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An analysis of the first implementation and impact of the World Health Organisation's health promoting school model within disadvantaged city schools in Ireland

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While knowledge about the World Health Organisation's (WHO) healthy schools model has been developed in recent years, process implementation and outcomes for school children have not improved in line with these advances. This deficit has become known as the 'implementation gap' and refers to the difference between the evidence of what works in theory and what is delivered in practice. The aim of this research was to evaluate the first implementation and impact of the WHO model among urban disadvantaged school children in Ireland from 2008 to 2012. A concurrent mixed methods study design was used. A process evaluation-mapped implementation and a three-year cohort study measured the impact. Data comprised of semi-structured interviews, focus groups and documentary analysis. Instruments included the Kidscreen-27 and the Child Depression Inventory (CDI). Over 600 children in five intervention and two comparison schools were recruited. The process evaluation revealed that top-down decision making based on the communities rather than each individual school's needs and a lack of understanding of the concept of the whole school approach inhibited implementation. No significant differences were found between intervention and comparison of schools over three years post implementation. The successful implementation within an urban disadvantaged region requires not an analysis of the regional needs but a development of the individual school needs and sufficient lead-in time to ensure that each school is ready in terms of

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What is already known on this subject?

International literature has demonstrated the effects of poverty on child development and well-being. In addition, internationally the World Health Organisation's Healthy Schools Model has been proven to be effective and improve school children's health if implemented with fidelity. What has not been studied in great depth to date is the difficulties of implementation of the WHO model within the most disadvantaged urban communities and the health and well-being of children attending schools in these areas.

What does this study add?

As a result of this study, we now know that a healthy schools programme cannot be implemented to meet the needs of an urban community but must address the individual needs of each school. Analysis revealed that the implementation of the programme with a top-down approach without the input of each individual schools needs created a serious impediment to the successful implementation of the programme and no significant impacts on child health and well-being were found over the period of implementation. Service providers and schools need to be cognisant of the interpretation of the 'whole school approach' and expecting the needs of the wider child community to be addressed within local schools is overly ambitious.

its understanding. Furthermore, healthy schools coordinators roles need to be clarified as facilitators of development and change rather than as unsustainable providers of health activities.

Keywords: health; education; urban; school; disadvantage

Introduction

The World Health Organisation (WHO) defines a health promoting school as: One in which all members of the school community work together to provide pupils with integrated and positive experiences and structures which promote and protect their health (Lahiff, 2008). The Healthy Schools Programme (HSP) in Dublin, Ireland was a manualised initiative based upon the WHO model for a health promoting school. The manual presented a logic model that provided a framework for the programme and outlined anticipated outcomes and indicators of success (Lahiff, 2000). Furthermore, the needs of the school were to be addressed using a whole-school approach through policies; the physical and social environment; the curriculum; staff development and inclusion of families and building partnerships and services which included the community and health services. In line with evidence-based practice, the programme delivery was assisted by two externally funded, local school based, healthy schools coordinators whose role was to lead and coordinate actions of school change that were based on school-specific needs and priorities (Atkinson, Wilkin, Stott, & Kinder, 2002; St. Leger, Young, Blanchard, & Perry, 2010).

However, while much knowledge about the WHO healthy schools model has been developed in recent years, process implementation and outcomes for school children have not improved in line with these advances. This deficit has become known as the 'implementation gap' and refers to the difference between the evidence of what works in theory and what is delivered in practice (Burke, Morris, & McGarrigle, 2012; Fixsen, Naoom, Blase, Friedman, & Wallace, 2005). The primary aim of this study was to evaluate for the first time, the process of implementation and the impact on health-related quality of life of a WHO HSP among schools in a defined urban, disadvantaged community. The setting was within Dublin, Ireland.

Methods

A concurrent mixed methods study design was used, a qualitative process evaluation of the programme implementation and a quantitative longitudinal impact evaluation measuring specific health and well-being outcomes of children at baseline, year one and year two follow-up.

The research was carried out in seven schools officially designated as the most disadvantaged by the Irish Government's Department of Education and Skills. The sample achieved from the five intervention schools ($n = 467$) and the two comparison schools ($n = 137$) represented over 50% of the original sample frame within the intervention schools. At the baseline in 2009, the children's ages within the study ranged from 4 to 12 years. Follow-up rates at year 2 were exceptionally high with 99.8% followed up within the older cohort of children and 85.6% followed-up amongst the younger cohort where parents provided responses.

Participants for the process evaluation included school principals, teachers, parents, funders, service providers and a HSP steering committee. Data for the qualitative process evaluation was obtained through a variety of sources including semi-structured interviews, documentary analysis and focus groups. Numbers obtained within each are provided below.

The quantitative impact assessment instruments existed in both a parent proxy and self-report form and were administered accordingly in consideration of the instruments validity and child's age. These were the Kidscreen-27 (KIDSCREEN, 2004) and the Child Depression Inventory (CDI), (Kovacs, 2009). Full details on the instruments are provided elsewhere (Comiskey et al., 2012).

For the purpose of data analysis in the process evaluation, the research was drew from the realistic evaluation approach to programme change. Realistic evaluation is concerned with the most promising configurations that demonstrate *what works* within a programme, how it works and in what circumstances (Pawson & Tilley, 1997). Realistic evaluation provided a useful approach to evaluate the process component as it demonstrated why an action or mechanism was understood to work, and equally important, why a mechanism was understood not to work when analysed in the context of the initiatives aims, objectives and core principles.

This approach to analysis did not examine the data for themes across the five participating intervention schools. Instead, data analysis was undertaken to identify consistencies in the data that evidenced how certain types of activities undertaken as part of the initiative facilitated or constrained the wider school change process. This then informed the theory of, why in 'x' circumstances, triggering 'y' activity or action (mechanism) to occur, 'z' outcome is more likely to (or may potentially) occur. Specific examples from across the data set were then chosen and presented here to demonstrate the theory in practice.

Semi-structured interview schedules were designed to explore the development of the programme as it was implemented. Schedules were tailored to the role of the participant. Documentary analysis was carried out on a range of documents that had been generated over the life of the programme to date. Structured observation was carried out at all Healthy Schools Steering Committee meetings. Detailed notes on the meeting content and process were taken and included in the analysis. Focus groups were completed with a number of parents and teachers across the intervention schools. These focus groups explored the involvement of families and school staff in the planning and implementation of the initiative. Finally, Online Service Provider Questionnaires were completed retrospectively with a range of professionals who were involved with the programme at varying levels over the period of implementation. The purpose of these questionnaires was to ascertain how service providers linked with the programme. Details on the numbers within each are provided in the results section. Interviews and focus groups were conducted and analysed according to best practice (Braun and Clarke, 2006; Cronin, Coughlan, & Smith, 2015). Full details on the approach to the qualitative data analysis are provided elsewhere (Comiskey et al., 2012a).

A profile of the children's health outcomes was provided through frequencies and descriptive statistics of responses. A *between* group analysis compared responses for intervention (I) and comparison (C) school children and tested for between group differences each year using the following tests: Independent *t* tests and ANCOVA were conducted on the mean Kidscreen and CDI T scores of children in intervention and comparison schools at baseline, year 1 and 2 follow-ups to determine if there were any significant differences *between* the means taking the baseline measurement as a covariate.

Normative data was available and was compared to Kidscreen and CDI T scores. In addition to these methods, paired *t* tests were conducted on the mean Kidscreen and CDI T scores of children *within* intervention schools and *within* comparison schools to determine if there were any significant changes over time.

Ethical approval for the study was obtained from the Faculty of Health Sciences, Trinity College Dublin, Ireland.

Results

The process evaluation examined how the healthy schools initiative was implemented in practice with a view to identify which of the roles and activities that it adopted were more likely to facilitate or constrain a whole-school approach to the development of health promoting schools. Details on the data analysed are provided in Table 1.

The evaluation revealed that the activities undertaken as part of the healthy schools initiative were both facilitative and inhibitive of the development of health promoting school environments. Activities that were facilitative of school community led processes of change were: devoting time to clarification of initiative aims and objectives with school principals; facilitating various health and well-being needs identification exercises with members of the school community and facilitating school community informed planning processes. This can be seen in the quote below from a Healthy Schools coordinator.

I think if the Healthy School coordinator would liaise with the principals of the schools and sit down and identify what the health needs of the school are, then, and then work with the parents and the teachers work in collaboration... in time it [Healthy Schools] kind of worked out very well because I sat down with the principals and we decided ok, what are the needs.

Activities that constrained school community led processes of change were associated with the top-down decision-making processes that informed health and well-being activities for implementation in the schools. This was clear from the comments from a Principal within one of the focus groups:

A mutually agreed objective. Not one that's imposed on the school from somebody else's agenda, but an agenda and a set of objectives that are mutually agreed by the stakeholders in the school. ... Healthy Schools has to be in conjunction with the school not something that's imposed on the school. Teachers and everybody have to be a part of it, and [it should be] developed in the school.

Table 1. Process evaluation data sources.

	2008/2009 (n)	2009/2010 (n)	2010/2011 (n)
Semi-structured interviews and focus groups			
Healthy schools coordinators interviews	2	2	3
Principal interviews	4	5	7
CDI interviews	2	2	3
Services interviews	1	3	0
Parent focus groups	n/a	n/a	2
Service provider questionnaires	0	0	13
Documentary analysis			
Steering committee minutes of meeting			
HS manual			
HSC work plans			
HSC progress reports			
Structured observation			
Steering committee meeting	1	4	4

Activities that were facilitative of the development of health promoting school environments were: researching and distributing/delivering information relevant to the schools health and well-being needs and gaps; identification of, and organisation for, service providers/trainers to provide information/training to school staff on health and well-being issues relevant to school community needs; facilitation of processes that contribute to the review and development of in-school policies. Activities that constrained the development of health promoting school environments were where current school capacity was substituted with activities delivered by the Healthy Schools Coordinators. This had the effect of reducing current school capacity in the short-term rather than assisting schools to operate more efficiently in the longer term. An example of this can be seen in the quote from a healthy schools coordinator below:

I had meetings with the principals [about the initiative] and we kind of cleared the way, or the level of commitment [to the initiative]. I think it cleared a lot of misunderstandings and you know, [previously] different people had different understandings of how the HSC should engage with staff or with parents or with activities. I'd say it was a lot better this year [year two].

Activities that facilitated interagency working between schools and services were associated with: sourcing and organising of meetings between school principals and service representatives in order to exchange information relating to service access issues and service barriers experienced by schools; researching local health and social care service availability and organising information exchange events that met the service information needs of the school community. Activities that constrained interagency working were those where the coordinator acted in the role of liaison person on behalf of families or schools and with services. This resulted in the creation of an additional layer or point of communication and did not assist schools to address challenges in this area through more efficient systems within current capacity.

With regard to measurable impact outcomes, a total of 604 signed consent forms were returned by children of intervention ($n = 467$) and comparison ($n = 137$) schools at the beginning of the evaluation, representing 50% and 55% respectively of the estimated sample frames. This sample at baseline included 146 parents who completed surveys on behalf of their children due to the age of the child and the age validity profile of the survey instruments used within the study. Of the 604 children consenting 298 (49%) were male and 306 (51%) were female. Detailed results of each of the five Kidscreen-27 dimensions reported by parents and children in the form of mean T scores are provided in Tables 2 and 3.

Children in intervention and comparison schools were all average or above the average European HRQoL normal values at baseline, year 1 and 2 follow-ups.

For *parent proxy reports*, in all cases over the three time points, there were no significant differences in scores observed *between* the intervention and comparison of school children. *Within* the intervention schools, significant improvements were observed in the domains of autonomy and parent relations and social support and peer relations from baseline to year 1 follow-up.

For children who *self-reported*, it was observed that when comparing *between* school types at baseline, children in the interventions schools scored significantly higher on physical well-being than children in comparison schools and that this difference between school types remained at year 1 and year 2 follow-up. However, no significant improvements in physical well-being were observed *within* the intervention schools.

Table 2. Mean T scores and sample sizes for five Kidscreen dimensions for *parent proxy* reports and statistics from between and within groups analysis.

Parent proxy report 5 dimensions of Kidscreen-27	Difference between (I) (C) at year 1 independent t-test value p-value (ANCOVA F, p-value)				Difference between (I) (C) at year 2 Independent t-test value p-value (ANCOVA F, p-value)				Difference from baseline to year 1 paired t-test value p-value				Difference from baseline to year 2 paired t-test value p-value			
	Baseline T scores n		Year 1 T scores n		Year 2 T scores n		Difference between (I) (C) at baseline independent t-test value p-value	t, p (F, p)	t, p (F, p)	I	C	I	C	I	C	
	I	C	I	C	I	C										I
Intervention comparison																
Physical well- being	58.65 ² 108	61.06 ² 27	59.80 ² 106	60.72 ² 27	57.81 ² 103	56.68 ¹ 25	-1.127, 0.262	-0.457, 0.649 (F _(1,130) =0.015, 0.904)	0.436, 0.663 (F _(1,125) =0.849, 0.359)	-1.093, 0.277	0.194, 0.848	0.821, 0.413	1.747, 0.093	1.789, 0.077	1.711, 0.1	
Psychological well-being	53.46 ¹ 108	54.63 ¹ 27	54.06 ¹ 106	55.89 ¹ 27	53.66 ¹ 103	55.39 ¹ 25	-0.673, 0.502	-0.98, 0.329 (F _(1,130) =0.591, 0.443)	-0.88, 0.38 (F _(1,125) =0.696, 0.406)	-0.647, 0.519	-0.723, 0.476	-0.045 0.964,	-0.677 0.505,	0.602, 0.548	0.076, 0.94	
Autonomy and parent relations	52.90 ¹ 101	54.82 ¹ 25	55.70 ² 101	57.68 ² 25	54.21 ¹ 100	56.58 ² 25	-1.055, 0.294	-0.999, 0.32 (F _(1,123) =0.188, 0.666)	-1.152, 0.251 (F _(1,122) =0.402, 0.527)	<0.001* -3.666,	-2.264, 0.033*	-1.724 0.088,	-1.394 0.176,	1.669, 0.098	0.618, 0.542	
Social support and peer relations	48.58 ¹ 108	50.39 ¹ 27	51.82 ¹ 106	53.42 ¹ 27	49.55 ¹ 103	48.83 ¹ 25	-0.785, 0.434	-0.758, 0.45 (F _(1,130) =0.201, 0.655)	0.37, 0.712 (F _(1,125) =0.573, 0.451)	-2.941, 0.004*	-2.052, 0.05*	-1.025 0.308,	0.836, 0.411	2.018, 0.046*	3.063, 0.005*	
School environment	59.68 ² 108	58.70 ² 27	59.96 ² 106	58.22 ² 27	59.94 ² 103	57.66 ¹ 25	0.462, 0.645	0.795, 0.428 (F _(1,130) =0.413, 0.521)	1.06, 0.291 (F _(1,125) =0.721, 0.397)	-0.269, 0.788	0.258, 0.799	-0.369, 0.713	0.352, 0.728	-0.043, 0.966	0.03, 0.976	

Notes: ¹This result was within the European normal range.

²This result was higher than the European normal data.

*This result shows a significant difference either between intervention and comparison children at $p \leq 0.05$ or a significant improvement in children over time at $p < 0.05$

Table 3. Mean T scores and sample sizes for five Kidscreen dimensions for *child self-reports* and statistics from between and within groups analysis.

Child self-report 5 dimensions of Kidscreen-27	Baseline T scores n				Year 1 T scores n				Year 2 T scores n				Difference between (I) (C) at baseline independent t-test p-value		Difference between (I) (C) at year 1 independent t-test value p-value (ANCOVA F, p-value)		Difference between (I) (C) at year 2 independent t-test value p-value (ANCOVA F, p-value)		Difference from baseline to year 1 paired t-test value p-value		Difference from baseline to year 2 paired t-test value p-value		Difference from year 1 to year 2 paired t-test value p-value					
	I		C		I		C		I		C		I		C		I		C		I		C		I		C	
	I	C	I	C	I	C	I	C	I	C	I	C	I	C	I	C	I	C	I	C	I	C	I	C	I	C	I	C
Physical well-being	55.03 ¹ 345	51.23 ¹ 104	54.72 ¹ 329	50.49 ¹ 99	55.71 ¹ 246	49.88 ¹ 80	3.174, 0.002*	3.466, <0.001* (F _(1,425) = 5.410, 0.020*)	3.937, <0.001* (F _(1,323) = 8.34, 0.004*)	-0.134, 0.893	0.505, 0.615	-0.412, 0.681	0.546, 0.586	-0.377, 0.706	0.581, 0.563													
Psychological well-being	52.57 ¹ 345	52.97 ¹ 104	53.36 ¹ 329	52.64 ¹ 99	54.28 ¹ 235	53.12 ¹ 80	-0.355, 0.723	0.566, 0.572 (F _(1,425) = 0.676, 0.411)	0.88, 0.38 (F _(1,312) = 0.663, 0.416)	-1.325, 0.186	0.316, 0.752	-1.331, 0.185	0.03, 0.977	-0.963, 0.337	0.044, 0.965													
Autonomy and parent relation	51.16 ¹ 345	47.19 ¹ 103	53.37 ¹ 329	49.60 ¹ 99	55.29 ¹ 235	52.46 ¹ 80	2.913, 0.004*	2.606, 0.009* (F _(1,425) = 1.786, 0.182)	1.704, 0.089 (F _(1,312) = 0.410, 0.522)	-3.527, <0.001* (F _(1,312) = 0.410, 0.522)	-2.35, 0.021*	-4.859, <0.001*	-5.133, <0.001*	-3.065, 0.002*	-2.413, 0.018*													
Social support and peer relation	53.36 ¹ 345	51.72 ¹ 104	54.74 ¹ 329	52.95 ¹ 99	55.41 ¹ 235	54.31 ¹ 80	1.194, 0.233	1.231, 0.219 (F _(1,425) = 0.943, 0.332)	0.707, 0.48 (F _(1,312) = 0.304, 0.582)	-1.726, 0.085	-0.594, 0.554	-2.336, 0.02*	-1.227, 0.223	-1.661, 0.098	-0.689, 0.493													
School environment	54.38 ¹ 345	53.29 ¹ 104	56.10 ¹ 329	54.42 ¹ 99	56.43 ¹ 235	56.23 ¹ 80	0.809, 0.419	1.255, 0.21 (F _(1,425) = 1.231, 0.268)	0.132, 0.895 (F _(1,312) = 0.051, 0.821)	-2.546, 0.011*	-0.825, 0.411	-0.316, 0.752	-1.291, 0.201	0.591, 0.555	-0.703, 0.484													

Notes: ¹This result was within the European normal range.

*This result shows a significant difference either between intervention and comparison children at $p \leq 0.05$ or a significant improvement in children over time at $p < 0.05$.

At baseline, significant differences were also observed *between self-reporting* children in intervention and comparison schools in autonomy and parent relations with higher scores observed again in the intervention schools. This difference was sustained at year 1 follow-up but not at year 2 follow-up. By the end of the second year, however, all children in both school types were reporting the same level of positivity on this scale.

In addition all self-reporting children *within* intervention and *within* comparison schools demonstrated significant improvements in their autonomy and parent relation scores from baseline to year 1 follow-up, year 1 to year 2 follow-up and baseline to year 2 follow-up, demonstrating that improvements *within* school types were sustained. Analysis of the CDI is given in [Tables 4](#) and [5](#).

Discussion

The children from these designated disadvantaged schools were in general in line with the European Kidscreen study (Ravens-Sieberer, Wille, Erhart, Nickel, & Richter, 2008). However disparities existed. Children aged 4 to 12 in this research on average scored the highest on the school environment dimension, while children aged 8 to 12 in the Irish Kidscreen study on average scored the highest on the parent relations and social support and peer relations dimensions (Keenaghan & Kilroe, 2008). Low levels of socio-economic status (SES) have been found to be significantly associated with poorer health-related quality of life on all Kidscreen dimensions in adolescence and more specific domains in childhood (Ravens-Sieberer et al., 2008; Von Rueden, Gosch, Rajmil, Bisegger, & Ravens-Sieberer, 2006). This difference in SES may explain the above disparities.

Analysis of the CDI revealed that at baseline children in both the intervention and comparison schools were on average within the international normal range (Kovacs, 2009). The majority of parent proxy and self-reporting children were within or below the average international references, indicating low levels of depressive symptoms. According to international studies, the rates of depressive symptoms in school-aged children at any given time lies between 5% and 20% and the proportions of all children with above average levels of depression in this study lay midway between that (Charman & Pervova, 2001; Edelsohn, Ialongo, Werthamer-Larsson, Crockett, & Kellam, 1992).

The process findings indicated that the initiative worked better in practice when the programme activities were informed by the health and well-being needs that were relevant to individual schools. This was evident throughout the findings, and highlighted the need for individual school communities (i.e. children, families and staff) to be at the centre of the school change process. Indeed, a school led or bottom-up process has been identified as an essential component of successful school-based health promotion initiatives (Fullan, 2008; Kam, Greenbergh, & Walls, 2003; Stewart-Brown, 2006; Weare, 2000; Weare & Markham, 2005; West, 2006). Becoming a more health promoting school was a process that required ownership by each individual school community as this facilitated schools to have control of their own health and well-being. Having control over one's own health and well-being is central to the definition of health promotion and at the core of the agenda of health promoting schools (WHO, 1997).

Teachers also spoke of the benefits that they gained and were happy to engage in a consultation process about policy review and development when they themselves were the instigators rather than when this was completed by the Healthy School

Table 4. Mean T scores and sample sizes for CDI-P for parent proxy reports and statistics from between and within groups analysis¹.

Parent proxy report	Baseline T scores n		Year 1 T scores n		Year 2 T scores n		Difference between (I) (C) at baseline independent t-test value p-value		Difference between (I) (C) at year 1 independent t-test value p-value		Difference between (I) (C) at year 2 independent t-test value p-value		Difference from baseline to year 1 paired t-test value p-value		Difference from year 2 paired t-test value p-value	
	I	C	I	C	I	C	I	C	I	C	I	C	I	C	I	C
Intervention (I)																
Comparison (C)	I	C	I	C	I	C	I	C	I	C	I	C	I	C	I	C
CDI-P total T score	n/a	n/a	45.96 ¹ 100	45.84 ¹ 25	45.46 ¹ 100	44.72 ¹ 25	n/a		0.074, 0.941		0.361, 0.719		n/a	n/a	0.948, 1.061, 0.345	0.299

Notes: ¹This result was within the international normal range.
No CDI-P data collected at baseline stage as children were under 7 years.

Table 5. Mean T scores for CDI-S for *child self-reports* and statistics from between and within groups analysis.

Child self-report	Baseline T scores n		Year 1 T scores n		Year 2 T scores n		Difference between (I) (C) at baseline independent t-test value p-value		Difference between (I) (C) at year 1 independent t-test value p-value		Difference between (I) (C) at year 2 independent t-test value p-value		Difference from baseline to year 1 paired t-test value p-value		Difference from baseline to year 2 paired t-test value p-value		Difference from year 1 to year 2 paired t-test value p-value	
	I	C	I	C	I	C	I	C	I	C	I	C	I	C	I	C	I	C
Intervention (I)	47.44 ¹	47.96 ¹	46.83 ¹	47.17 ¹	46.54 ¹	45.15 ¹	-0.516,		-0.318, 0.751	1.493, 0.137	1.616	1.001	2.542	2.585	1.334	2.241		
Comparison (C)	343	103	329	99	235	80	0.606		(ANCOVA F _(1,425) = 0.019, p = 0.890	(ANCOVA F _(1,312) = 1.239, p = 0.267	0.107	0.319	0.012*	0.012*	0.184	0.028*		

Notes: ¹This result was within the international normal range. *This result shows a significant improvement in children over time at $p \leq 0.05$.

Coordinator. Staff development is recognised as key to the school change process (Hazell, 2006; Hoyle, Samek, & Valois, 2008; Newmann, King, & Youngs, 2000; Rowling, 2009). Indeed, it has been demonstrated that staff within a school are the key drivers of school policies and, therefore, that increasing staff capacity can potentially influence the entire school community to develop more health promoting policies (Rowling, 2009).

The main limitation of this study was the fundamental difference between the generic WHO health promoting schools model where needs are identified by the whole school community and the local adaptation of the model which was developed to meet the urgent needs identified by the 'How are our Kids?', report from children in the locality (Childhood Development Initiative & Dartington Social Research Unit, 2004). From the WHO perspective, the fidelity of the programme was compromised. Implementing a WHO health promoting school model is challenging and takes time. However, the model has been implemented across the globe from China to Canada (Lee, Cheng, Fung, & St Ledger, 2006; Lee, Tsang, Lee, & To, 2003; Physical and Health Education Canada (PHEC), 2011). In the healthy school programme manual, it was highlighted that realistic expectations are required in terms of the level of change which should be expected (Lahiff, 2008). This is especially important when evaluating implementation in the early stages.

Conclusion

There were no significant differences found over the three time points *between* the intervention and comparison schools, indicating that there were no short-term impacts on the children's health and well-being outcomes. In terms of implementation findings demonstrated that when planning was informed by the programme promoters (top-down) rather than the schools themselves (bottom-up), this led to complications in programme implementation. In addition, at the earlier stages of implementation it was found that when intervention activities targeted the school children and parents, rather than supporting the development of sustainable whole-school change processes, this led to the emergence of a programme geared more toward once-off activities being delivered rather than supporting schools to become more health promoting environments in a whole-school way.

The programme implementation was found to be more facilitative of developing sustainable school change process when it involved supporting consultation processes, resourced responses to school needs, organised training and up-skilling for school staff based on the needs that schools identified. This contrasted to a role that was sometimes found to be delivering direct services to children and families and supporting the service provision processes of health services providers and schools. While these may have been beneficial in the immediate term they were unlikely to foster the development of sustainable and transferrable processes.

Disclosure statement

No potential conflict of interest was reported by the authors.

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Note

1. For any question within the CDI that is not answered, responses are marked as missing. In accordance with best practice guidelines as provided by the author of the CDI-S instrument, any questionnaires with more than 10% of responses missing (i.e. one missing response) were excluded from analysis to maintain validity for the data (Kovacs, 2009). The CDI-P was not administered to parents at Baseline as the instrument is not validated for this age group (Not applicable n/a appears in the table above). At Year 1 follow-up, the CDI-P was administered and methods of validation are being carried out.

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