

Truckies and the Australian transport industry: Managers' perspectives about enablers and inhibitors to workplace health promotion

Author

Sendall, Marguerite C, Brodie, Alison, McCosker, Laura K, Crane, Phil, Fleming, Marylou, Biggs, Herbert C, Rowland, Bevan

Published

2021

Journal Title

Work

Version

Accepted Manuscript (AM)

DOI

[10.3233/WOR-203365](https://doi.org/10.3233/WOR-203365)

Downloaded from

<http://hdl.handle.net/10072/401021>

Griffith Research Online

<https://research-repository.griffith.edu.au>

Truckies and the Australian transport industry: Managers' perspectives about enablers and inhibitors to workplace health promotion

Marguerite C. Sendall^{a,*}, Alison Brodie^a, Laura K. McCosker^a, Phil Crane^a, Marylou Fleming^a, Herbert C. Biggs^{a,b} and Bevan Rowland^{a,b}

^a*School of Public Health and Social Work, Faculty of Health, Queensland University of Technology, Brisbane, Australia*

^b*Centre for Accident Research and Road Safety – Queensland (CARRS-Q), Queensland University of Technology, Brisbane, Australia*

Received 4 June 2019

Accepted 28 April 2020

Abstract.

BACKGROUND: There is little published research about managers' views on implementing and embedding workplace health promotion interventions.

OBJECTIVE: To shed light on research-to-practice challenges in implementing workplace health promotion interventions in the Australian road transport industry.

METHODS: In this Participatory Action Research project, managers from small-to-midsized companies in the Australian road transport industry were asked their views about enablers and barriers to implementing nutrition and physical activity interventions in their workplace.

RESULTS: Managers identified practical assistance with resources, ideas, and staffing as being key enablers to implementation. Barriers included time restraints, worker age and lack of interest, and workplace issues relating to costs and resources.

CONCLUSION: Manager perspectives add new insights about successful implementation of workplace health promotion. A Participatory Action Research approach allows managers to develop their own ideas for adapting interventions to suit their workplace. These findings add to a small body of knowledge of managers' views about implementing workplace health promotion in small-to-midsized road transport companies - a relatively unexplored group. Managers highlight the importance of time constraints and worker availability when designing interventions for the road transport industry. Managers require a good understanding of the workplaces' socio-cultural context for successful health promotion and health behaviour change.

Keywords: Participatory action research, management, implementation, interventions, truck drivers

1. Introduction

Many people spend a significant amount of time, estimated at up to 60% of waking hours, in their place of work [1–3]. This makes the workplace an ideal environment to promote and support healthy behaviour change [4–8]. For truck drivers, their truck

*Address for correspondence: Marguerite C. Sendall, School of Public Health and Social Work, Queensland University of Technology, Victoria Park Road, Kelvin Grove, Queensland, 4059, Australia. Tel.: +61 7 3138 3526; Fax: +61 7 3138 3369; E-mail: m.sendall@qut.edu.au.

37 is their workplace. In Australia, many truck drivers
38 are middle-aged and older males, with a high Body
39 Mass Index, poor nutritional habits [9, 10] and an
40 increased risk of chronic disease [11–13]. The phys-
41 ical demands of the job, the stress of meeting tight
42 deadlines, financial pressures, long sedentary peri-
43 ods spent confined to their vehicle, and a restricted
44 opportunity to access nutritious foods all contribute
45 to an increased health risk [12, 14]. The workplace
46 environment itself, including the systems, structures,
47 policies and culture, may have a direct impact on
48 truck drivers' health and may play a key role in
49 enabling or preventing them from making better
50 health choices [15–17].

51 Workplace health promotion interventions, partic-
52 ularly those which use a Participatory Action Res-
53 earch (PAR) approach, focus on the effect of the
54 physical and psychosocial work environment on ind-
55 ividual behaviour change. An advantage of work-
56 place health promotion is that multiple interventions
57 can be applied at different levels. This means it is
58 possible to address organisational and environmen-
59 tal/policy issues and factors at the individual level
60 [18]. Workplace health promotion has the poten-
61 tial to reduce health risk behaviours and improve
62 employee health [19–22]. Few Australian workplaces,
63 particularly small-to-medium sized companies, have
64 implemented workplace health promotion strategies
65 [23]. In the road transport industry, limited efforts
66 to implement workplace health promotion have gen-
67 erally been inadequate and unsuccessful [24]. To
68 understand why, it is necessary to understand the
69 factors affecting workplace health promotion par-
70 ticipation and implementation from multiple levels
71 within the workplace [23].

72 Workplace managers and other high-level decision
73 makers have direct influence over health promotion
74 in their workplace [25] but may be overlooked in the
75 process of designing and implementation interven-
76 tions. Middle managers serve as a bridge between
77 workers and upper management and can encourage
78 motivation and uptake in their workers. Previous
79 research suggests managers may be one of the key
80 factors in the success of health promotion projects
81 [25–28]. Despite this, there has been little published
82 research about managers' views about implement-
83 ing and embedding workplace health promotion
84 interventions [19, 25], particularly in the Australian
85 transport industry.

86 To address this gap, this project will explore
87 managers' views about the enablers and barriers to
88 implementing health promotion interventions in their

workplace, as part of a larger workplace health pro- 89
motion initiative in the Australian road transport 90
industry. 91

2. Methods 92

The Queensland Transport Industry Workplace 93
Health Intervention project was an applied mixed- 94
methods, settings-based health promotion research 95
project conducted with six diverse transport indus- 96
try workplaces employing between 20 and 300 97
truck drivers in south-east Queensland [29]. This 98
project used a collaborative Participatory Action 99
Research (PAR) approach to identify contextualised 100
and relevant health promotion interventions for each 101
workplace to support truck drivers to improve their 102
diet and levels of physical activity. The project is 103
described in detail elsewhere [10, 29]. 104

Six workplace managers and 30 truck drivers 105
from six transport companies were engaged collab- 106
oratively to develop nutrition and/or physical activ- 107
ity health promotion interventions for truck drivers 108
at their workplace. Seven interventions, for example, 109
the provision of free fruit, brief 'toolbox' health 110
talks, self-monitoring of physical activity, and a 111
health awareness social media page, were developed 112
by the workplaces and the project team. Each work- 113
place manager was supported by the project team 114
to implement and evaluate three or more of these 115
interventions. Participatory Action Research meth- 116
ods such as interviews, surveys and focus groups, 117
and focussed observation were used to evaluate the 118
interventions. Workplace managers and truck drivers 119
were asked their opinion about engagement and sat- 120
isfaction with the intervention. Qualitative and quan- 121
titative data were collected, analysed and reported. 122
Ethical approval was obtained from the Queensland 123
University of Technology Human Research Ethics 124
Committee (approval number 1300000412). 125

This paper reports the qualitative findings of semi- 126
structured interviews conducted with six (five male, 127
one female) workplace managers immediately after 128
completion of the three-month workplace 'interven- 129
tion phase' and at a six month post-intervention fol- 130
low-up. Managers were identified when workplaces 131
were recruited to the project and volunteered to par- 132
ticipate in semi-interviews. Interviews were conduc- 133
ted to gain an understanding of the enablers and 134
barriers to the sustainability of interventions. Inter- 135
views were conducted by a member of the project 136
team at a time and place convenient for the manager, 137

such as in their office or the tearoom, and took between 20 and 70 minutes. As part of a larger structured interview about the interventions, managers were asked five open-ended questions about their involvement in implementing the interventions, the challenges and enablers of implementation, and their intention to continue implementing the interventions. The specific questions were: ‘Can you describe how management (yourself or others) got involved and supported the workplace health and wellbeing initiative?’, ‘What factors made it difficult for you to implement any of the strategies?’, ‘What factors made it easy for you to implement any of the strategies?’, and ‘In terms of implementing the strategies, what would you do differently in the future’, ‘Does management intend to continue to run, or re-run, any of the strategies?’.

Each interview was digitally recorded with consent and transcribed verbatim. A rigorous process of open and axial coding-and-theming was used to analyse the data [26]. Firstly, significant statements made were identified in context, read several times, assigned a code and organised into a group by a member of the project team. This process was repeated until the groups settled to represent a theme. Next, other members of the project team read and re-read the full transcripts and discussed the themes critically to reach agreement. The themes represent the key aspects of workplace managers’ thoughts about the enablers and barriers to implementing selected health promotion interventions in their workplace. Quotations were extracted to represent typical views and themes.

3. Findings

Road transport industry workplace managers perceive several factors which enable and inhibit the implementation of health promotion interventions in their workplaces. These factors, which fall into three themes, are presented here:

3.1. Theme 1: Assistance as an enabler: “It would be something you wouldn’t be able to do without [support]” (WP4)

This theme represents workplace managers’ perspective about assistance as enabler to implement health promotion interventions. The workplace managers feel assistance is needed in three ways – from the project team, company administration, and government.

Most workplace managers reflected on the pivotal role of the project team in enabling the implementation of the interventions. The managers suggest the project team was helpful in providing ideas about the types of workplace health promotion interventions which may be implemented, and knowledge and resources necessary for implementation:

“[We] probably wouldn’t have thought of going down the poster path if you hadn’t provided them” (WP1).

Workplace managers suggest company administrative assistance from others such as office staff is an enabler to implement interventions. When asked about the intervention involving the delivery of health messages to truck drivers – for example, by printing these messages on drivers’ payslips – one workplace manager explained:

“I just got the girls in the office to do that” (WP4).

Another mentioned:

“[I would’ve] tried to get someone else a little bit more involved to help do it. Being a manager, it’s difficult” (GBFF)

Workplace managers feel an enabler to implement interventions would be assistance from government. One workplace manager considered the input of government organisations into industry health and wellbeing programs to be valuable:

“It’s only a matter of the government getting behind you” (WP4).

3.2. Theme 2: Truck drivers as a barrier:

“There’s no time when everyone’s here at once” (WP4)

This theme represents workplace managers’ perspective about issues related to the truck drivers as a barrier to implement health promotion interventions. The workplace managers feel access to, and the age of the truck drivers, is problematic.

All workplace managers mentioned the difficulties in accessing their workers due to the mobile and sometimes unpredictable nature of their work. One workplace manager said:

“It’s very difficult. I might see twenty drivers in a day but it’s all at different times” (WP1).

This idea was explained further by another workplace manager:

“[Local drivers’] hours are so different. You could have one starting at 2am in the morning and finishing at 9am, you could have one start at 7 and finish at 5...” (WP5).

Another workplace manager agreed:

235 “You try and get people together, to get them to
236 stop, you’ve nearly got to do it individually” (WP4).

237 Workplace managers with drivers completing line-
238 haul had additional challenges:

239 “They’re [the drivers] all over the place. You’re
240 lucky to see these guys once a week, once a month”
241 (WP2).

242 “You have a captive audience, they couldn’t avoid
243 getting the sermon when they’re here in the morning.
244 They have to be here at the meeting and they have
245 to sign the toolbox sheets at the end of the toolbox
246 [session] to say they were there” (WP1).

247 A number of the workplace managers perceived the
248 age of the participating truck drivers to be a barrier.
249 One of the workplace managers explained this idea:

250 “You’ve got to aim it to an age-group that can
251 change and that will change” (WP1).

252 Another driver put it similarly:

253 “My drivers are the wrong age-group in most
254 cases; they’re not young enough for it . . . it’s tech-
255 nology they don’t use” (BTP)

256 3.3. Theme 3: Resources as a barrier:

257 “Anything that has to be purchased . . . I’m
258 not going to get that authorised” (WP1)

259 This theme represents workplace managers’ per-
260 spective about issues related resources as barrier
261 to implement health promotion interventions. The
262 workplace managers feel the cost of interventions
263 and availability of resources is challenging. Work-
264 place managers feel interventions which require the
265 purchase of materials – such as the free fruit inter-
266 vention (requiring the regular purchase of fruit by
267 the workplace), and the ten thousand steps challenge
268 (requiring the one-off purchase of pedometers by the
269 truck drivers) difficult because of the cost. These
270 quotes reflect views expressed by most workplace
271 managers:

272 “I don’t think they [the truck drivers] were
273 interested in paying for a step-counter themselves
274 [though] they would have been interested in partak-
275 ing in the study to see if they were actually doing ten
276 thousand steps . . . There was a missed opportunity
277 there” (WP1).

278 And:

279 “The ten thousand steps was a cost one as well.
280 The directors knocked that one back and the free fruit
281 supply was just along the lines of ‘Well, if we’re not
282 going to supply biscuits then . . . if it’s a cost thing,
283 why go out and purchase something else for the same
284 cost” (WFL)

285 And more bluntly:

286 “The money rang a few bells for the accountant”
287 (BTP)

288 One workplace manager provided insight into the
289 reasons why their company did not implement a par-
290 ticular intervention.

291 “We couldn’t do that with our software program.
292 We could do individual text messages, but not group
293 ones . . . We didn’t do any printouts because we’re
294 pretty huge about saving costs on printing here so we
295 didn’t find it viable to do lots of printing of personal
296 messages” (WP5).

297 4. Discussion

298 This project sought the views of six transport
299 industry managers about the enablers and barriers
300 to implementing health promotion interventions in
301 their workplace. Participants were mainly operat-
302 ing managers with limited knowledge of prevention
303 and workplace health promotion, however they were
304 receptive to the interventions and to workplace health
305 promotion in general. The PAR approach allowed
306 managers to develop their own ideas about how their
307 interventions could be adapted to suit their unique
308 workplace context. Managers were open and willing
309 to discuss their perceptions of nutrition and phys-
310 ical activity issues in their workplace and provide
311 feedback about the process of implementation of
312 their selected interventions. We found they described
313 more barriers rather than enablers to implementation,
314 with three key themes emerging: 1) assistance as an
315 enabler, 2) truck drivers as a barrier, and 3) resources
316 as a barrier.

317 4.1. Enabler: Workplaces need assistance

318 We identified factors internal and external to
319 workplaces which assisted managers to implement
320 interventions. These included guidance about ideas
321 and activities, human and material resources provided
322 by the research team, practical assistance from project
323 and internal staff, and assistance from government or
324 other bodies. These factors concur with enabling fac-
325 tors identified in other research [31–34]. Similar to
326 the findings of Laws et al. [19], several managers
327 in our participating workplaces struggled to iden-
328 tify activities or programs they could implement and
329 were open to ideas or suggestions that might work for
330 their workplace. More specifically, managers needed
331 assistance with ideas or activities suitable for the age,

abilities and interests of their workers, which could be easily be integrated into the running of the workplace and at little-to-no cost. We found managers placed considerable value on the support given by the project team to help them identify suitable activities and engage their workforce, and several mentioned they could not have implemented the intervention without the team's assistance. This suggests a general lack of capacity and highlights the importance of providing managers with appropriate guidance on how to best implement health promotion activities. In most situations this requires upper management to be invested in the benefits of workplace health promotion and willing to identify staffing and resource requirements prior to implementation [35].

Where capacities do not fully exist within a workplace, which is likely in small-to-mid-sized workplaces without active wellness teams, outside assistance may be required. Structured health promotion programs run by a third party are expensive and would likely not fit into the inflexible work schedules of workers the road transport industry. Networking or developing collaborations with similar workplaces, sharing resources and facilities, and drawing on the experience of other individuals with knowledge how to build capacity in organisational health promotion, are options that could contribute to managers' implementation capacity with minimal financial outlay [36].

Our finding of the value of government assistance with implementing interventions aligns with previous findings from others [19]. Australian workplace managers believe government should play a role in supporting workplace health promotion in order to reduce the financial burden on the workplace. Support could take the form of small grants to establish programs, financial incentives for workplaces to provide workplace health promotion or to employees who choose to uptake it, and generally promoting awareness of health issues through education and social marketing campaigns. Local government could also play an important role in linking workplace managers to broader government initiatives, promoting locally run programs, activities or facilities, and providing a point of contact to share information and ideas with other local businesses [19].

Within the workplace, internal capacity was a strong enabler. Assistance with day-to-day logistics such as printing health messages or general office administration, increased the likelihood of health promotion interventions being implemented successfully. Identifying staff with higher-level health

promotion skills and investing time in staff training in workplace health promotion could be helpful for building and/or strengthening the internal capacity. Similarly, having a dedicated health promotion champion or 'change agent' [34] who, as part of their work role, is dedicated to driving interventions, could assist with maintaining worker interest and motivation and help the intervention be sustainable in the long term.

4.2. *Barrier: Workers issues*

There are many challenges involved in implementing workplace health promotion in geographically disparate, multi-site and multi-occupational workforces such as the road transport industry. We found the major barrier was the unavailability of drivers due to their high mobility, shift work, lack of consistent routine, and erratic work schedules with tight deadlines. Other studies, even those in workforces with regular business hours, identified time constraints and difficulties in scheduling and synchronising activities as major barriers to implementing interventions promotion [6, 19, 23, 32]. Workplace health promotion in the road transport industry is challenged, therefore, by the need to be relevant to, and compatible with, the work, logistics, and the lifestyle [5, 33]. Here, workplace managers can play a unique role. Knowing the workplace structure, processes, and workforce enabled managers to nuance interventions to best suit their workers. We found managers described "different breeds" of drivers (line haul versus day drivers) who varied in their time availability, health attitudes, and risk factor profiles. Thus, even within an individual workplace, there is no 'one size fits all' approach. Overall, it was difficult to implement interventions requiring attendance in a physical location at a regular time. If physical attendance is required, health promotion activities for road transport workers should be kept brief and scheduled on a variety of days and times to encourage attendance [37]. Most important in this process is accommodating changes to drivers' work rosters to support engagement in workplace health promotion. However, this occurred in just one of the larger workplaces, potentially being less feasible in smaller workplaces with reduced capacity for flexibility in work schedules [38]. Alternative options are to keep activities flexible and unstructured (such as subsidised gym membership) and able to be undertaken out of work time

Truck drivers in our participating workplaces were also mostly middle-aged males, and this was

434 identified as being a significant barrier to imple-
435 mentation of workplace health promotion. Older
436 drivers were found to be lacking engagement with
437 certain interventions, particularly those involving
438 digital technologies like social media. They were also
439 described as being ‘set in their ways’, not “young
440 enough” to understand or care about using digital
441 technologies, viewing interventions as irrelevant to
442 themselves, and generally unwilling to change their
443 behaviour. This highlights the importance of the ‘fit’
444 between the intervention, workplace and workers -
445 targeting the right intervention to the right group and
446 context - and being flexible and adaptive to the work-
447 place demographic. Relatability, perceived need,
448 personal characteristics and lack of skills can nega-
449 tively affect motivation, commitment and compliance
450 with workplace health promotion. Time and avail-
451 ability constraints may mean the most effective in-
452 terventions will be those which are easiest and quick-
453 est to implement, and again, do not require attendance
454 at a specific place and time. In planning interven-
455 tions to improve workplace health promotion with
456 truck drivers, practitioners need to consider if an
457 intervention is relevant, interesting, suitable, easy,
458 cheap, and minimally demanding of time. More con-
459 temporary strategies such as those involving digital
460 technologies may not be appropriate unless workers
461 have the relevant digital resources and the interest
462 and skills to use them. Fundamental to success is
463 good planning, encompassing engagement and con-
464 sultation with workers to determine personal needs,
465 motivation and aptitudes, and offering ideas for a
466 range of different types of activities to appeal to dif-
467 ferent individuals.

468 4.3. *Barriers: Workplace issues*

469 We found the financial cost of implementing inter-
470 ventions was frequently mentioned as a barrier to
471 workplace health promotion, concurring with the
472 findings of many others [16, 19, 22, 31, 32, 39].
473 Both staff costs (for implementing and/or participat-
474 ing in the intervention), and resource and materials
475 costs, were identified. The significance of the finan-
476 cial burden varied by workplace. Linnan et al. [39]
477 found senior managers in the manufacturing indus-
478 try were much less likely than middle managers to
479 believe cost was a barrier to workplace health pro-
480 motion. By contrast, we found some senior managers
481 were unlikely to authorise any purchases relating to
482 workplace health promotion, no matter how small. As
483 workplace size impacts on the management structure

484 and general outlays and expenditure, it is likely the
485 varying size of our participating workplaces (employ-
486 ing between 20 and 200 drivers) may have impacted
487 on managements’ willingness to spend on workplace
488 health promotion.

489 It may also reflect the organisations’ commitment
490 to health promotion amongst other competing work-
491 place priorities. While not specifically discussed, the
492 general culture of the workplace, and more specifi-
493 cally, the ‘culture of caring’ for driver wellbeing, was
494 evident in some workplaces more than others. A sup-
495 porting and caring workplace culture which values
496 the wellbeing of their workforce and adopts company
497 policies accordingly, is one of the most often cited
498 enablers to successful workplace health promotion
499 [15, 16, 19, 32, 34]. Workers have been shown to be
500 more likely to participate in health promotion activi-
501 ties when they felt that their supervisor or colleagues
502 expected them to participate [19].

503 As a corollary, a lack of high level or ‘top-down’
504 support can be highly detrimental to workplace health
505 promotion as it can lead to obstructive financial and
506 motivational barriers which trickle down through lay-
507 ers of management [40]. Given that poor health and
508 a high incidence of chronic disease is a recognised
509 problem in the truck driving workforce, improv-
510 ing driver wellness should be a core organisational
511 value. A goal is to achieve greater ‘buy-in from
512 senior management to encourage health promotion
513 to be incorporated into workplace governance. In
514 our discussions we did not find managers referenced
515 the tangible financial advantage to be gained from
516 looking after their drivers’ physical and emotional
517 wellbeing. Improved worker health increases morale
518 and reduces illness-related absences, thereby increas-
519 ing productivity [15, 34]. Providing evidence to upper
520 management of the cost and benefits of workplace
521 health promotion, and guidance on how to best imple-
522 ment activities and programs may be important to
523 increasing support.

524 Within the managerial hierarchy, it is likely per-
525 sonal characteristics and motivations of the middle
526 manager and the amount of direct contact they have
527 with their workers might affect their belief in the value
528 of workplace health promotion. We found managers
529 in this project were generally receptive, enthusias-
530 tic and motivated. This is not surprising given the
531 PAR approach to developing the interventions had
532 involved managers from inception, hence their levels
533 of engagement may be much higher than managers
534 implementing top-down or externally-driven inter-
535 ventions. Several studies have noted manager support

can be the key to successful workplace health promotion implementation [34, 40] as managers have direct influence on the adoption process [31]. Managers in this project were enablers and advocates, it was only at upper management levels where barriers were noted. Interestingly, no managers identified their own skills, or lack of, as being either enablers or barriers to implementation. These findings might suggest targeted interventions to address manager beliefs, including differences by age, experience, and manager level, may be worthwhile when developing workplace health promotion interventions [39].

4.4. Strengths and limitations

Our project findings are strengthened using a Participatory Action Research approach and the rich data gained from qualitative interviews with workplace managers. The findings add to the currently limited body of knowledge about barrier and enablers to workplace health promotion in small-to-mid-sized transport industries - a relatively unexplored group [31], and are meaningful for similar sized transport workplaces, especially those with a mobile workforce.

The qualitative nature of this project, the small number of workplaces involved, and the non-representative sample means it may not be possible to generalise the findings beyond the scope of those interviewed. It is possible recruitment of transport companies may have favoured those previously associated with the project team, and/or more generally engaged with the health of their workforce than other transport industries. For these reasons the views expressed by the managers may not be representative of managers from other road transport companies within the country or internationally [41].

5. Conclusions

The Participatory Action Research project explored the perspectives of road transport industry managers about the enablers and barriers to implementing selected health promotion interventions in their workplace. Managers in the six participating workplaces identified similar issues, including organisational, human, and environmental factors. Internal and external staff and resource support was identified as a key enabler to workplace health promotion implementation, and costs, workplace culture, time constraints, and the age and lack of interest

in workers were identified as barriers. This paper suggests transport industries should ensure workplace health promotion efforts have high level support and adopt flexible approaches which are resource, cost and time efficient, and sensitive to the unique culture and characteristics of their workforce. Strategies should build on pre-existing initiatives, use or adapt existing resources, and consider how to facilitate long-term implementation by integrating health promotion goals into the workplace's ongoing strategies. Workplace managers have an important role to play because successful workplace health promotion is highly context-dependent and interventions need to be finessed to suit the context of the workplace. Our findings can guide workplace managers and health promotion practitioners in developing and implementing future workplace health promotion interventions in the road transport industry or other industries where similar resources and/or challenges, such as a highly mobile workforce, are faced.

Conflict of interest

None to report.

References

- [1] Bureau of Labor Statistics. American Time Use Survey. [cited 2018 Feb 10]. Available from: <https://www.bls.gov/tus/>
- [2] Australian Bureau of Statistics. 6291.006 – Labour force, Australia. Australian Bureau of Statistics: Canberra, Australia; 2014.
- [3] Wyatt KM, Brand S, Ashby-Pepper J, Abraham J, Fleming LE. Understanding how healthy workplaces are created: implications for developing a national health service healthy workplace program. *Int J Health Serv.* 2015;45:161-85.
- [4] Chu C, Breucker G, Harris N, Stitzel A, Gan X, Gu X, Dwyer S. Health-promoting workplaces – International settings development. *Health Promot Int.* 2000;15:155-67.
- [5] Donaldson-Fielder EA, Lewis R, Pavey L, Jones B, Green M, Webster A. Perceived barriers and facilitators of exercise and healthy dietary choices: A study of employees and managers within a large transport organization. *Health Educ J.* 2017;76(6):661-75.
- [6] Kilpatrick M, Blizzard L, Sanderson K, Teale B, Jose K, Venn A. Barriers and facilitators to participation in workplace health promotion (WHP) activities: results from a cross-sectional survey of public-sector employees in Tasmania, Australia. *Health Promot J Aust.* 2017;28(3):225-32.
- [7] Rongen A, Robroek SJ, van Ginkel W, Lindeboom D, Altink B, Burdorf A. Barriers and facilitators for participation in health promotion programs among employees: a six-month follow-up study. *BMC Public Health.* 2014;14:573.

- 633 [8] Genin P, Beaujouan J, Thivel D, Duclos M. Is workplace an
634 appropriate setting for the promotion of physical activity? A
635 new framework for worksite interventions among employ-
636 ees. *Work*. 2019;62(3):421-6. doi: 10.3233/WOR-192873
- 637 [9] Gilson ND, Pavey TG, Vandelanotte C, Duncan MJ, Gomersall SR, Trost SG, Brown WJ. Chronic disease risks and use of a smartphone application during a physical activity and dietary intervention in Australian truck drivers. *Aust NZ J Publ Heal*. 2016;40(1):91-3.
- 640 [10] Sendall MC, Crane P, McCosker LK, Biggs H, Fleming M-L, Rowland B. (2016). Workplace interventions to improve truck drivers' health knowledge, behaviours and self-reported outcomes. *Road Transp Res*. 2016;25(1):16-27.
- 647 [11] Apostolopoulos Y, Lemke MK, Hege A, Sönmez S, Sang H, Oberlin DJ, Wideman L. Work and Chronic Disease: Comparison of Cardiometabolic Risk Markers between Truck Drivers and the General US Population. *J Occup Environ Med*. 2016;58(11):1098-105.
- 652 [12] Sieber WK, Robinson CF, Birdsey J, Chen GX, Hitchcock EM, Lincoln JE, Nakata, A, Sweeney MH. Obesity and other risk factors: the national survey of U.S. long-haul truck driver health and injury. *Am J Indust Med*. 2014;57(6):615-26.
- 657 [13] Das BM, Mailey E, Murray K, Phillips SM, Torres C, King AC. From sedentary to active: Shifting the movement paradigm in workplaces. *Work*. 2016;54(2):481-7. doi: 10.3233/WOR-162330
- 661 [14] Wong JYL, Gilson ND, Bush RA, Brown WJ. Patterns and perceptions of physical activity and sedentary time in male transport drivers working in regional Australia. *Aust NZ J Publ Heal*. 2014;38(1):314-20.
- 665 [15] Nea FM, Pourshahidi LK, Kearney J, Livingstone MBE, Bassul C, Corish CA. A Qualitative Exploration of the Shift Work Experience: The Perceived Barriers and Facilitators to a Healthier Lifestyle and the Role of the Workplace Environment. *J Occup Environ Med*. 2017;59(12):1153-60.
- 671 [16] Waterworth P, Pescud M, Chappell S, Davies C, Roche D, Shilton T, Ledger M, Slevin T, Rosenberg M. Culture, management and finances as key aspects for healthy workplace initiatives. *Health Promot Int*. 2018;33(1):162-72.
- 675 [17] Boeijinga A, Hoeken H, Sanders J. An analysis of health promotion materials for Dutch truck drivers: Off target and too complex? *Work*. 2017;56(4):539-49. doi: 10.3233/WOR-172503
- 678 [18] Bull SS, Gillette C, Glasgow RE, Estabrooks P. Work site health promotion research: to what extent can we generalize the results and what is needed to translate research to practice? *Health Educ Behav*. 2003;30(5):537-49.
- 683 [19] Laws R, St George A, King L, Rissel C. Prevention Research Collaboration. Employer perspectives of workplace health promotion: Key findings from qualitative interviews. The University of Sydney, 2013.
- 687 [20] Osilla KC, Busum KV, Schnyer C, Larkin JW, Eibner C, Mattke S. Systematic review of the impact of worksite wellness programs. *Am J Manag C*. 2012;18:e68-81.
- 689 [21] Rongen A, Robroek SJW, Lenthe FJV, Burdorf A. Workplace health promotion. A meta-analysis of effectiveness. *Am J Prev Med*. 2013;44:406-15.
- 692 [22] A Staats U, Lohaus D, Christmann A, Woitschek M. Fighting against a shortage of truck drivers in logistics: Measures that employers can take to promote drivers' work ability and health. *Work*. 2017;58(3):383-97. doi: 10.3233/WOR-172626
- [23] Sargent GM, Banwell C, Strazdins L, Dixon J. Time and participation in workplace health promotion: Australian qualitative study. *Health Promot Int*. 2016;33(3):436-47.
- [24] Lemke M, Apostolopoulos Y. Health and wellness programs for commercial motor-vehicle drivers: organizational assessment and new research directions. *Workplace Health Saf*. 2015;63(2):71-80.
- [25] Justesen JB, Eskerod P, Christensen JF, Sjøgaard G. Implementing workplace health promotion – role of middle managers. *Int J Workplace Health Manag*. 2017;10(2):164-78.
- [26] Dellve L, Skagert K, Vilhelmsson R. Leadership in workplace health promotion projects: 1- and 11. 2-year effects on long-term work attendance. *Eur J Publ Health*. 2007;17:471-6.
- [27] Dunkl A, Jiménez P. Using smartphone-based applications (apps) in workplace health promotion: The opinion of German and Austrian leaders. *Health Informatics J*. 2017;23(1):44-55.
- [28] Whitehead D. Workplace health promotion: the role and responsibility of health care managers. *J Nurs Manag*. 2016;14:59-68.
- [29] Queensland University of Technology. Queensland Transport Industry Workplace Health Intervention: A workplace-based Participatory Action Research project to investigate the effectiveness of nutrition and physical activity interventions for truck drivers in six Queensland transport industry workplaces: 2012-2015. 2015. Available from: <https://eprints.qut.edu.au/85201/7/QTIWHI%20-%20Final%20Report%20DEIDENTIFIED%202015.07.17A.pdf>
- [30] Liampittong P. *Qualitative Research Methods*. 4th Edition. Oxford University Press: South Melbourne, Victoria; 2013.
- [31] Hannon PA, Hammerback K, Garson G, Harris JR, Sopher CJ. Stakeholder perspectives on workplace health promotion: a qualitative study of midsized employers in low-wage industries. *Am J Health Promot*. 2012;27(2):103-10.
- [32] Rojatz D, Merchant A, Nitsch M. Factors influencing workplace health promotion intervention: a qualitative systematic review. *Health Promot Int*. 2017;32(5):831-9.
- [33] Paguntalan J C, Gregoski M. Physical activity barriers and motivators among high-risk employees. *Work*. 2016; 55(3):515-24. doi: 10.3233/WOR-162424
- [34] Zhang Y, Flum M, Kotejoshyer R, Fleishman J, Henning R, Punnett L. Workplace Participatory Occupational Health/Health Promotion Program: Facilitators and Barriers Observed in Three Nursing Homes. *J Gerontol Nurs*. 2016;42(6):34-42.
- [35] Mellor N, Webster J. Enablers and challenges in implementing a comprehensive workplace health and well-being approach. *Int J Workplace Health Manag*. 2013;6(2):129-42.
- [36] Lang JE, Hersey JC, Isenberg KL, Lynch CM, Majestic E. Building company health promotion capacity: a unique collaboration between Cargill and the Centers for Disease Control and Prevention. *Prev Chronic Dis*. 2009;6(2):1-9.
- [37] Shain M, Kramer DM. Health promotion in the workplace: framing the concept, reviewing the evidence. *Occup Environ Med*. 2004;61 (7):643-8.
- [38] Sendall MC, Crane PR, McCosker LK, Biggs HC, Rowland BD. Truckies and health promotion: using the ANGELO framework to understand the workplace's role. *Int J Workplace Health Manag*. 2017;10(6):406-17.
- [39] Linnan L, Weiner B, Graham A, Emmons K. Manager beliefs regarding worksite health promotion: findings from

- 763 the Working Healthy Project 2. *Am J Health Promot.* 2007;21(6):521-8. 770
- 764 771
- 765 [40] Milner K, Greyling M, Goetzel R., Da Silva R, Kolbe- 772
- 766 Alexander T, Patel D, Nossel, C, Beckowski M. The 773
- 767 relationship between leadership support, workplace health
- 768 promotion and employee wellbeing in South Africa. *Health*
- 769 *Promot Int.* 2015;30(3):514-22.
- [41] Pescud M, Teal R, Shilton T, Slevin T, Ledger M, Waterworth P, Rosenberg M. (2015), Employers' views on the promotion of workplace health and wellbeing: a qualitative study. *BMC Public Health.* 2015;15:642.

Uncorrected Author Proof