	-1.714	-.475
Brain injury	Blindness (visually impaired)	.4559(*)	.1084	.004	.076	.836
	Mild intellectual handicap	-.3008	.1384	.925	-.786	.184
	Moderate/severe intellectual handicap	.4951(*)	.1112	.001	.106	.885
	Deaf/Hard of Hearing	-.8088(*)	.1420	.000	-1.306	-.311
	Mobility (wheelchair)	-.3333	.1554	.937	-.879	.212
	Back limitation	-.9146(*)	.1448	.000	-1.422	-.407
	Arthritis	-1.2075(*)	.1417	.000	-1.704	-.711
	Mental illness	-.3521	.1383	.631	-.837	.132

	Emotional illness	-.7552(*)	.1413	.000	-1.251	-.260
	Heart disease	-1.7315(*)	.1479	.000	-2.250	-1.213
	Respiratory disease	-1.5525(*)	.1491	.000	-2.076	-1.030
	Cancer	-1.9628(*)	.1505	.000	-2.491	-1.435
	HIV positive	-1.8498(*)	.1628	.000	-2.422	-1.278
Heart disease	Blindness (visually impaired)	2.1873(*)	.1355	.000	1.711	2.664
	Mild intellectual handicap	1.4307(*)	.1605	.000	.869	1.993
	Moderate/severe intellectual handicap	2.2266(*)	.1377	.000	1.743	2.710
	Deaf/Hard of Hearing	.9226(*)	.1636	.000	.350	1.495
	Mobility (wheelchair)	1.3981(*)	.1754	.000	.784	2.012
	Back limitation	.8168(*)	.1660	.000	.235	1.398
	Arthritis	.5239	.1633	.129	-.048	1.096
	Mental illness	1.3793(*)	.1604	.000	.818	1.941
	Emotional illness	.9763(*)	.1630	.000	.405	1.547
	Brain injury	1.7315(*)	.1479	.000	1.213	2.250
	Respiratory disease	.1789	.1698	1.000	-.416	.774
	Cancer	-.2313	.1710	1.000	-.830	.368
	HIV positive	-.1184	.1820	1.000	-.756	.519
Respiratory disease	Blindness (visually impaired)	2.0084(*)	.1368	.000	1.527	2.490
	Mild intellectual handicap	1.2518(*)	.1616	.000	.686	1.818
	Moderate/severe intellectual handicap	2.0476(*)	.1390	.000	1.559	2.536
	Deaf/Hard of Hearing	.7437(*)	.1647	.001	.167	1.320
	Mobility (wheelchair)	1.2192(*)	.1764	.000	.601	1.837
	Back limitation	.6379(*)	.1671	.016	.053	1.223
	Arthritis	.3450	.1644	.955	-.231	.921
	Mental illness	1.2004(*)	.1615	.000	.635	1.766
	Emotional illness	.7973(*)	.1641	.000	.222	1.372
	Brain injury	1.5525(*)	.1491	.000	1.030	2.076
	Heart disease	-.1789	.1698	1.000	-.774	.416

	Cancer	-.4102	.1721	.784	-1.013	.193
	HIV positive	-.2973	.1830	1.000	-.938	.344
Cancer	Blindness (visually impaired)	2.4186(*)	.1383	.000	1.932	2.906
	Mild intellectual handicap	1.6620(*)	.1629	.000	1.091	2.233
	Moderate/severe intellectual handicap	2.4579(*)	.1405	.000	1.964	2.952
	Deaf/Hard of Hearing	1.1539(*)	.1659	.000	.573	1.735
	Mobility (wheelchair)	1.6294(*)	.1776	.000	1.007	2.251
	Back limitation	1.0481(*)	.1683	.000	.458	1.638
	Arthritis	.7552(*)	.1656	.001	.175	1.336
	Mental illness	1.6106(*)	.1627	.000	1.040	2.181
	Emotional illness	1.2076(*)	.1654	.000	.628	1.787
	Brain injury	1.9628(*)	.1505	.000	1.435	2.491
	Heart disease	.2313	.1710	1.000	-.368	.830
	Respiratory disease	.4102	.1721	.784	-.193	1.013
	HIV positive	.1129	.1841	1.000	-.532	.758
HIV positive	Blindness (visually impaired)	2.3057(*)	.1516	.000	1.771	2.840
	Mild intellectual handicap	1.5491(*)	.1743	.000	.938	2.160
	Moderate/severe intellectual handicap	2.3449(*)	.1536	.000	1.804	2.886
	Deaf/Hard of Hearing	1.0410(*)	.1772	.000	.420	1.662
	Mobility (wheelchair)	1.5165(*)	.1881	.000	.858	2.175
	Back limitation	.9352(*)	.1795	.000	.306	1.564
	Arthritis	.6423(*)	.1769	.032	.022	1.262
	Mental illness	1.4977(*)	.1742	.000	.887	2.109
	Emotional illness	1.0946(*)	.1767	.000	.475	1.714
	Brain injury	1.8498(*)	.1628	.000	1.278	2.422
	Heart disease	.1184	.1820	1.000	-.519	.756
	Respiratory disease	.2973	.1830	1.000	-.344	.938
	Cancer	-.1129	.1841	1.000	-.758	.532

* The mean difference is significant at the .05 level.

T-Test

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Mild IH	2.27	100	1.238	.124
	Mild IH	2.07	100	1.157	.116
Pair 2	Mod/sev IH	1.36	101	.715	.071
	Mod/sev IH	1.40	101	.776	.077
Pair 3	Blind	1.37	99	.723	.073
	Blind	1.43	99	.758	.076
Pair 4	Deaf	2.69	101	1.286	.128
	Deaf	2.65	101	1.268	.126
Pair 5	Mobility	2.13	101	1.433	.143
	Mobility	2.24	101	1.429	.142
Pair 6	Back	2.71	101	1.329	.132
	Back	2.87	101	1.332	.133
Pair 7	Arthritis	3.01	99	1.274	.128
	Arthritis	3.14	99	1.178	.118
Pair 8	Mental illness	2.22	90	1.109	.117
	Mental illness	2.21	90	1.156	.122
Pair 9	Emotional illness	2.67	93	1.145	.119
	Emotional illness	2.60	93	1.143	.119
Pair 10	Brain Injury	1.87	102	.951	.094
	Brain Injury	1.88	102	1.027	.102
Pair 11	Heart disease	3.56	101	1.322	.132
	Heart disease	3.65	101	1.212	.121
Pair 12	Respiratory disease	3.34	100	1.304	.130
	Respiratory disease	3.52	100	1.306	.131
Pair 13	Cancer	3.82	95	1.229	.126
	Cancer	3.94	95	1.201	.123
Pair 14	HIV positive	3.77	95	1.440	.148
	HIV positive	3.77	95	1.356	.139

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Mild IH & Mild IH	100	.628	.000
Pair 2	Mod/sev IH & Mod/sev IH	101	.734	.000
Pair 3	Blind & Blind	99	.464	.000
Pair 4	Deaf & Deaf	101	.559	.000
Pair 5	Mobility & Mobility	101	.585	.000
Pair 6	Back & Back	101	.521	.000
Pair 7	Arthritis & Arthritis	99	.659	.000
Pair 8	Mental illness & Mental illness	90	.839	.000
Pair 9	Emotional illness & Emotional illness	93	.860	.000
Pair 10	Brain Injury & Brain Injury	102	.593	.000
Pair 11	Heart disease & Heart disease	101	.791	.000
Pair 12	Respiratory disease & Respiratory disease	100	.713	.000
Pair 13	Cancer & Cancer	95	.886	.000
Pair 14	HIV positive & HIV positive	95	.877	.000

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Mild IH - Mild IH	.200	1.035	.103	-.005	.405	1.933	99	.056
Pair 2	Mod/sev IH - Mod/sev IH	-.040	.546	.054	-.147	.068	-.729	100	.468
Pair 3	Blind - Blind	-.061	.767	.077	-.214	.092	-.786	98	.434
Pair 4	Deaf - Deaf	.040	1.199	.119	-.197	.276	.332	100	.741
Pair 5	Mobility - Mobility	-.109	1.303	.130	-.366	.148	-.840	100	.403
Pair 6	Back - Back	-.158	1.302	.130	-.415	.099	-1.223	100	.224
Pair 7	Arthritis - Arthritis	-.131	1.017	.102	-.334	.071	-1.285	98	.202
Pair 8	Mental illness - Mental illness	.011	.645	.068	-.124	.146	.164	89	.870
Pair 9	Emotional illness - Emotional illness	.065	.604	.063	-.060	.189	1.029	92	.306
Pair 10	Brain Injury - Brain Injury	-.010	.895	.089	-.186	.166	-.111	101	.912
Pair 11	Heart disease - Heart disease	-.089	.826	.082	-.252	.074	-1.084	100	.281
Pair 12	Respiratory disease - Respiratory disease	-.180	.989	.099	-.376	.016	-1.821	99	.072
Pair 13	Cancer - Cancer	-.116	.581	.060	-.234	.003	-1.943	94	.055
Pair 14	HIV positive - HIV positive	.000	.700	.072	-.143	.143	.000	94	1.000

Reliability

Scale: ALL VARIABLES – Reliability of the ATBP scale

Case Processing Summary

		N	%
Cases	Valid	102	51.0
	Excluded(a)	98	49.0
	Total	200	100.0

a Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.840	.849	16

Inter-Item Correlation Matrix

	V46	V47	V48	V49	V50	V51	V52	V53	V54	V55	V56	V57	V58	V59	V60	V61
V46	1.000	.526	.390	.304	.213	.302	.346	.180	.357	.447	.209	.246	.272	.311	.256	.244
V47	.526	1.000	.475	.242	.198	.222	.142	.149	.386	.342	.113	.158	.318	.244	.233	.146
V48	.390	.475	1.000	.271	.142	.125	.073	.214	.381	.375	.131	.159	.134	.105	.177	.121
V49	.304	.242	.271	1.000	.101	.243	.124	.326	.161	.084	.084	.071	.154	.255	.124	.159
V50	.213	.198	.142	.101	1.000	.512	.491	.236	.363	.305	.343	.090	.052	.145	.239	.370
V51	.302	.222	.125	.243	.512	1.000	.769	.392	.311	.302	.467	.218	.186	.202	.463	.494
V52	.346	.142	.073	.124	.491	.769	1.000	.297	.216	.357	.571	.191	.182	.232	.445	.695
V53	.180	.149	.214	.326	.236	.392	.297	1.000	.090	.160	.180	.265	.026	.060	.235	.236
V54	.357	.386	.381	.161	.363	.311	.216	.090	1.000	.443	.115	.116	.271	.150	.296	.226
V55	.447	.342	.375	.084	.305	.302	.357	.160	.443	1.000	.291	.318	.382	.269	.211	.295
V56	.209	.113	.131	.084	.343	.467	.571	.180	.115	.291	1.000	.133	.190	.391	.361	.597
V57	.246	.158	.159	.071	.090	.218	.191	.265	.116	.318	.133	1.000	.074	.087	.212	.036
V58	.272	.318	.134	.154	.052	.186	.182	.026	.271	.382	.190	.074	1.000	.394	.230	.223
V59	.311	.244	.105	.255	.145	.202	.232	.060	.150	.269	.391	.087	.394	1.000	.215	.367
V60	.256	.233	.177	.124	.239	.463	.445	.235	.296	.211	.361	.212	.230	.215	1.000	.607
V61	.244	.146	.121	.159	.370	.494	.695	.236	.226	.295	.597	.036	.223	.367	.607	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
V46	65.48	133.935	.582	.457	.822
V47	65.53	137.242	.499	.422	.828
V48	65.91	139.705	.418	.375	.833
V49	64.38	145.842	.328	.271	.838
V50	64.11	144.394	.434	.373	.832
V51	63.46	144.805	.605	.698	.827
V52	63.70	140.669	.575	.774	.825
V53	63.87	146.627	.345	.282	.836
V54	65.34	137.535	.479	.392	.829
V55	65.02	134.475	.571	.462	.823
V56	63.71	144.665	.474	.471	.830
V57	64.55	147.102	.283	.234	.840
V58	64.49	144.391	.385	.306	.834
V59	64.55	139.557	.405	.350	.835
V60	63.83	143.388	.495	.486	.829
V61	63.54	143.597	.550	.698	.827

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
68.76	159.568	12.632	16