

# The health and wellbeing of adults working in early childhood education

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**THIS ARTICLE REPORTS** the results of a survey of 168 New Zealand early childhood workers and describes their health status, behaviours and concerns. The respondents included 73 childcare teachers, 58 kindergarten teachers and 37 home-based educators. Although 92 per cent of respondents reported that they had good or excellent health, statistically significant differences were found between the groups for days absent because of illness, accidental injuries, job-related stress and ergonomic aspects of their work. All groups reported an increase in various physical symptoms since working with children, in particular backaches, muscle strain and fatigue. One-quarter of respondents experienced an illness related to their work with children during the past year, most commonly respiratory and gastrointestinal illnesses. The study alerts early childhood education employers to the importance of managing health issues such as workload and stress, occupational injuries, the provision of an ergonomically healthy work environment and adequate conditions of employment.

## Introduction

**A HEALTHY EARLY CHILDHOOD** workforce is an important aspect of early childhood education services. According to the Ministry of Education (2004) there are approximately 13,000 adults employed in New Zealand early childhood education settings, but little is known about their current health status or concerns. For adults working in the early childhood sector, the most commonly identified health and safety issues are exposure to infectious diseases, musculoskeletal strain, accidental injuries, risks during pregnancy and occupational stress (Robertson, 2003).

Many infectious diseases occur in child care that could be potentially harmful to childcare workers, although their incidence has not been documented. Specific infectious diseases found in children attending child care are respiratory, gastrointestinal and skin infections; scabies, head lice, meningitis, cytomegalovirus (CMV), chickenpox, conjunctivitis, rubella, giardia, tuberculosis; and hepatitis A and B (Bradley, 2003; Dobbins et al., 1994; National Institute Child Health and Human Development [NICHD] Early Child Care Research Network, 2001; Osterholm, 1994). Childcare workers who work with children under the age of two years have increased exposure to many of these diseases owing to closer contact with body fluids during napkin-

changing procedures, nose-wiping and managing teething babies. The foetus of a pregnant childcare worker is at risk if the mother contracts CMV, a highly infectious disease that can cause birth defects and is transmitted through bodily fluids, particularly saliva and urine (National Centre for Infectious Diseases, 2003). Two other agents with the potential to cause adverse foetal outcomes in childcare workers are the varicella-zoster virus (chickenpox) and human parvovirus B19 (erythema infectiosum).

Working with young children is a physically demanding job and places childcare workers at risk for musculoskeletal injuries, particularly back and shoulder injuries (Grant, Habes & Tepper, 1995; Gratz & Claffey, 1996). Childcare workers have also reported sprained ankles (Gratz & Claffey, 1996) and falls or trips on the job (Calabro et al., 2000). Ergonomic studies have found that childcare workers are required to do frequent lifting, bending, stooping, squatting, reaching and carrying of loads (Grant et al., 1995; Gratz, Claffey, King & Scheuer, 2002). Repeated frequent movements that place strain on the body have the potential to cause injury; this can be exacerbated by incorrect lifting, awkward body postures and movements, stretching and reaching.

Indications show that working in child care is stressful. Stressors found in childcare centres include child

behaviour and guidance issues, conflict or poor communications between staff and/or supervisor (Stremmel, Benson & Powell, 1993), parent-related demands, low pay and long hours (Curbrow, Spratt, Ungaretti, McDonnell & Breckler, 2000), low status, lack of relievers, unpaid overtime, limited resources (Caulfield & Kataoka-Yahiro, 2001), and differing philosophies, work ethics, skills and training between workers and directors (Gratz & Claffey, 1996).

The purpose of this study was to provide documentation of the personal health and wellbeing issues for adults working in three early childhood education settings: childcare centres, kindergartens and home-based settings. Childcare centres generally provide all day or flexible hours programs for children from birth to school age, whereas kindergartens offer sessional care for children aged three to five years. Home-based settings included nannies and family day care providers. Most of their work is with children under five years, but it may also include some after-school care. The three groups of adults are referred to collectively as early childhood workers, or in individual groups as childcare teachers, kindergarten teachers and home-based educators.

## Method

The research study used a survey design. The data was collected using a questionnaire originally developed by the University of Wisconsin for a similar study by Gratz and Claffey (1996). With permission from the author, minor modifications were made to ensure the questionnaire was suitable for the NZ setting and versions were developed for use in the three early childhood education settings. Ethical approval was given by the Massey University Human Ethics Committee. The postal questionnaire consisted of 36 questions and included demographic and contextual variables, health status, health behaviours and health concerns. The

sample for each early childhood group was developed from the Ministry of Education (2003) database of all early childhood education providers in the Wellington region. Kindergartens and childcare centres were listed separately in alphabetical order. For each place, a number of entries were made to represent a full-time equivalent teacher, an estimate based on enrolments and recommended teacher-child ratios. A systematic sampling technique was used and every sixth entry on the list was chosen, resulting in a sample of 103 childcare teachers and 71 kindergarten teachers. As the names of the teachers were not known, a questionnaire pack was sent to the supervisor, who was asked to randomly distribute the pack to one teacher. The managers of three home-based organisations arranged a similar randomised distribution of questionnaires to home-based educators, and 74 home-based educators were chosen. The total sample of participants was 248.

Descriptive and inferential statistical procedures were used to analyse the data using Minitab Statistical Software. A demographic profile of the respondents and work environment variations was generated using descriptive statistics. In order to compare the significant relationships and differences between the groups for each question, cross-tabulation chi-squared analyses and analyses of variance (ANOVA) was used.

## Results

### Demographic characteristics and employment history

The demographic and employment characteristics of the respondents are shown in Table 1. Ages ranged from the youngest of 19 years (home-based) to the oldest of 63 years (child care). There were statistically significant differences between the groups for the mean age, the number of years the respondents had been working

	Childcare teachers	Kindergarten teachers	Home-based educators	Total
<b>Sample size (n)</b>	73	58	37	168
<b>Response rate</b>	70%	82%	50%	67%
<b>Female</b>	96%	100%	100%	98%
<b>Age<sup>a</sup> (years) M (SD)</b>	42 (11.97)	44 (9.76)	34 (9.74)	
<b>Years in current position M (SD)</b>	3.9 (4.49)	5.6 (4.34)	5.8 (5.54)	
<b>Years in early childhood<sup>b</sup> M (SD)</b>	13.3 (8.92)	15.1 (7.4)	7.5 (5.9)	
<b>Hours worked<sup>c</sup> per week M (SD)</b>	36.7 (7.89)	44.5 (5.77)	41.8 (10.53)	

<sup>a</sup>  $F=9.33$ ,  $df=2$ ,  $p=0.00$ ; <sup>b</sup>  $F=10.53$ ,  $df=2$ ,  $p=0.00$ ; <sup>c</sup>  $F=15.87$ ,  $df=2$ ,  $p=0.00$

in early childhood education, and the number of hours worked per week (see Table 1). Home-based educators were the least experienced of the three groups, and kindergarten teachers worked the most hours per week.

Teacher–child ratios were also statistically significant in the three groups ( $\chi^2=208.554$ ,  $df=16$ ,  $p=0.00$ ). The majority of kindergarten teachers (84%) usually worked with teacher–child ratios of 1:15 or higher. Teacher–child ratios for childcare teachers ranged from 1:2 to 1:15 and home-based educators had the lowest adult–child ratio, ranging between 1:2 and 1:4.

All kindergarten teachers and 96 per cent of the childcare teachers held a degree or Diploma of Teaching in early childhood education. Thirty-nine per cent of home-based educators had no formal early childhood qualification.

### General health status

When asked to rate their health on a scale from excellent to poor, most of the respondents rated themselves as having good or excellent health (92%, child care; 93%, kindergarten; 92%, home-based). Half of the respondents reported their body weight was about right, and less than two per cent considered themselves obese. Thirty-two per cent of the sample reported that they had become pregnant since they began working with young children. Of this group, 38 per cent said they had problems during pregnancy such as miscarriage, toxæmia, high blood pressure, premature birth, back strain and infections.

The number of days absent from work because of illness showed statistically significant differences between the three groups. Kindergarten teachers averaged the highest number of days absent (5.5), childcare teachers averaged 4.8 and home-based educators had the lowest number of days (1.6) where they were unable to care for children in their home ( $F=5.11$ ,  $df=2$ ,  $p=0.007$ ). Only 10 per cent of all respondents said they had an extended period of absence because of illness in the past year. Kindergarten teachers had the highest rate of extended absence (15.5%), compared to 8 per cent for both the other groups. When asked about the frequency of illness and whether they got sick more often, less often or about the same since working with children, the groups were similar. Overall, 36 per cent of the respondents stated that they got sick more often.

Respondents were asked about the frequency of symptoms they experienced prior to and since working with children. For most respondents there was an increase in frequency for many symptoms—in particular, backaches, general fatigue and headaches.

When asked about a range of health symptoms experienced during the past year, those symptoms experienced often were: feeling completely worn out at the end of the day (43%), pains in back or spine (25%),

difficulty in getting up in the morning (24%), having trouble getting to sleep (18%), stiffness, swelling or aching in joints or muscles (14%), and coughing or heavy chest colds (11%). Twenty-eight per cent of respondents said they had experienced an illness related to working with children, most commonly respiratory and gastrointestinal infections, as well as head lice, shingles, impetigo and conjunctivitis.

### Health behaviours

Five areas of health behaviours were explored in the study: smoking, alcohol intake, nutrition, physical activity and working when ill. The majority of respondents were non-smokers (88%) and 70 per cent of respondents reported using alcohol. Overall, 89 per cent of the respondents thought their nutrition was good or excellent. When asked about their physical activity, just under half (45%) of the total sample reported involvement in physical activity for a minimum of 30 minutes at least three times a week. A further 45 per cent of the total sample said they were involved in physical activity at least one to two times a week. Ten per cent of the total sample stated they were involved in less than 30 minutes of physical activity each week.

The survey found that 91 per cent of respondents reported having worked when ill at some stage. Childcare teachers and kindergarten teachers cited the main reasons for this as the lack of relievers and too much work responsibility; home-based educators stated that financial reasons forced them to work when ill.

### Health concerns

The areas of health concerns focused on for this survey were stress, work-related injuries and the ergonomic aspects of the respondents' daily work.

Respondents were asked how stressful they perceived their job to be and to rate their stress on a scale from 'not stressful, slightly stressful, stressful and very stressful'. Statistically significant differences were found between the groups; 50 per cent of kindergarten teachers reported that working with children was either stressful or very stressful ( $\chi^2=18.336$ ,  $df=6$ ,  $p=0.005$ ). This compared to 26 per cent of childcare teachers and 16 per cent of home-based educators. Sources of stress are shown in Table 2. Kindergarten teachers were statistically significantly more likely to report that hours of work, number of children and administration/workload were causes of stress.

Accidental injuries on the job within the past year were reported by 29 per cent of the respondents. There were statistically significant differences in the rate of injury between the groups ( $\chi^2=8.610$ ,  $df=2$ ,  $p=0.014$ ). Kindergarten teachers reported the highest number of accidental injuries (41%), followed by childcare teachers (28%), then the least by home-based educators (13%).

	<b>Childcare teachers</b>	<b>Kindergarten teachers</b>	<b>Home-based educators</b>
Child behaviour/guidance	58	42	65
Hours of work <sup>a</sup>	21	39	14
Number of children <sup>b</sup>	36	67	11
Salary	15	11	30
Administration/workload <sup>c</sup>	10	30	3
Relationships with parents/adults	37	49	30
Staffing issues	6	0	0
Noise	0	7	0
Own family demands	0	0	13

<sup>a</sup>  $\chi^2=8.812$ ,  $df=2$ ,  $p=0.012$ ; <sup>b</sup>  $\chi^2=30.183$ ,  $df=2$ ,  $p=0.000$ ; <sup>c</sup>  $\chi^2=15.734$ ,  $df=2$ ,  $p=0.000$

Table 3 shows the common sites of the injuries for all three groups, using similar categories to those adopted by the Accident Compensation Corporation (ACC, 2003).

Similar causes for injury existed across all three groups (Table 3). Work properties included jamming a finger in the door and injuries from nails in the rubbish bag. Some respondents reported being hit by a child with an object or hit by equipment such as a tyre swing, painting easels and stereo speakers.

Ergonomic investigation focused mostly on the use of adult-sized furniture and the need to move heavy equipment. It was found that 53 per cent of respondents sat on the floor at least twice a day; kindergarten and childcare teachers reported that they sat regularly

on child-sized furniture. Statistically, significances were found for ergonomic aspects such as moving heavy equipment; kindergarten teachers reported moving heavy equipment the most ( $\chi^2=30.183$ ,  $df=2$ ,  $p=0.000$ ).

## Discussion

Overall the study has shown that this group of adults perceived themselves as relatively healthy, and believed they have good nutrition. Engagement in physical activity and exercise is similar to that reported for the NZ population, but tobacco smoking and alcohol use were slightly lower than the national average (Ministry of Health, 2003). Four main areas of statistical significance between the groups emerged for discussion: days absent owing to illness, job-related stress, accidental injuries and ergonomic aspects of the work.

Findings from the study confirm the notion that, for many adults, working with young children increases the frequency of illness and several health symptoms. All groups indicated that since working with children they experienced more backaches, general fatigue, headaches, sore throats, cold symptoms and muscle strain. This has been similarly reported in other research (Grant et al., 1995; Gratz & Claffey, 1996; Ono et al., 2002).

Absenteeism from work can be an important indicator of an employee's health status. High rates of absenteeism have been linked to a number of factors relevant to this study, including diet, increased body mass index, physical inactivity and high stress (Pelletier, Boles & Lynch, 2004). Of the three groups,

	<b>All groups (n = 49) (% of all injuries)</b>
<b>Injury sites</b>	
Back	42
Ankle/foot/knee	22
Neck/face	14
Fingers/hand	10
<b>Causes</b>	
Lifting/carrying	36
Slipping/tripping	17
Work properties	11
Struck by tool/object	11

kindergarten teachers reported the highest rate of illness and absence from work (both short- and long-term), although the reasons for this were not determined. Important influencing factors on employee health are working conditions such as leave entitlements, workload, salary and teaching contact hours. The findings raise questions about whether the working conditions are conducive to a healthy working environment, as many respondents said they often felt compelled to return to work following illness earlier than they should. Reasons given for this were insufficient sick leave, possible loss of income, and the problem of lack of relievers, an issue also highlighted in other studies (Caulfield & Kataoka-Yahiro, 2001; Gratz & Claffey, 1996). Working when ill appeared to be common practice for all three groups.

Childcare workers have frequent exposure to infectious diseases, particularly those who work in group settings and with children younger than three years. This also poses possible risks to the foetus of pregnant early childhood workers, although there is no evidence from this study that any foetus has been affected. Commonsense suggests that pregnant childcare workers should ensure they have immunity to potentially harmful infectious diseases and attempt to limit their exposure to these illnesses by working with children over three years. Vaccinations against influenza, rubella, chickenpox and hepatitis B are worth considering for all staff. Good hygiene practices are also an essential part of ensuring that adults and children are protected from cross-infection, and it is recommended that these are reviewed regularly. Thorough hand-washing procedures and the use of strict hygiene measures when changing nappkins have been found to lower the risk of faecal contamination on hands, sink faucets and the surrounding environment (Holaday, Waugh, Moudaddem, West & Harshman, 1995).

Stress for those working with children is an issue that needs addressing, especially for kindergarten teachers. A high level of workplace stress is reported to potentially have adverse effects on personal health and contribute to the development of stress-related illness (Ellis, 2001). Administration and workload, hours of work and the number of children were the significant factors that contributed to the kindergarten teachers' perceived stress. Stressors identified across all three groups and corresponding with other research in this area were behaviour and guidance issues with children and relationships with other adults (parents or colleagues) (Caulfield & Kataoka-Yahiro, 2001; Curbrow et al., 2000; Kelly & Berthelsen, 1995; Stremmel et al., 1993). Further investigations could be made into the possible relationship between conditions of employment, absenteeism and stress for childcare workers.

The number of unintentional injuries reported by all the groups is of some concern, in particular the number of kindergarten teachers who reported a high number of both minor and serious injuries. Back injury was the most common type of injury for all three groups, most commonly reported to be caused by lifting or carrying children and/or equipment. These findings of the incidence of back injury are consistent with studies in the United States (Brown & Gerberich, 1993; Gratz & Claffey, 1996) and the ACC (2003) data collected from injury claims in the NZ preschool sector.

Ergonomic aspects of the job are an important area of investigation related to musculoskeletal health and injury and include the use of child-sized furniture, sitting on the floor, moving heavy furniture, and the types of equipment required to be moved. According to respondents, sitting at a child's level either on the floor or on child-sized furniture is a regular occurrence and an essential aspect of their work. Gratz et al. (2002) suggest that sitting on the floor is not ergonomically conducive to a working environment aimed to minimise physical strain, and that where possible teachers should sit with their backs against the wall or furniture for support. Lifting and moving of heavy furniture and equipment is also a common requirement when working with young children; wheels and castors should be fitted to all furniture and large equipment that needs to be moved. Using steps up to napkin-change areas and cots to reduce lifting is also recommended best practice, although the use of these aids was not explored as part of this study.

Limitations to this study are the small sample size, as well as a possible selection bias owing to the head teachers, supervisors and home-based managers distributing the questionnaires. It is unknown whether all respondents were actually chosen at random or volunteered to participate on the basis of a particular interest in health. A reliance on self-reported health status and the memory of respondents means that some findings may need to be viewed with caution.

## **Conclusion**

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While most of the respondents in this study reported they were in good health, there were still several key areas of concern about the occupational health and safety of adults working in NZ early childhood education settings. Kindergarten teachers showed the most areas of health concern of the three groups. They reported more days absent through illness, higher rates of injury, stress and heavy physical demands, as well as a high administration load and long hours of work. The main concerns for childcare teachers were associated with lifting and back strain. Home-based educators had the least health concerns, although many were deterred from taking sick leave and holidays because

of low salary and lack of paid leave. Findings from this study provide a valuable contribution towards the development of workplace health promotion programs that involve the participation of employees, employers and management. Such programs could include the creation of an ergonomically designed work environment, training and education on the prevention of injury and strain, stress management, revision of administration and workload for kindergarten teachers, and adequate conditions of employment, particularly for home-based educators. It is intended that this study will contribute towards the development of healthy workplaces, an essential aspect of quality early childhood education. All those in employment have the right to work in an environment that is safe, healthy and productive.

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