

3. Health

The NZPF survey asked many questions about the physical and mental health of the respondents, associated risk and protective factors, as well as their happiness and stress levels.

We have several measures of the principals' physical health: a summary statement of their state of health, their level of fitness, their amount of physical activity and the regularity of it; their level of tiredness; time off work because of health; being overweight; use of tobacco, coffee or alcohol; self-medication for indigestion, tiredness, or pain; medication for cholesterol control, menopause, skin conditions, arthritis, heart conditions, blood pressure control, diabetes, osteoporosis, or weight loss.

We also have several measures of their mental health: their ability to sleep well; their emotional state; feelings of anger; frustration; happiness; impatience; optimism; tension; self-medication for sleep problems or headache; medication for depression or anxiety; and overall stress level.

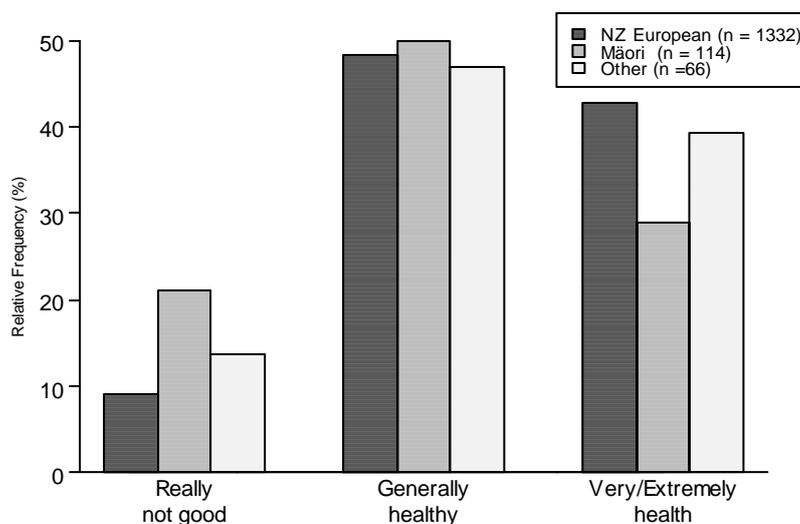
We have some measures of their "social health": how often they had quality socializing time with others in a non-work-related situation; their living arrangements; their personal relationships; whether they had dependents and how many.

We look first at their general state of health, then at experiences of tiredness, exercise, and socializing time.

Health

Principals were generally in good health. Only 10 percent said their present state of health was really not good. The percentages for males and females giving these responses were approximately equal. Māori were twice as likely to describe their state of health as "Really not good" (21 percent) as NZ Europeans (9 percent). Age was not significantly related to the respondents' general state of health, nor was health significantly related to the length of time as a principal.

Figure 1 **Self-reported health status of respondents, by ethnicity**



There were associations between health and type of school. Principals of area schools were most likely to rate their health as really not good (22 percent), as did 20 percent of kura principals. Secondary principals were most likely to say they were very or exceptionally healthy (50 percent, c.f. 40 percent of primary principals and 27 percent of kura principals). There were linear trends showing that health status tended to be better in larger schools (increasing from 37 percent of U1-U2 principals saying they were very or exceptionally healthy, to 55 percent of those in U7 + schools).

Seventy-six percent of the principals responding had had no time away from school because of illness in the last (winter) month. Time at home for illness was generally short: 10 percent had been at home for illness for one day, and 6 percent for two days.

Happiness

Sixty-two percent of the principals said they were generally happy with their job and life (5 percent totally, and 57 percent, generally most of the time). Thirty-two percent rated their happiness at “about a 50/50 call”. Only 5 percent were unhappy more than they were happy, and less than 1 percent were totally unhappy.

Happiness was not associated with gender, ethnic or age group, nor the length of experience as a principal. Principals of U1 or U2 schools were less likely to report being happy (55 percent), compared with principals of U7 and above schools (75 percent: the percentages for U3 or U4 schools and U4 or U5 schools were 61 and 68, respectively), and correspondingly principals of rural schools were less likely to be happy (55 percent) than those in town or city schools (both 65 percent).

Emotions

Many principals experienced some frustration, impatience, or anger over the previous week: 51 percent reported frustration at '50/50' or more, 30 percent impatience at '50/50' or more, and 68 percent, one or more experiences of anger. Thirty-two percent said they felt quite tense or very tense over the past week. Just under half (48 percent) said they were reasonably happy but quite worried at times, and 8 percent were quite worried most of the time, and 2 percent were depressed. However, 70 percent were optimistic about their life and job as a school principal.

Tiredness

Seventeen percent of the respondents reported that they were absolutely worn out or had a constant feeling of tiredness that affected their performance during the previous week. A further 29 percent said they were constantly tired, but that this had not affected their performance. Fifty percent said they had no problems with tiredness, though they had some level of it, and 5 percent had no experiences of tiredness over the previous week.

Twenty-two percent of the principals from U1 or U2 schools, the teaching principals, reported their performance was affected by tiredness, compared with 13 percent of those from U5 or U6 schools; tiredness did rise again in the largest schools (19 percent for principals of U7 or above schools). Given the relationship between size and location of schools, there was also an association between tiredness and location, with principals of city schools more likely report no problems with tiredness (57 percent) than those of town or rural schools (53 and 50 percent, respectively).

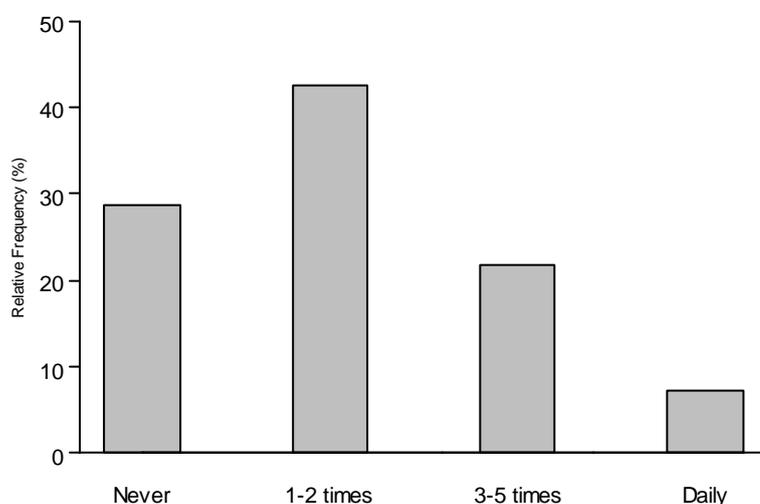
Physical activity and fitness

The respondents' reported levels of physical activity, and intended levels of physical activity were associated with their reported levels of fitness.

Physical activity

Most of the principals were not following the current guidelines for physical activity, which usually recommend at least 30 minutes of fitness activity 3–5 times a week. The next figure combines principals' answers to a question of how often they had exercised for at least 30 minutes in the past week, with answers to a question about how often they had exercised in a gym for at least 30 minutes over that time. Only 31 percent got at least 30 minutes of fitness activity in the past week.

Figure 2 Regularity of exercise for at least 30 minutes at a time; combined results for going to a gym and exercising independently



School size and decile were largely unrelated to whether principals took regular exercise. Principals of isolated rural schools were more likely to say they had never exercised in the past week (45 percent, compared with 30 percent overall), as were those of schools whose roll had fluctuated in the last two years (38 percent, compared with 28 percent of those whose roll had risen).

Women were somewhat more likely to say they had taken no exercise in the last week (35 percent compared with 27 percent of men), as were Māori principals (47 percent). Principals with less than two years experience were also more likely to take no exercise in comparison to those who had served 20 or more years (36 percent compared with 21 percent).

Regular exercise was associated with:

- general health levels (58 percent of those who said their health was really not good never exercised compared with around 20 percent of those who were very or exceptionally healthy);
- Stress levels (55 percent of those with extremely high stress levels said they never exercised, decreasing to 21 percent of those with extremely low stress levels);
- Difficulty running the length of a football field (60 percent of those who said they would have a lot of difficulty never exercised, as did 37 percent of those who said they would have some difficulty, and 16 percent of those who said they would no have difficulty);
- There were similar trends of association with getting regular exercise and levels of tiredness, and general happiness.
- Those who did less than 5 of the 15 domestic and support activities asked about were also more likely to take no exercise (40 percent, compared with 22 percent of those who did between 11 to 15).

Only 16 percent said they made time to exercise several times a week, no matter what. Another 33 percent said they tried to exercise several times a week, but sometimes missed it, and 37 percent said they got some exercise from time to time, but not on a regular schedule. Fourteen percent said they hardly ever exercised.

How often the respondents tried to exercise was not associated with age. Males were more likely than females to always exercise several times a week (18 percent c.f. 12 percent).

Fitness

Forty-nine percent of the principals thought they would have no difficulty running the length of a football field. Thirty-four percent thought they would have some difficulty, and 16 percent, a lot of difficulty doing this.

A pattern similar to that of general health shows for fitness. It was associated with school size, type, and roll changes.

- 20 percent of principals from U1 or U2 schools would have a lot of difficulty and 45 percent would have none, compared with seven percent of U7 and above principals who would have a lot of difficulty and 61 percent who would have none (reported levels of fitness increased with increase in school size);
- 35 percent of area school principals would have a lot of difficulty and 39 percent would have none, 10 percent of secondary principals would have a lot of difficulty and 48 percent would have none, and 33 percent of those from kura would have a lot of difficulty and 27 percent would have none; and
- 13 percent of principals from schools with a stable roll would have a lot of difficulty, compared with 27 percent of those from schools with a fluctuating roll.
- Around two thirds of male principals felt they would have no difficulty running the length of the football field, compared with only a third of the females.
- Fifteen percent of NZ European principals felt they would have a lot of difficulty, compared with 32 percent of Māori principals, and 26 percent of those from other ethnicities.
- Sixty-two percent of principals aged under 45 years felt they would have no difficulty, but only 46 percent of those over 45 years felt this.

A social life

A third of the respondents reported that in the previous week they had not had any quality socializing time with other people in a non-work-related situation. Sixty-four percent had had a few occasions of such time, and three percent reported that they had a lot.

Those in smaller U1 or U2 schools had no quality socializing time (41 percent had none), compared with those in bigger schools (26 percent of those in U5 or above schools); and associated with school size is location, as 37 percent of those in town or rural schools had no quality socializing time, compared with 29 percent of those in city schools. There were no statistically significant differences in socializing by gender, age, or length of experience, but there was an association with ethnicity, with 32 percent of NZ European principals reporting no socializing, compared with 48 percent of Māori and 39 percent of other principals.

Associations between stress, health and happiness

Stress and happiness were significantly correlated with all of the measures of psychological health (all but one of the measures of Kendall's tau-B¹ were 0.23 or more, with the highest 0.58). The weakest correlation of 0.18 was between feelings of anger in the last week and level of tiredness. All the associations are positive in the sense that each of the measures was recorded so that a high score was "good" (good health, low stress, no frustration, etc.), and a low score was "bad" (high stress, poor health, frequent anger, etc.).

Most strongly correlated with stress were: having felt tense (0.58), emotional state (0.57), frustration in relation to their job (0.53), general happiness in life (0.48), and level of tiredness (0.45).

Most strongly correlated with happiness were emotional state (0.55), frustration in relation to their job (0.54), general optimism (0.53), having felt tense (0.47), and stress.

The association between general state of health and the measures of mental health is not as strong. It is strongest with emotional state (0.35), tiredness (0.34), general happiness (0.33), stress (0.32), and frustration in relation to their job (0.31).

Associations with other measures of health

The associations between general state of health and the other physical, mental and social health measures were marked, and in the expected direction. For instance, those who indicated a relatively poor state of health were more likely than others to have trouble sleeping, to be tired, depressed, easily angered, to have experienced a measure of frustration in their job, to be relatively unhappy, to have felt impatient, to seldom feel optimistic, to have felt tense, to have had

¹ Kendall's tau-B is a measure of association that is more applicable to Likert-scale variables, like the ones measured here, than Pearson's product-moment correlation coefficient (the "usual" measure of correlation). Values of Kendall's tau-B can be interpreted much like other correlation coefficients, with values of 0.2–0.5 indicating weak to moderate correlations, those 0.5–0.7 indicating moderate correlations.

one or more days at home in the last month because of their health, to be over- or under-weight, to use alcohol most days, and then to drink more heavily, to use antacids more than once a week, to take medication for tiredness, sleep problems, headaches, other pain, cholesterol control, skin conditions, depression, heart conditions, blood pressure control, sleep problems, diabetes, osteoporosis, anxiety, or any other condition not named, to be taking two or more of the listed medications, to be stressed, to not exercise, to be unfit (have difficulty running the length of a football field), to hardly ever get exercise practice (those who reported themselves to be healthy were more likely to ensure that they always exercised several times a week), to not have quality socializing outside of the work environment, and to have taken part in only one to five of the 15 activities listed (those who reported themselves to be healthy were more likely to have done 11–15 of the activities listed).

Listing all the responses that *were* associated with general state of health makes it difficult to detect what was *not* associated. We therefore list the questions that were *not* associated with health, and happiness.

Not associated with perceived *general health* were cigarette use; coffee consumption; taking medication for menopause, arthritis, or weight loss; going to a gym; highest tertiary qualification; living arrangements; personal relationships (single, in a casual relationship, in a permanent relationship); the presence or number of dependents in the household.

Not associated with *general happiness* in the last week were the number of days at home because of health in the last month; cigarette use; the quantity of alcohol consumed (but those who were unhappy were more likely to consume alcohol most days); coffee consumption; medication for cholesterol control, menopause, arthritis, diabetes, osteoporosis, weight loss, or other conditions; going to a gym; the presence or number of dependents in the household.

Health issues and medication

We look now at the rate of medication (raw percentages) of respondents reporting possible physical or mental health problems. Most of the principals experiencing some problems did not take medication or herbal remedies for them.

Half of the respondents reported sleep problems that involved both getting to sleep and waking during the night. Of these 723 respondents with sleep problems, 13 percent reported taking medication or herbal remedy for sleep problems, 20 percent took any remedy for sleep problems at least once a week, and 24 percent reported taking any remedy for tiredness at least once a week.

Forty-five percent of the respondents reported being always tired, with 11 percent of the 689 tired respondents taking medication for sleep problems, 17 percent using any remedy for tiredness at least once a week, and 15 percent taking any remedy for tiredness at least once a week.

Ten percent of the respondents reported being depressed or mostly worried (two percent reported being depressed), and 10 percent of these people reported taking medication for depression.

Overall, two percent of the respondents said they were easily angered, but eight percent of those on medication for depression did so. In a similar way, those on depression medication were more likely to experience more frustration, impatience, and tension than others.

Three percent of the respondents were on medication for anxiety, and these people were more likely to be depressed, feel anger, frustration, or tension than others.

The respondents who reported taking antacids more than once a week were more likely to also report being depressed or worried, be easily angered, experience frustration, be impatient, or feel tense. Those taking any medication for a headache had a similar profile, as did those taking medication for other pain, but the association with anger was weaker for those with other pain.

Being overweight is considered a risk factor for several chronic diseases. Those who described themselves as being overweight were more likely to take medication for cholesterol control, heart conditions, blood pressure control, diabetes, and weight loss.

There were significant associations between some of the forms of medication: between that for cholesterol control and heart condition; for cholesterol control and blood pressure control; for cholesterol control and diabetes; for depression and sleep problems; and for depression and anxiety.

How does principals' health compare with the general population?

We compared as far as is possible the results from this survey with those from the New Zealand Health Survey (NZHS) (Ministry of Health, 2004), to see if principals stand out in any way.

The prevalence of chronic disease, and risk and protection factors tend to depend on age, ethnicity, gender, and degree of socio-economic deprivation (Ministry of Health, 2004). The responses for the NZHS were weighted so that the subgroups in the population are accurately represented. That sample could then be regarded as having the same constituency as the population of people aged 15 or more. Compared with the population at large the principals who responded to the NZPF survey:

- are older (all were over 25, and the proportion over 45 years was 78 percent, compared with 34 percent in the population)
- more are male (55 percent, compared with 49 percent of people aged at least 15 years in the population)
- fewer are NZ Māori (8 percent, compared with 12 percent of people aged at least 15 years in the population)
- have higher educational and income levels (both of these are associated with health status).

We therefore need to be careful when attempting comparisons with the NZHS results. The reasons for this include:

- We cannot compare “raw” percentages of incidence, as the age structure of the two samples is very different. We can compare age-standardised rates, where the rate quoted is the rate that would have been obtained had the sample age-specific rates been observed in a population with a standard age structure. The NZHS report gives all the incidence rates as the direct method of standardization using the WHO World Population as the standard population, and we have used the same methodology to compare the rates.
- The questions asked in the two surveys were not the same, but many were sufficiently similar to make broad comparisons.
- The NZHS asked whether the respondents had been diagnosed with various chronic diseases (high blood pressure, heart condition, diabetes), and then if they were taking medication. The report gives the incidence rate of the disease, and the conditional rate of medication (the percentage of those with the disease who take medication). Our questionnaire only asked the second question. From the data supplied in the NZHS report we can roughly approximate the equivalent rate (the population rate of medication) for our survey.
- For several diseases and risk factors we would expect that the responding principals would have lower than average rates, because of their ethnic mix and socio-economic status.
- Comparisons of general and mental health are difficult, given how different the questions were. In the NZHS all self-reported health was measured as the total score on eight scales (physical functioning, role physical, bodily pain, general health, vitality, social functioning, role emotional, mental health). However, we can compare broad trends in the general health, vitality, and mental health scales with those in response to our questions, by gender, age, and ethnicity.

Raw percentages for the prevalence of risk factors and chronic disease for the NZPF survey and the NZHS are given in Table 2. Nearly a fifth of the NZPF survey respondents are currently taking *blood pressure* medication (raw percentage), which is probably about the same rate as in the population (comparing age-standardised rates). Males and females are approximately equally likely to be taking blood pressure medication (raw percentages in NZPF survey; age-standardised rates in NZHS). The situation for *cholesterol control* medication shows some differences: males in the NZPF sample were more likely to be taking the medication than females, yet in the NZHS there were no significant differences between the genders.

Table 1 **Comparison between NZHS and NZPF survey: raw and age-standardised rates of the prevalence (percent) of risk factors and chronic disease**

	Raw percentage, NZPF survey			Age-standardised rate, NZPF survey			Age-standardised rate, NZHS		
	Male (n = 830)	Female (n = 686)	Total (n = 1517)	Male	Female	Total	Male	Female	Total
Taking blood pressure medication	17	18	17	– ^a	–	11	–	–	12
Taking cholesterol control medication	15	8	12	– ^a	–	6	–	–	6
Physical activity	33	28	31	34	24	31	78	70	73
Sedentary activity	27	34	30	33	31	30	14	11	13
Overweight or obese	46	51	48	52	48	50	41	28	35
Alcohol use ^b	75	63	70	65	49	60	89	80	84
Potentially hazardous drinking patterns ^c	11	8	10	15	10	12	27	11	17
Daily cigarette use	5	7	6	4	5	5	24	23	23
Heart disease	5	7	6	3	1	2	7	5	– ^d
Diabetes	3	2	3	2	2	2	3	3	– ^d
Arthritis	7	6	7	6	4	5	7	8	– ^d
Osteoporosis	< 1	1	1	< 1	1	1	2	< 1	– ^d
Mental disorders ^e	5	7	6	3	9	7	2	3	2

^a There was no significant difference between the prevalence in males and females, so only the overall prevalence for taking medication was quoted in the NZHS report.

^b The NZHS recorded *any* alcohol use in the past year; the NZPF survey did not give the option of *no* alcohol use, so the NZPF survey results above reflects use of alcohol at least once a week, whereas the NZHS results include those with less frequent use.

^c The NZHS used a 10-item scale, the Alcohol Use Disorders Identification Test (AUDIT), to determine these patterns. The NZPF survey used a 4-point scale (1–2 glasses; 2–6 glasses; More than a few; Have enough that I have a problem). Respondents who selected “More than a few” may or may not have a hazardous drinking pattern, so we report only on those who selected “Have enough that I have a problem”, but this may be an underestimate of the prevalence.

^d The NZHS reported the prevalence for taking medication for males and females separately, and not the total.

^e The NZHS reported prevalence of depressive disorder, bipolar disorder and schizophrenia, and did not record the prevalence of medication for the disorders. The NZPF survey respondents indicated if they were taking medication for anxiety or depression. The percentages quoted here need to be interpreted with caution, as they are most likely not accurately measuring prevalence of the same disorders. The rates quoted from the NZPF survey are *prevalence rates* for depression or anxiety medication, while those for the NZHS are the *prevalence rates* for depression.

Physical activity tends to decrease with age, and sedentary activity to increase, and the rates indicated in the NZPF survey (combining those who exercise on their own or in a gym for at least 30 minutes at a time, at least three times a week for physical activity, and those who reported never exercising for at least 30 minutes at a time for sedentary activity) is certainly about half that

measured in the NZHS for physical activity and double that measured in the NZHS for sedentary activity (comparing age-standardised rates).

The respondents to the NZPF survey were more likely to report that they were overweight than were those sampled in the NZHS. However in the NZHS, the measure was the BMI², based on physical measurement, rather than a self-report, so it is difficult to say whether the NZPF sample are really more overweight than those in the NZHS or not, particularly as in the NZHS males were more likely to be overweight than females, but in the NZPF survey more women perceived that they were overweight.

Alcohol use and potentially hazardous drinking patterns were also difficult to compare directly. However the indications are that the NZPF survey respondents are probably more moderate in their alcohol use than the general population, with males more likely to drink, and to drink more, than women in both surveys.

The NZPF respondents have a much lower rate of cigarette smoking than the general population (their rate is about a fifth of the population's).

They also have a lower rate of taking medication for heart disease (more common among men than women in the sample), diabetes, arthritis, and osteoporosis. Their rate of taking medication for depression or anxiety would appear to be higher than the depression rate in the population. What is certain is that the rates for females are higher than those for males (the gender difference is in the rate of taking medication for anxiety, rather than for depression).

Summary

While health levels were generally high for principals, there were some situations which were linked to poorer levels of general health, tiredness, fitness, happiness and socializing. Those who may be more vulnerable in terms of maintaining well-being were more likely to come from small schools, in rural areas, and be principals of area schools or kura kaupapa Māori. Fitness and getting exercise seemed to be harder for principals of these schools, and because principals of these schools are more likely to be female and Māori, for those two groups.

The main health area of concern for principals is their lack of regular exercise.

² Body mass index, calculated by dividing weight in kilograms by the square of height in metres.