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Challenging assumptions underlying physical activity promotion for health care professionals in Australia: A data-prompted interview study

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Abstract

Issue Addressed: Interventions targeting health care professionals' behaviours are assumed to support them in learning how to give behavioural advice to patients, but such assumptions are rarely examined. This study investigated whether key assumptions were held regarding the design and delivery of physical activity interventions among health care professionals in applied health care settings. This study was part of the 'Physical Activity Tailored intervention in Hospital Staff' randomised controlled trial of three variants of a web-based intervention.

Methods: We used data-prompted interviews to explore whether the interventions were delivered and operated as intended in health care professionals working in four hospitals in Western Australia ($N = 25$). Data were analysed using codebook thematic analysis.

Results: Five themes were constructed: (1) health care professionals' perceived role in changing patients' health behaviours; (2) work-related barriers to physical activity intervention adherence; (3) health care professionals' use of behaviour change

techniques; (4) contamination between groups; and (5) perceptions of intervention tailoring.

Conclusions: The intervention was not experienced by participants, nor did they implement the intervention guidance, in the way we expected. For example, not all health care professionals felt responsible for providing behaviour change advice, time and shift constraints were key barriers to intervention participation, and contamination effects were difficult to avoid.

So What? Our study challenges assumptions about how health care professionals respond to behaviour change advice and possible knock-on benefits for patients. Applying our learnings may improve the implementation of health promotion interventions in health care settings.

KEYWORDS

health care professionals, internet, online, physical activity, randomised controlled trial, tailoring

1 | INTRODUCTION

Health care professionals who have direct contact with patients are often tasked with giving health behaviour advice. Encouraging health care professionals to provide opportunistic behavioural advice to patients can improve patients' health behaviour and health.[1,2] However, not all health care professionals themselves engage in positive health behaviours. For example, a survey of Australian nursing students found around half had unbalanced diets, and 92% failed to meet activity guidelines.[3] This has the potential to compromise the credibility or effectiveness of advice to patients.[4]

Attempts have been made to support health care professionals to improve their own health, and by extension, their patients' health.[5] These have been at least partly based on the expectation that professionals will translate knowledge and practices gained from changing their own behaviour into enhanced support for patients.[6] This expectation can be deconstructed into a set of core assumptions: health care professionals will adhere to behaviour change recommendations, learn new health promotion strategies from doing so, and use these learnings to promote behaviour change among their patients. However, it is unclear whether such assumptions are founded. Understanding how health professionals respond to physical activity promotion interventions delivered to them in applied health care settings will help to assess whether assumptions underpinning intervention design and delivery are met.

The current study explores the experiences of health care professionals in the Physical Activity Tailored intervention in Hospital Staff (PATHS) trial,[7] which evaluated three computer-tailored intervention variants on physical activity among health care professionals in Australia. The PATHS interventions were based on three core assumptions: specifically, that in response to a tailored set of behaviour change techniques, health care professionals would (a) adhere to the intervention by implementing the techniques into their own lives, (b) learn how to best advise patients on effective behaviour change strategies and (c) be willing and able to implement these strategies in subsequent encounters with patients. This study presents a secondary analysis of interview data from the PATHS trial process evaluation,[1] to address the research question: 'Did core assumptions made when designing the PATHS intervention hold, and if not, why?' The study arose from our post-trial reflections on the interview data and was not preplanned.

2 | METHODS

2.1 | The PATHS trial

We designed the four-arm, randomised controlled 'PATHS' trial to test the effectiveness of three variations of a tailored physical activity intervention against a non-tailored control. Participants were health care professionals from one of four hospitals in Perth, Western Australia, recruited via advertisements on the hospital intranet, posters, leaflets and presentations at staff meetings (see Kwasnicka et al.[7]). All full-time and part-time hospital staff who self-reported <150 min of moderate physical activity per typical week were eligible for the trial. Trial exclusion criteria were: self-declared physical condition preventing increased physical activity; no mobile phone with SMS functionality; no internet access outside of work; already meeting weekly recommended levels of physical activity; or participating in another structured physical activity program.

2.2 | Design, participants and procedure

This study used semi-structured data-prompted interview methods,[8] whereby interview questions were informed by quantitative data collected at an earlier time point. Participants were a subsample of PATHS trial completers, recruited by direct email or in-person invitation. All participants who completed the PATHS trial and attended the final trial follow-up session (at 3 months post-baseline; $n = 109$) were

eligible for the present interview study. Budgetary constraints limited the sample to 25 participants (∼23% of the eligible sample), a sample size likely to capture a sufficient variety of experiences to address our research question.[9] While we aimed to interview a roughly equal number of participants from each condition, time and study personnel constraints necessitated first-come, first-served recruitment until our target sample (N = 25) was reached. None of those who responded to the recruitment invitation dropped out before the interview. PATHS trial recruitment was initiated later at the fourth hospital, so our sample size was reached before participants at the fourth hospital became eligible. Thus, our participants were drawn from only three PATHS hospital sites.

The first author (D.K.) conducted all interviews in 2018, face-to-face with individual participants and alone in a quiet space within participating hospitals, in front of a computer showing their personal intervention dashboard as an interview prompt. D.K. is a female, postdoctoral psychology researcher with extensive experience in qualitative interviewing and analysis, employed as a Research Fellow during data collection. D.K. had met participants in-person on four prior occasions to provide and collect activity monitors for data collection purposes (see Kwasnicka et al.[7]), so participants were familiar with the interviewer. Intervention recipients were interviewed 3 months after active intervention ceased, and control participants 3 months post-baseline. Interview questions were designed to capture reflections on physical activity and allocated treatment, and four domains underpinning long-term behaviour change (i.e., knowledge, conscious motivation, self-regulatory abilities and habits[10]). The interview guide is provided as Supporting Information Material S1. Each participant received an AUD20 shopping voucher.

Ethical approval was obtained from the host university (Curtin University Ethics Committee HR20/2016) and all participating hospitals' ethics committees (Hollywood Private Hospital Ethics Committee HPH443; King Edward Memorial Hospital Ethics Committee 2016034EW; St. John of God Hospital Ethics Committee 1008). All participants gave full informed consent.

2.3 | Treatment

As the PATHS trial ran across only four hospitals, hospital-level (i.e., cluster) randomisation was deemed unfeasible, so PATHS trial participants were randomly allocated individually to the four conditions. Control participants received (I) education only (non-tailored). Intervention participants received: (II) education and tailored intervention components targeting knowledge and conscious motivation ('motivation' condition); (III) education and tailored components targeting knowledge, motivation, and self-regulatory skills ('self-regulation' condition) or (IV) education and tailored components targeting knowledge, motivation, self-regulation and promoting behavioural automaticity ('habit' condition[11]). A description of hypothesised mechanisms and per-condition behaviour change techniques is available elsewhere.[7]

Intervention participants received six tailored intervention sessions fortnightly, administered via a web-based platform,

supplemented by SMS messages relaying key information. During each session, participants were asked questions about their physical activity, their cognitions (e.g., motivation to be active) and behaviours, which allowed 'if-then' algorithms to provide personally-tailored information. Feedback was tailored to multiple factors concurrently as appropriate in each condition; for example, participants in the 'self-regulation' condition reported minimal physical activity, a lack of motivation but high self-regulatory capability received advice aimed at increasing motivation. Control participants received access to a static website with basic, factual activity information, but no online sessions or SMS messages.

2.4 | Analysis

Verbatim interview transcripts of audio recordings were analysed using inductive codebook thematic analysis, from a realist epistemological perspective.[12] The aim of the analysis was to construct themes speaking to one or more of our intervention design assumptions. However, data coding drew attention to additional implicit assumptions we had made, and challenges to them, which we had not explicitly recognised.

Three authors (D.K., S.P. and B.G.) independently read and inductively coded five transcripts, generating lists of initial codes and potential clustering of codes into higher-level themes. Discussions between three analysts (D.K., S.P. and B.G.) inductively generated a thematic coding framework, which was subsequently applied and refined (by S.P. and D.K.) to the remaining transcripts. The credibility of later data interpretations was ensured using a 'critical friend' approach,[13] whereby iterative collaborative discussions were held between S.P., D.K. and B.G. until the themes reviewed and named by S.P. and D.K. were deemed by all three authors to be valid and coherent data representations. Themes are reported as topic summaries.[14]

2.4.1 | Reflexivity

D.K., S.P. and B.G. are health psychology researchers. D.K. and B.G. were involved in developing the intervention and designing the PATHS trial. S.P. was recruited to the research team after data collection, to gain the perspective of an analyst not previously involved in the PATHS trial.

3 | RESULTS

3.1 | Participant characteristics

Participants were 25 health care professionals (mean age 52.04 years, SD 7.23; 23 female, 2 male; Table 1), comprising 16 full-time and 9 part-time workers. Seven were from the control condition, six from the motivation intervention condition, five from the self-regulation condition, and seven from the habit condition. Ten participants worked in public and 15 in private hospitals. Most worked in clinical positions

TABLE 1 Treatment condition and participants' personal characteristics (N = 25).

No.	Condition and hospital	Age and gender	Marital status	Height, weight, ethnicity	Education	At work days per week	At work total hours per week (total night hours)	Absence sick days in the last 6 months	Work type and position	Total family income
1	Motivation, 3	46, F	Married	166 cm, 67 kg, White	Level 5	5	38 (0)	2	Clinical nurse educator, full-time non-shift worker	$2500- or more per week ($130 000 or more per year)
2	Self-regulation, 3	55, F	Married	168 cm, 69 kg, White	Level 6	5	50 (0)	1	Clinical nurse manager, full-time non-shift worker	$2500- or more per week ($130 000 or more per year)
3	Self-regulation, 3	51, F	Married	176 cm, 72 kg, White	Level 8	5	38 (0)	1	Clinical nurse manager, full-time non-shift worker	$2500- or more per week ($130 000 or more per year)
4	Control, 3	53, F	Married	163 cm, 92 kg, White	Level 7	4	40 (0)	2	Registered nurse, full-time shift worker	$2000-$2499 per week ($100 000-$129 999 per year)
5	Habit, 3	43, F	Married	162 cm, 75 kg, White	Level 8	5	36 (0)	7	Registered nurse, full-time shift worker	$2000-$2499 per week ($100 000-$129 999 per year)
6	Control, 3	61, M	Married	179 cm, 106 kg, White	Level 1	5	38 (0)	1	Other, full-time non-shift worker	$2500- or more per week ($130 000 or more per year)
7	Motivation, 3	52, F	Married	162 cm, 68 kg, White	Level 6	5	38 (0)	3	Clinical nurse specialist or consultant, full-time shift worker	$1500-$1999 per week ($78 000-$99 999 per year)
8	Control, 3	54, F	Married	173 cm, 75 kg, White	Level 5	4	32 (0)	1	Registered nurse, part-time shift worker	$2000-$2499 per week ($100 000-$129 999 per year)
9	Self-regulation, 2	61, F	Married	162 cm, 73 kg, White	Level 8	4	25 (0)	2	Clinical nurse educator, part-time non-shift worker	$2500- or more per week ($130 000 or more per year)
10	Self-regulation, 3	56, F	Married	158 cm, 72 kg, White	Level 6	4	32 (0)	2	Midwife, part-time non-shift worker	$1500-$1999 per week ($78 000-$99 999 per year)
11	Motivation, 3	36, F	Divorced	172 cm, 70 kg, White	Level 8	5	38 (10)	5	Clinical nurse, full-time shift worker	$1500-$1999 per week ($78 000-$99 999 per year)
12	Habit, 3	40, F	Married	165 cm, 67 kg, White	Level 5	4	28 (0)	2	Nurse, part-time shift worker	$2500- or more per week ($130 000 or more per year)
13	Control, 2	47, F	Married	167 cm, 73 kg, White	Level 9	5	36 (0)	1	Other, full-time non-shift worker	$2500- or more per week ($130 000 or more per year)
14	Habit, 2	59, F	Married	165 cm, 67 kg, White	Level 7	5	39 (0)	0	Clinical nurse educator, full-time non-shift worker	$2500- or more per week ($130 000 or more per year)
15	Habit, 2	61, F	Single/never married	154 cm, 62 kg, White	Level 9	4	32 (0)	1	Other, part-time non-shift worker	$1500-$1999 per week ($78 000-$99 999 per year)
16	Self-regulation, 3	59, F	Married	163 cm, 68 kg, White	Level 8	5	36 (0)	4	Clinical nurse manager, full-time non-shift worker	$2500- or more per week ($130 000 or more per year)
17	Motivation, 1	53, F	Married	160 cm, 69 kg, other	Level 2	3	24 (5)	0	Patient care assistant, part-time shift worker	$2500- or more per week ($130 000 or more per year)
18	Motivation, 2	65, F	Divorced	165 cm, 96 kg, White	Level 7	5	40 (0)	0	Clinical nurse educator, full-time non-shift worker	$1500-$1999 per week ($78 000-$99 999 per year)

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TABLE 1 (Continued)

No.	Condition and hospital	Age and gender	Marital status	Height, weight, ethnicity	Education	At work days per week	At work total hours per week (total night hours)	Absence sick days in the last 6 months	Work type and position	Total family income
19	Control, 2	59, F	Married	165 cm, 65 kg, White	Level 9	4	30 (0)	2	Midwife, part-time shift worker	$1000–$1499 per week ($52 000–$77 999 per year)
20	Habit, 2	53, F	Married	169 cm, 65 kg, other	Level 9	5	40 (0)	1	Clinical nurse educator, full-time non-shift worker	$2000–$2499 per week ($100 000–$129 999 per year)
21	Habit, 2	43, F	Married	167 cm, 67 kg, White	Level 8	4	30 (0)	2	Midwife, part-time non-shift worker	$2500–or more per week ($130 000 or more per year)
22	Control, 1	56, M	De facto/cohabiting	171 cm, 83 kg, White	Level 8	3	36 (0)	3	Clinical nurse, full-time shift worker	$2500–or more per week ($130 000 or more per year)
23	Motivation, 2	59, F	Married	182 cm, 70 kg, White	Level 7	5	40 (0)	40	Clinical nurse manager, full-time non-shift worker	$2500–or more per week ($130 000 or more per year)
24	Control, 2	53, F	Married	157 cm, 63 kg, White	Level 7	4	26 (0)	0	Other, part-time non-shift worker	$800–$999 per week ($41 600–$51 999 per year)
25	Habit, 1	51, F	Divorced	163 cm, 86 kg, White	Level 7	5	45 (0)	0	Clinical nurse manager, full-time non-shift worker	$1500–$1999 per week ($78 000–$99 999 per year)

Note: Hospital codes are: 1—private, 2—public, 3—private hospital. Education levels (in line with Australian education system): Level 1—Certificate I; Level 2—Certificate II; Level 5—Diploma; Level 6—Associate degree/Advanced diploma; Level 7—Bachelor degree; Level 8—Graduate diploma/certificate or Bachelor honours degree; Level 9—Master's degree (extended/coursework/research).

Abbreviations: F, female; M, male; weight, weight at baseline in kg.

and had a total weekly family income of AUD2,000–2499 (AUD100,000–129 999/year) and above. Participants were most commonly married (n = 20), White (n = 23), with children (on average, 2; M = 2.28, SD = 1.27), and higher or advanced education (associate degree/advanced diploma or higher; n = 20).

4 | THEMES

4.1 | Theme 1: Health care professionals' perceived role in changing patients' health behaviours

We assumed that by improving health care professionals' physical activity, participants would be better able to encourage patients to be active. Although supported by some ('*you are seen as a role model, so you [assume] that that role model would be a healthy person as well*'; Participant 15 [P15], 'other' professional), others felt it was not their own professional responsibility to change patients' behaviour, nor to 'lead by example'. Some felt it was other specialists' duty to support behaviour change:

> *[We] nurses can say, "You should be mobilising more", [...] but in terms of professional responsibility, it's actually the physiotherapist that guides the patient's exercise* (P25, nurse).

Several participants did not want to discuss health behaviour with patients, because they were not personally active, or were living overweight, so feared being seen to be hypocritical ('*it's hard to hold the higher ground if you are inactive or don't look healthy yourself*'; P13, 'other' professional).

A key perceived barrier to providing lifestyle advice was that consultations were too brief to offer meaningful opportunities:

> *If you've got someone smoking 60 cigarettes a day and a bottle of wine every night, you need more than just a 10-minute chat to convert that patient into having a healthier lifestyle* (P21, midwife).

Another perceived barrier was a lack of training for providing meaningful health behaviour advice ('*we're not all qualified in the specifics of it, [...] for more in-depth [healthy eating] information you would be referring to a dietician who's experienced in that regard*'; P3, clinical nurse manager). Some felt their role should solely be to signpost patients to more appropriate specialists.

4.2 | Theme 2: Work-related barriers to physical activity intervention adherence

We assumed participants would adhere to our intervention, yet many mentioned several work-related barriers to physical activity. For example, one participant felt that stress, lack of time, and a feeling of fatigue from standing all day prohibited leisure time physical activity ('*by the time you get out of here you're so mentally exhausted, and physically*'; P14, clinical nurse educator). Similarly, some participants reported that, although they appreciated the benefits of physical activity, physical fatigue prevented them from being active outside of work:

> *If you become fatigued then you can't actually get yourself back on track. Fatigue is definitely a downward spiral* (P19, midwife).

Most participants found it difficult to consider initiating or maintaining an exercise routine while working an unpredictable schedule ('*you can't get a set shift [...] [on] most of the wards, you've got to be prepared to work any time, 24/7, so you can't commit*'; P11, clinical nurse). Others described overlapping family and work commitments, mental and physical pressures, and low motivation:

> *Everything that I do is brain-strain [...] it's just about trying to motivate myself a bit more [to be active] ... you always have something [else] to do* (P13, 'other' professional).

4.3 | Theme 3: Health care professionals' use of behaviour change techniques

Several participants reported spontaneously adopting behaviour change techniques not recommended within their allocated condition. For example, some control participants reported buying exercise aids, monitoring their behaviour (i.e., self-regulation), or adopting context-specific activity patterns conducive to habit:

> *I've instituted a program where each night, after I've had my dinner ... I go for about a 50-minute walk and I'll basically go from park to park [...] I keep a note of my time* (P6, 'other' professional; control condition).

Others reported that study measurement procedures stimulated increased activity ('*I wore the [activity monitor] for the first week and I upped my exercise ... that kind of got me focused*'; P2, clinical nurse manager; 'self-regulation' intervention condition). These insights made us aware, on reflection, that we made an additional assumption when designing the intervention—that is, that health care professionals would use only the BCTs provided within their allocated intervention—which did not hold.

4.4 | Theme 4: Contamination between groups

Contrary to our instructions, participants reported sharing content with their colleagues. Given that participants were individually randomised, this introduced contamination between participants and conditions within hospitals. This raised our awareness of a further,

implicit assumption underpinning our intervention and trial design more broadly: that participants would withhold details of their allocated intervention from their co-workers.

For some participants, discussing their intervention resulted in the perception that others had received a superior intervention:

> I said to one of my colleagues, 'Come on, join this program'. She was very keen and she only works part-time and she exercises all the time. She said, 'Open your lock things' [intervention sessions that unlocked fortnightly] and I'm like, 'What lock things?' So, I'd go on her website and she's showing me, 'Look, I've opened this'. I'm like, 'I don't have those' (P4, registered nurse; control condition).

Some participants found the instruction not to discuss the intervention with others limiting, as they would have preferred to participate alongside others, for information-sharing, support and motivation:

> Not knowing who else is on it, it didn't give me the opportunity to discuss it with anyone else, which I think could have helped motivate me (P23, clinical nurse manager; 'motivation' condition).

Participants who became aware they did not receive a tailored version of the intervention were reportedly disappointed with the program and support provided, which limited enthusiasm and intervention engagement.

> A group that was [only reading] journal articles [control group] felt really duped that they didn't get what we [intervention group] got, and then they got really narky, and then they were like, 'Why should I do this?' (P5, registered nurse; 'habit' condition).

4.5 | Theme 5: Perceptions of tailoring

Most participants perceived personally-tailored information to be generic and insufficiently individualised. Some suggested that content should have been tailored to, for instance, shift types, or contextual barriers to exercise among health care professionals. Most participants identified that feedback was automatically generated by an algorithm ('it's doing its best as a computer, as a software program'; P20, clinical nurse educator). Perhaps because of the apparent lack of human involvement in the tailoring process, some felt frustrated by insensitive, impersonal feedback:

> It took when we said what our goals are and then input that information into the comments. But … when it told me I'd put on weight [I felt] disappointed. [The feedback said] it looks like you've put on weight during this [period] and I [thought] yes, no kidding! [laughs] (P12, nurse).

In hindsight, we realised we had made an additional assumption: participants would recognise that the content was tailored to them. This assumption was not supported.

5 | DISCUSSION

We assumed that health care professionals would feel responsible for facilitating health behaviour in patients. Yet, although some participants shared this view, others did not see providing behaviour guidance to patients as their professional responsibility. While this may partly reflect a lack of awareness of policies that urge health care professionals to 'make every contact [with patients] count',[15] even those aware of such policies may fail to seize behaviour discussion opportunities because they do not feel it is appropriate to give such guidance.[16] Indeed, while most of our participants perceived themselves as potential role models (see too Joynt et al.[17]), they felt other specialists were better qualified, or had more time, to advise patients. Our results suggest that, even if interventions successfully change health care professionals' own health behaviour, this will not necessarily translate into better support for patients' health behaviour change. This points to a disconnect between the public health policymakers who have sought to improve patient health indirectly, by promoting health among professionals (e.g., NHS England[18]), and the ground-level experiences of health professionals. Public health might benefit from greater involvement of health professionals in policy design.

Our study suggested that work-related barriers limited adherence to our health promotion intervention, and to increasing leisure time physical activity more broadly, among health care professionals. Previous studies have demonstrated that health care professionals are less likely to engage in leisure time activities than the general population.[19] Our findings suggest that among Australian health care professionals, stress, fatigue, long hours, workload, and unpredictable shift work with limited autonomy over work schedules may explain this lack of engagement. The root causes of such pressures may need to be addressed to permit greater uptake of physical activity and other health behaviours. Involving health care professionals as co-design partners might improve the acceptability and effectiveness of behaviour change interventions for health professionals.[20]

Another assumption underlying our intervention, which only came to our awareness during data analysis, was that our participants would use only techniques delivered to them as part of their allocated treatment. Yet, most participants reported adopting additional behaviour change strategies. We also found potential contamination among our sample, because individually randomised participants reportedly discussed and shared intervention content with others. Contamination obfuscates attempts to assess the contribution of allocated treatments to behaviour change.[21] Process evaluations of behavioural interventions should systematically assess whether participants adopted strategies other than those recommended.

Participants felt that our tailoring methods were not as sophisticated as we had assumed. Tailored interventions should provide information relevant to the recipient and their situation, to ensure such

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information is experienced as personally relevant and, consequently, read and applied.[22] Health promotion programs for health care professionals should better account for shift type and other context-specific physical activity barriers. Automated tailoring should ideally be complemented by a moderator-led program, to ensure tailored messages feel personable.

Limitations must be acknowledged. Our participants were predominantly White, highly educated, and female. This partly reflects the demography of Australia, whose citizens are typically of European ancestry,[23] and disparities within the Australian health care workforce, which consists of almost three times as many females as males.[24] Nonetheless, our focus on White, educated females likely overlooked important experiences and narratives from other demographics, including Aboriginal and Torres Strait Islander people, who are less likely to meet physical activity guidelines than non-Indigenous Australians.[25] It is particularly important, given the Australian government's plan to build a more inclusive and representative health workforce,[26] that future studies of PA promotion among health care professionals recruit from a broader range of demographic groups. In addition, we did not gather information on the disciplines or fields in which participants worked, or their years of experience, which may have impacted their time, availability and engagement with the intervention, and the extent to which they valued physical activity.

6 | CONCLUSION

We assumed that providing health care professionals with tailored physical activity guidance would change their behaviour and translate into patient benefit. Yet, many cited multiple work-related barriers that limited their adherence to our activity intervention, and many participants did not view it as their responsibility to change patients' health behaviour. We encourage intervention developers to engage health care professionals as co-designers and thereby incorporate their values and expectations into the design and implementation of tailored behaviour change interventions for this population.

CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

ETHICS STATEMENT

Ethical approval and informed participant consent were given for this study, ethics committees that approved the study and reference numbers are: Hollywood Private Hospital Ethics Committee (HPH443); King Edward Memorial Hospital Ethics Committee Approval (2016034EW); St John of God Hospital (Subiaco and Murdoch) Ethics Committee (1008); and Curtin University Ethics Committee (HR20/2016).

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ENDNOTE

[1] A manuscript describing primary analyses of these data is in preparation.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.