

# WORKPLACE WELLNESS AT OTAGO POLYTECHNIC

Pete Eley, Simon Middlemas and Megan Gibbons

## INTRODUCTION

Preventable health conditions such as heart disease, diabetes and cancer are the leading causes of death in NZ and are costly in terms of individual and societal health. If one's health and wellness are out of balance, health problems such as obesity, diabetes, cardiovascular disease, stroke, and cancer may become prevalent; there are also reduced levels of quality of life (van Oostrom, Smit, Wendel-Vos, Visser, Verschuren and Picaved, 2012). Cardiovascular disease is the leading cause of mortality in New Zealand. Mortality statistics show that 45% of female deaths and 43% of male deaths in 2008 were caused by CVD. The research shows that workplace wellness programmes can be beneficial to both employee and employers (Australasian College of Physicians (2013)). When comparing employees who are physically active with those who are non-active it was found those who engaged in physical activity had 20 days less sick leave (Proper et al., 2006). We also have a workforce that is ageing and becoming more diverse so we need to be ready to respond to their needs. These factors can impact on business through injury, illness and absenteeism that ultimately reduce productivity. People's work impacts on more than just their physical health as social, emotional and spiritual factors contribute to our overall health and wellbeing. With most employees spending a large proportion of their day at work, the workplace is an ideal setting to promote health and wellbeing, potentially contributing towards employee productivity, motivation and quality of life. Employers are starting to take an approach towards employee's health status and have introduced benefits and schemes that aim to improve physical activity and health.

## Workplace wellness

Workplace health promotion is defined as any employer initiative directed at improving the health and well-being of workers and/or their dependents (Goetzel & Ozminkowski, 2008). Research found that the implementation of a workplace wellness programme could increase productivity, reduce absenteeism and stress (Ricci and Chee, 2005). Employee's health status improves which creates a positive environment resulting in a happier and more engaged workplace. Many hours of the day are spent in the workplace therefore it is a significant part of an individual's life. Statistics show that from March 2012 and June 2013 New Zealanders spent on average 52 hours a week at work (NZ Ministry of Health, 2013). This makes up just over 30% of an individual's week. A New Zealand report on 'Wellness in the Workplace' found that New Zealand lost around 6.1 million working days to absence in 2012 (Business NZ, 2013). Organisations who promote health and wellness may become increasingly competitive, by increasing productivity, lowering absence rates and increasing savings per employee (Wellness in the Workplace). With the high cost of sourcing external health and physical activity advice, employees are more likely to participate in a funded workplace wellness programme (Toker & Biron, 2012). Employees would also prefer to use time at work, rather than high valued personal time (Toker & Biron). Benefits of targeting the working population include; individuals are able to be targeted before disease develops, time and travel can be negated due to being onsite, there is already communication between employees and employers, the setting is non-evasive and can be manipulated to suit the employee's needs and provides opportunity for encouragement and support among peers

(Novak, Bullen, Howden-Chapman, & Thornley, 2007).

### **The Springin2it! Workplace Wellness Programme 2010-2015**

Spring in2it! is a workplace wellness programme established by Otago Polytechnic in 2010. It is a 10-week, web-based scheme, which involves an event calendar for staff to participate in to improve physical activity and gain knowledge about nutrition and living a healthy lifestyle (Gibbons, Morland, Lubransky, 2013). Participants are health screened and completed a fitness test pre- and post-programme to see observe results and benefits. Springin2it! originally set up as part of a collaborative project between the Nursing and The Health and Safety Office at the Polytechnic, as a voluntary web-based wellness intervention with a focus on promoting nutrition and physical activity (Gibbons, 2011).

Specifically, Springin2it! aims to:

- (i) improve the cardiovascular risk profile of participants,
- (ii) contribute to the overall productivity of the organisations that participate, and
- (iii) create and support social sustainability, by creating a work environment that encourages staff to interact with colleagues and providing an opportunity for staff to improve their health status with the support of their workplace and workmates.

The major difference of Spring in2it! compared to other workplace interventions, is the combined focus on nutrition and physical activity. In addition, a number of health indicators - such as family history of health problems (diabetes, heart attacks) where they a smoker, their work lifestyle (active or sedentary) their diet – were collected allowing the researchers to gain an understanding of their health status and cardiovascular risk of this workplace population. Springin2it was group based and attendance throughout was not compulsory. Between 2013 and 2016 the program was led by students studying on the Bachelor of Applied Science (Health, Wellness and Physical Activity). Under supervision, the students run all aspects of the scheme, including recruitment of participant, data collection and screenings.

### **Participants**

A total of 580 OP staff participated in Springin2it! in the first six years it was delivered ( $m = 96.7$ , range = 76-132). This equated to between 18% and 19% of the total staff employed at the company . Of these participants, two thirds were female employees ( $m = 68.2$ , range 62-73%) and one third were male ( $m = 31.8$ , range = 27-38%). More than half of the participants were aged between 34-54 ( $m = 59\%$ , range 26.4-32.6), followed by the 22-34 (22.2%) and 55-64 (17.2) age groups. Given the focus on a workplace context, there were few participants in the 18-21 (0.4%) and 65-74 age group (1.2%).

Year	Total	Female (n)	% Female	Male (n)	% Male	% total staff
2010	77	n/a	n/a	n/a	n/a	15%
2011	119	79	66%	40	34%	23%
2012	76	55	72%	21	28%	15%
2013	91	66	73%	25	27%	17%
2014	132	90	68%	42	32%	26%
2015	85	53	62%	32	38%	17%

Table I. Demographic Information regarding Springin2it! Participants (2010-2015)

### Health Screening

Participants were also asked to complete a health screening and assessment prior to starting. The assessment includes measures of body composition, blood pressure, blood lipids and glucose. Participants record on line their daily water intake, daily number of fruit and vegetable servings and daily minutes of exercise. The same assessment is completed at the end of the scheme. For the health screen, the following data was collected:

**Body composition.** Body composition was done using a Tanita BC-418 Segmental Body Composition Analyzer. This machine calculates regional body composition empowering healthcare professionals to better determine health risk associated with visceral and abdominal fat. Ordinary scales and/or calipers only provide weight or body fat%, but the BC-418 provides a complete print out of detailed body composition analysis- weight, body fat%, BMI, fat mass, fat free mass, and so much more- all without the traditional intrusive measurement methods.

**Blood pressure.** Blood pressure was taken using both manual and automatic machines, we used the Welch Allen SPOT VITAL SIGNS® DEVICE. Using an automated machine gave us more accuracy of data.

**Blood lipids.** Initially bloods were taken to Southern Community Labs for testing. To improve and costings, turnaround times we brought this in house. We now use a Roche Diagnostics Cobas b101, this machine lets us test for IVD test system offering HbA1c and a complete lipid profile (CHOL, HDL, LDL, TG, non-HDL, TC/HDL)

**Blood Glucose.** The Accu-Chek Performa blood glucose meter was used to measure blood glucose. We tested for high blood sugars to screen for the onset of diabetes. The test will not confirm the presence of diabetes but acts as an indicator; that may require the participant to be referred onto their GP.

	PrebldL DL	PostbldLD L	PrebldHD L	PostbldH DL	PrebldTo talChol	PostbldT otalChol	PrebldCh oHDL	PostbldC holHDL
Mean	2.65	1.18	1.42	0.67	4.86	2.26	3.28	1.46
N	580	580	577	579	579	580	580	580
Std. Dev.	1.58	1.56	0.67	0.87	1.85	2.74	1.65	1.92

Table 2. Body composition, blood pressure, blood lipids and glucose measures for Springin2it! participants 2010-2015

**Weight.** The total amount of weight lost for participants in the study period was 586.5 kg. It is known that excessive body fat increases the risk of contracting diabetes as well as increasing the risk of suffering a cardiac event.

**Cholesterol.** The total cholesterol for the staff was just under the recommended level of 5.2 at 4.8 (Metcalf, Scragg, Schaaf, Dyall, Black & Jackson, 2006). New Zealanders have some of the highest average cholesterol levels in the world and 17% of all deaths in New Zealand can be related to high cholesterol. It is estimated that 90% of adult New Zealanders would benefit from lowering their cholesterol levels.

## DISCUSSION

While the screening results suggest that participation in Springin2it! was beneficial for the participants, the drop-off rate suggests that many participants didn't complete the programme. There were processes in place within the Springin2it! program to help the participants continue to engage. These included communication and information, recruitment and registration, testing and results, and regular support. Despite this, many of the staff did not return for a post-test, with almost half (44%) of the participants consistently failed to formally complete the programme. Reasons for failure to complete the programme were undetermined, but may have been due to factors such as motivation, lack of progress against personal goals and other commitments (e.g. work). Many of the participants were identified as within the 'healthy' range during pre-screening and may have felt that it was therefore unnecessary to return for post-study testing. Anecdotal evidence suggests that participants had limited engagement with the program may have not felt there would be a positive difference in their final results, and so were reluctant to re-test on the measures taken at the start of the programme. Lack of time was identified by numerous participants as a reason for not engaging in the follow-up screenings. Linnan, Weiner, Graham & Emmons (2007) found that managers believed that lack of time to participate (56%), lack of staff time (54%), production conflicts (41%), and cost (38%), were all barriers to implementing a workplace wellness (Linnan et al, 2007).

Springin2it was a web-based wellness scheme. Given difficulties of combining work and exercise, the internet has become increasingly popular means for communication within workplace wellness promotion. Employees who work off-site can also be involved. However, it could be argued that with a web-based approach the participant has to have a high internal motivation, since there is less contact with organisers during the scheme. Participants on web-based only wellness programmes have reported that they did miss the face-to-face interaction received during a non-web-based programme (Cook, Billings, Hersch, Back & Hendrickson, 2007). Regular meetings with a support person was found to help with motivation, and participants reported not wanting to let their support person down and feeling that they needed to stick to organised exercise times (Cook et al).

## FINAL THOUGHTS

This suggests there is need for behaviour change from the management sector in order for this to spread within organisations. Workplace wellness programmes may have a better chance of being implemented with improvement outcomes if senior staff were keen to lead by example and promote health and wellness around their workplace (Linnan et al, 2007). During one year of Springin2it! there was a public commitment from the current senior leadership team to adopt healthy behaviours with the aim of losing weight collectively. While this was not a formal part of the Springin2it!, this idea was positively received by staff. Despite this, and other support mechanisms, the findings of this case study also question whether workplace programme is the most effective way to address workplace health and wellness. It could be argued that running a wellness programme within the traditional workplace 7-8-hour day may be unrealistic. One suggestion is the adoption of a 6-hour working day. The 6-hour day has been trialed in Sweden, in contexts such as car manufacturing, web design and surgery. The adoption of a 6-hour day has been associated with benefits such as increased productivity, reduced stress, and increased levels of physical activity (e.g. Heath, 2017).

**Acknowledgements:** The authors would like to acknowledge the work done by Lisa Barclay in the preparation of this article.

**Peter Eley** has spent the last 20 years blending his passion for the outdoors with a passion for education. During this time, he has carved out a niche for himself at Otago Polytechnic, where he has worked as a lecturer for the past 13 years. He continues to teach in the outdoors, but is also involved in student training and research supervision in the health and wellness area at the Polytechnic.

**Simon Middlemas** is a principal lecturer and research coordinator at the Otago Institute of Sport and Adventure at Otago Polytechnic. He completed a PhD in sport psychology and performance analysis in 2014, focused on the use of video feedback in the psychological preparation of elite youth football players and coaches. For the past decade, Simon has worked as a sport psychology consultant within elite and development sport, for the English Institute of Sport (EIS) and as a private consultant, with clients such as GB Swimming, GB Volleyball/Beach Volleyball, England Netball, the British Equestrian Federation and the English Football Association. He completed a Graduate Diploma in Tertiary Education in 2015.

**Megan Gibbons** is the head of college at Te Ohu Ora, which includes the Institute of Sport and Adventure and the School of Occupational Therapy at Otago Polytechnic. She has a PhD from Auckland University. Megan's research interests include workplace health and wellness, and paediatric and micronutrient nutrition. Recently she has become interested in understanding the learner in the tertiary setting and how teachers can best meet their needs and expectations. Megan is of Ngā Puhī descent and is married with two school-aged children. She has multiple

sporting commitments and is an athletics coach for both national development teams and Otago athletes.

Correspondence to: Pete Eley, Teaching and Learning, Otago Polytechnic, 40 Logan Park Drive, Dunedin 9016, New Zealand. Email: [pete.eley@op.ac.nz](mailto:pete.eley@op.ac.nz)

## REFERENCES

Australasian College of Physicians (2013). Improving workforce health and workplace productivity - A virtuous circle. Position Statement. The Royal Australasian College of Physicians: Health & Productivity.

Business NZ (2013). Wellness in the Workplace. Survey Report. Available from: [https://www.businessnz.org.nz/\\_\\_data/assets/pdf\\_file/0005/74615/Wellness-in-the-Workplace-Survey-2013-Report.pdf](https://www.businessnz.org.nz/__data/assets/pdf_file/0005/74615/Wellness-in-the-Workplace-Survey-2013-Report.pdf) (Accessed May 2017).

Cook, R. F., Billings, D. W., Hersch, R. K., Back, A. S., & Hendrickson, A. (2007). A field test of a web-based workplace health promotion program to improve dietary practices, reduce stress, and increase physical activity: randomized controlled trial. *Journal of Medical Internet Research*, 9(2), e17.

Gibbons MJ, Morland C, Lubransky A. (2013) *Dunedin City Spring in 2it!* A workplace based health promotion programme. It starts with us: ma matau e timata. Agencies for Nutrition Action National Nutrition and Physical Activity Conference, Rotorua 8-9 May 2013 Available from: [http://www.ana.org.nz/sites/default/files/Final%20Programme\\_0.pdf](http://www.ana.org.nz/sites/default/files/Final%20Programme_0.pdf)

Gibbons, M.J. (2011) *Spring in 2it! Leading by Example*. New Zealand Recreation Association National Conference. 16-18 November 2011, Dunedin.

Goetzel, R. Z., & Ozminkowski, R. J. (2008). The health and cost benefits of work site health-promotion programs. *Annual Review of Public Health*, 29, 303-323.

Heath, Thomas. The Swedish six-hour workday could help you live longer. Available from: <http://i.stuff.co.nz/business/better-business/91819830/the-swedish-six-hour-workday-could-help-you-live-longer>. (Accessed April 2017).

Linnan, L., Weiner, B., Graham, A., & Emmons, K. (2007). Manager beliefs regarding worksite health promotion: findings from the Working Healthy Project 2. *American Journal of Health Promotion*, 21(6), 521-528.

Metcalf, P., Scragg, R., Schaaf, D., Dyall, L., Black, P., & Jackson, R. (2006). Trends in major cardiovascular risk factors in Auckland, New Zealand: 1982 to 2002-2003. *The New Zealand Medical Journal (Online)*, 119(1245), U2308.

Novak, B., Bullen, C., Howden-Chapman, P., & Thornley, S. (2007). Blue-collar workplaces: a setting for reducing heart health inequalities in New Zealand. *New Zealand Medical Journal*. 120(1261), U2704.

Proper, K. I., Heymans, M. W., Paw, M. J. C. A., van Sluijs, E. M., van Poppel, M. N., & van Mechelen, W. (2006). Promoting physical activity with people in different places—A Dutch perspective. *Journal of Science and Medicine in Sport*, 9(5), 371-377.

Ricci, J. A., & Chee, E. (2005). Lost productive time associated with excess weight in the US workforce. *Journal of Occupational and Environmental Medicine*, 47(12), 1227-1234.

Southern Cross NZ (2017). "High blood cholesterol levels." High blood cholesterol levels - Southern Cross NZ. Available from: <https://www.southerncross.co.nz/group/medical-library/high-blood-cholesterol-levels>. (Accessed April 2017).

Statistics New Zealand. NZ Ministry of Health. New Zealand mortality statistics: 1950 to 2010. Available from: [www.moh.govt.nz](http://www.moh.govt.nz) (Accessed July 2011).

Toker, S., & Biron, M. (2012). Job burnout and depression: unraveling their temporal relationship and considering the role of physical activity. *Journal of Applied Psychology*, 97(3), 699.

van Oostrom, S. H., Smit, H. A., Wendel-Vos, G. W., Visser, M., Verschuren, W. M., & Picavet, H. S. J. (2012). Adopting an active lifestyle during adulthood and health-related quality of life: the Doetinchem Cohort Study. *American Journal of Public Health*, 102(11), e62-e68.