

PERSPECTIVES

Evaluating for impact: what type of data can assist a health promoting school approach?

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Summary

There is debate within the health promoting school (HPS) movement on whether schools should monitor health behaviour outcomes as part of an evaluation or rely more on process type measures, such as changes to school policies and the physical and social environment which yield information about (in) effective implementation. The debate is often framed around ideological considerations of the role of schools and there is little empirical work on how these indicators of effective implementation can influence change at a policy and practice level in real world settings. Information has potentially powerful effects in motivating a change process, but this will vary according to the type of information and the type of organizational culture into which it is presented. The current predominant model relies on process data, policy and environmental audit monitoring and benchmarking approaches, and there is little evidence of whether this engages school communities. Theoretical assertions on the importance of monitoring data to motivate change need to be empirically tested and, in doing so, we can learn which types of data influence adoption of HPS in which types of school and policy contexts.

Key words: health promoting schools, policy, evaluation methodology

INTRODUCTION

The Health Promoting School (HPS) model is the most common framework for school-based health intervention and utilizes a socio-ecological approach that considers traditional classroom education as a part of and closely related to the broader social and physical environment of the school (St Leger and Young, 2009). There are variations on the HPS model but they commonly include the following areas of intervention: school policies, the social and physical environment of the school, curriculum,

and family and community partnerships (Young *et al.*, 2012). A variety of reviews on school interventions have provided evidence which demonstrates that whole-of-school, multifaceted interventions can influence health behaviours as well as enhance emotional and social well-being (Stewart-Brown, 2006; Peters *et al.*, 2009; De Bourdeaudhuij *et al.*, 2011). However, research has also noted that schools have found it difficult to implement the HPS model in its entirety (Stewart-Brown, 2006; Adamowitsch *et al.*, 2014), while others have

argued that it is not possible within a crowded curriculum to implement multiple programmes each covering separate health issues (Bond and Butler, 2009).

The policy response to this challenge of time and resource constraints has been to develop a self-managed continuous quality improvement approach. This is evident in the design of the School Health Index (SHI) from the USA (Centers for Disease Control and Prevention, 2014), the National Healthy Schools Programme (NHSP) from the UK (Arthur *et al.*, 2011) and the recently developed Achievement Programme in Victoria, Australia (Department of Health, 2015). All these programmes share a common process of developing action teams, auditing current programmes and policies, identifying areas for action, and monitoring progress. In this way, schools choose a select number of programmes and strategies that best suit their needs. This resembles a continuous quality improvement (CQI) approach that is recommended for complex intervention settings such as schools, where implementation can vary according to context and there is a need for practitioners and policy makers to constantly reflect on and refine their work (Green, 2008). While the process seems sound, this paper argues that the ability of these CQI models to engage school communities has not been adequately tested, particularly with regard to the policy and programme audit aspects. This represents a significant research gap considering the potential of the CQI design.

It has been noted that CQI methods have the advantage of being able to harness the Hawthorne effect as an intervention technique to motivate improvements in performance and attainment of goals (Rowe, 2009). The Hawthorne effect is a classic threat to validity where change occurs not through the intervention but due to the motivation of knowing that you are being observed (Rowe, 2009). However, from an implementation perspective this is not a threat to validity but rather a potential leverage point to positively influence performance and attainment of goals. It is widely commented that meaningful and accurate information can be a very strong motivator to take action and begin a change process (Meadows, 1999; Mrazek *et al.*, 2007; National Cancer Institute, 2007; de Savigny and Adam, 2009).

Meadows (Meadows, 1999) identifies feedback loops as a powerful tool for change and CQI methods have the capacity to help identify, and therefore act on, such feedback loops. Meadows (Meadows, 1999) considers that information itself can have a more powerful effect on organizational and behavioural change than the actual programmes. Viewed in this way, the data collected in a

CQI design can be transformative (Mertens, 2013), in that it has the potential to change the community or organizational context and influence health outcomes. However, it is not a *fait accompli* that providing information will motivate change and the interaction between different information types and the particular culture and dynamics of the organization will influence in what way (if at all) change takes place (Rogers and Williams, 2006).

This paper will contend that monitoring health behaviour outcomes could be useful in motivating engagement in HPS for some schools. Ongoing monitoring of health and well-being data can provide motivation for a community or setting to act in addressing an issue that the data reveals as concerning (Mrazek *et al.*, 2007). However, there are a number of valid concerns about the use of health outcome measurement in schools. The argument against measuring health behaviour outcomes is that there could be cohort effects, where some student intake groups may be healthier than others, the degree of influence schools have on health behaviour outcomes is limited, and that measuring outcomes may promote complacency if schools can see they have achieved certain outcomes (Hodgins and Griffiths, 2012). Furthermore, the current models may be very useful as a frame of reference in guiding implementation when the other factors known to influence change (external change agents and effective internal leadership) are in place. They may also be a more cost effective means of monitoring progress relative to collecting behavioural or attitudinal data. Thus there is a need for research that examines under what school contexts and circumstances process and/or outcome indicators are best able to motivate and assist a change process, and what these indicators might be.

As will be described throughout the paper, how data influences implementation is a research question not yet explored in school health promotion. Given that schools are highly complex environments nested within highly complex policy and social contexts, similar to programmes, different types of data will have different effects in different schools. This then requires a reframing of the debate away from either choosing a process or outcomes evaluation approach to one that examines under what circumstances different types of data are able to assist the HPS approach. This paper will outline the current dominant model being used for HSP evaluation across schools in the USA, Asia and Europe, the limitations of the evidence underpinning these approaches, and then make some recommendations about the type of research required to provide a stronger evidence base for policy and practice.

CURRENT RECOMMENDATIONS FOR HPS EVALUATION AND ITS OPERATIONALISATION IN POLICY AND PRACTICE

There have been recent recommendations that the use of process data rather than health behaviour outcome data is an appropriate means of evaluating health promotion interventions in schools. Young *et al.* (Young *et al.*, 2012) produced a document for the International Union for Health Promotion and Education (IUHPE) outlining methods for monitoring and assessing HPS initiatives (hereafter referred to as 'The IUHPE Report'). The authors recommend that schools can use accreditation type programmes which commonly measure changes to school policy and parent and community connections as a means of tracking progress. A limitation of this recommendation is that there is no evidence provided of whether accreditation type programmes alone are effective in motivating schools to begin a process of change in the school environment. The research cited in the IUHPE report was derived from research and programmes that simultaneously used multiple evaluation methods and thus it is not possible to ascertain how schools used each of the data sources generated from the variety of methods.

The research and programmes cited in the IUHPE report each had a number of different evaluation methods which might have been instrumental in motivating change (Young *et al.*, 2012). For example, they referenced the work of a research project undertaken in Hong Kong where it was concluded that the audit programme was effective in providing schools direction for health promotion implementation (Young *et al.*, 2012). The Hong Kong audit programme was being used as one of a number of measures and equally the other data sources such as data on health outcomes for students could have been a motivator for schools (Lee *et al.*, 2005a,b). Furthermore, the schools participating in the Hong Kong research project were visited by a team of health promotion coordinators and school documents were reviewed, observations of the school environment were made and interviews with school personnel took place. This research did not provide any evidence of whether accreditation type programmes by themselves are effective in motivating change in a school environment. Thus while we can make general recommendations about the importance of information in motivating a change process (Meadows, 1999), it is not clear that accreditation programmes themselves influence any change. This becomes an important issue because in real world applications it is often only process measures that are used to monitor and evaluate practice (Dooris, 2006).

The evaluation of the NHSP provides a case study of the use of monitoring process data in schools (Barnard *et al.*, 2009). The NHSP is a whole of school accreditation-based programme that has been running in the UK schools in various forms since 1999. To achieve National Healthy Schools Status (NHSS) schools need to meet standards across four themes: personal, social and health education (inclusive of sex education, relationships education and drug education); healthy eating; physical activity; and emotional health and well-being (including bullying). This programme represents a typical process monitoring approach where schools are encouraged to self-assess their progress according to the set criteria, typically around policy standards and activity provision, and then implement changes to improve their performance against those standards.

Overall there was considerable variance in use of the NSHP, with some schools seeing the programme as a way to drive new initiatives and programmes, although this was often within a context of an existing approach to a particular issue rather than a more substantial change to school policy and practice on drug use for example (Arthur *et al.*, 2011). Other schools, particularly when they had already met the majority of the criteria, used the self-assessment as a reflective process for current activities or more simply as a 'tick box exercise to validate existing practice (p. 6)'. It was concluded that where change did take place within the school environment the NSHP assisted schools in supporting the change that was already planned. One of the potential limitations with accreditation programmes is that they may not inspire a change process, rather settings will document existing practice which was the experience of the NHSP (Arthur *et al.*, 2011). What would be particularly interesting and important to explore is the contextual situation of the small percentage of schools that did embrace the NSHP as a mechanism to change policy and practice and how this differed from the majority of schools that did not change. And further whether among the schools that did not change practice, the NSHP provided a validation of existing programmes that helped consolidate sustainability.

The SHI is a widely adopted planning guide for the US schools on how to implement a whole school health promotion approach (Centers for Disease Control and Prevention, 2014). The 2014 version has six health topics that can be addressed: physical activity and physical education, nutrition, tobacco, asthma, safety and sexual health. There are training modules provided on eight topics related to domains of a whole school approach such as curriculum, policies, health promotion for staff and community partnerships. After each module there is a self-assessment checklist that school teams can use to identify

strengths and areas requiring improvement. The planning guide outlines the steps in this planning process with the aim of ensuring a collective agreement on the strategies to implement.

An assessment of SHI implementation undertaken in 2006 from a sample of 1103 schools (response rate of 77.9%) found that on average schools were meeting just under half of the items in the safety and nutrition modules with lower figures for the health education and physical education modules (Brener *et al.*, 2011). The overall reflection was that schools were implementing a subset of the recommendations for any given issue rather than in its entirety. It is not clear also from this research to what extent the SHI was guiding implementation or merely the research was documenting existing practice that aligned with SHI criteria. More in-depth case study and intervention analysis of SHI implementation has revealed that the SHI in itself is insufficient to motivate programme and policy change, and that factors such as external facilitation, effective internal leadership in pursuing a change agenda, and financial incentives are the forces required for implementation to occur (Sherwood-Puzzello *et al.*, 2007; Belansky *et al.*, 2013).

Belansky *et al.* (Belansky *et al.*, 2013) compared schools doing the SHI by themselves against schools that participated in what they termed 'Intervention Mapping' which among other things involved an external facilitator leading the school through a planning process that consisted of 12 meetings ~2 h in duration across 2 years of implementation. Those schools receiving this level of support made significantly more progress on effective policy and environmental change. What was not a factor manipulated in this study was the type of data provided to schools. The authors acknowledged that not having behavioural data was a limitation of the evaluation. It could also be construed that this was a limitation of implementation and that manipulating the type of information provided to schools would have been another interesting factor to compare. Thus, while there is evidence that the SHI can help direct planning and implementation when these other factors are in place, there is little available evidence that the information gathered through the SHI audit itself helps to galvanise action.

If as outlined in the introduction, information can be a powerful motivator for action, then the information gathered through the SHI is not fulfilling this potential. There is a compelling need to determine other factors that can motivate engagement in HPS as relying on the interest of school leadership in health and well-being alone is not sufficient to ensure large scale implementation (Deschesnes *et al.*, 2014). Although Belansky *et al.* (Belansky *et al.*, 2013) recommended changes to the external facilitator

role to be less intensive and more of guidance for schools, it is unclear the extent to which this model would still be as effective and if it could be replicated at large scale (Edwards, 2010). There is a considerable research gap in understanding how data itself can influence engagement with the HPS, which could be of particular importance for schools lacking either administrators with a pre-existing interest in health and well-being and where access to external facilitation resources is lacking.

EVALUATING THE IMPACT OF DIFFERENT TYPES OF DATA

While CQI designs are endorsed for complex practice-based interventions, there is little research into the effectiveness of CQI models and the contextual factors that influence its effectiveness (Brennan *et al.*, 2012). Where there has been evaluation work completed of CQI models, it has mainly taken place in hospital settings and to a lesser extent, primary care (Brennan *et al.*, 2012). Empirical research that has taken place in primary care settings examined the contexts in which the CQI was able to improve practice (Schierhout *et al.*, 2013). These contextual factors in settings where CQI was deemed to improve practice included a shared understanding of the role and importance of the data, supportive management, effective partnerships, and skills and consistency of staff (Schierhout *et al.*, 2013).

Another evaluation examined the use of a CQI design within a mental health service (Colton, 1997). Colton (Colton, 1997) was critical of the narrow application of CQI within health care and human service organizations. He traced the origins of CQI to business and industry where CQI was traditionally used to identify and address sources of variation in production processes leading to uniformity in outcome. He suggested that the standardized and quantifiable method of CQI being adapted from business may not suit all health service contexts. And it may not capture the emergence of something novel that could be of benefit to the organization and its constituents.

Colton (Colton, 1997) surveyed health staff about what information is meaningful to them and how it could be presented to assist their practice. Colton discovered in this case study that the information needs of clinical and administrative staff differed and that collaboration was required to ensure 'meaningful processes are identified for CQI monitoring (p. 282).' It was also recommended that multiple methods are used for a CQI approach within health care and human service organizations. There seems to be very little research of this nature in

school health promotion and health promotion generally. Interestingly, while this was not a goal of their study, Sherwood-Puzzello found that while only one out of the three schools examined implemented their SHI plans, the results were used at a broader policy level (Sherwood-Puzzello *et al.*, 2007). School personnel that had been involved in the SHI together with community health representatives influenced changes to food service delivery that affected all schools and a new Healthy Schools Coordinator position was created whereas previously the role had narrowly focused on safety and drug issues (Sherwood-Puzzello *et al.*, 2007). Thus similar to Colton's observations, it would seem that different types of information are useful for people working at different levels of the system. While the information may not have inspired change at an individual school level, the information was of significant utility together with effective change agents (Senior *et al.*, 2014) in motivating change at a school district policy level.

One of the limitations of the existing evidence base on school-based health promotion is insufficient information about *why* programmes work in some schools and not others (Kremser, 2011; Gleddie, 2012). This same criticism could be used for evaluation approaches in schools. Similar to critiques made of evaluation in the social enterprise field (Barraket and Yousefpour, 2013), there is insufficient evidence on which types of information best motivate schools to take action, enable judicious decisions with limited resources, and assist in reflecting on what is working and what needs to change. It is entirely possible that the current process audit approach does not suit the cultural and organizational dynamics of many schools. Implementation research conducted in schools has concluded that school teachers operate with a lot of autonomy and are focused on their classrooms more than the wider school community (Kremser, 2011; Adamowitsch *et al.*, 2014). It has been postulated that performance monitoring data related to policies and guidelines is suited to top-down managerial hierarchies rather than more autonomous dynamics (Rogers and Williams, 2006), and hence it would seem ill-suited to school environments based on the implementation research to date. It is conceivable that whole school policy audit processes that are commonly used, are not widely appealing to many teachers and different types of information is required to engage this group. Teachers may be more interested in data at a classroom level rather than data at a whole of school level as an example.

Realist evaluation is an approach that could help uncover how school communities and actors within the school community (administration, teachers, non-teaching staff, students and parents) respond to different

types of information. Realist evaluation examines under what contexts and for which groups interventions work (Pawson and Tilley, 1997; Wong *et al.*, 2012). While the principles of realist evaluation are very common with qualitative principles such as the systematic collection and analysis of data, iterative theory development, seeking alternative cases and explanations, and strong reflection processes, a mixed method approach incorporating both qualitative and quantitative methods can be accommodated (Wong *et al.*, 2012). This approach would be well suited to the research question of which mix of indicators should be used to guide a CQI HPS approach.

The impact of different types of information could be contrasted: (i) measures of school environment only, (ii) measures of health behaviours only and (iii) use of both measures. To understand how school use these data there are multiple methods that could be used. Surveys of staff, interviews, focus group discussions and document analysis are all methods that have been employed in implementation research in school contexts that could be applied (Barnard *et al.*, 2009; Arthur *et al.*, 2011; Kremser, 2011, Gleddie, 2012, Adamowitsch *et al.*, 2014). For this research to be effective, any school-based data collection process would also need to include a component of capacity building for schools to understand and make use of these data. Providing skills in planning, implementing and using evaluation data has been contended as one of the critical components of integrating health promotion programmes within school settings (Flaspohler *et al.*, 2012).

It is likely given schools are highly complex environments situated themselves within highly complex policy and social contexts, that just like programmes, different indicators will have different effects in different schools. The research task will be to develop typologies of school contexts that enable some generalization to occur. The implication of this research would not be that each school requires its own set of unique indicators. There is obviously a need for a common set of indicators so that comparisons can be made across schools and identify certain structural issues requiring policy and programme attention. Rather more modestly, this research could help identify which types of schools will respond well to the current approach of policy and programme audits and which types of schools may require health behaviour data to demonstrate the need and engage the school community. Further, this research could help to illuminate what types of feedback and data presentation styles and processes suit different school types (Rogers and Williams, 2006). There may be certain indicators and evaluation processes that have greater utility within certain contexts and situations and potential recommendations stemming

from this research may suggest that a wider variety of data collection processes are provided to schools.

The cultural, political and demographic differences amongst and within the jurisdictions may greatly impact upon the perceived need for and value of measures of health behaviour in a school context. Thus it is not only important to assess how indicators get used at an individual school level, but also the use of this data at a community level and broader state policy level as well. A systems evaluation requires that multiple perspectives are sought and examines the broader context in which change is taking place (Cabrera *et al.*, 2008). As mentioned previously it would seem from the example of the SHI that while the information did not inspire change within the individual schools, it did resonate with policy makers. It may also be the case that different types of information resonate with those in positions of school leadership compared with others; for example, school teachers. The HPS suggests that change is required at all levels to effect outcomes in health (community, school, classroom) and thus any research on the utility of different types of data needs to consider this from the perspective of different stakeholders such as schools, community and government (Bryson *et al.*, 2011).

CONCLUSION

There is strong consensus on the potential of schools to promote the health and well-being of students and staff and make an important contribution to addressing major public health problems (Belansky *et al.*, 2013; Alaimo *et al.*, 2015). The research is also clear that to make a positive difference to health and well-being requires a whole of school approach (Young *et al.*, 2012). However, as detailed in this paper there are few schools that are able to implement HPS in its entirety (Adamowitsch *et al.*, 2014), and apart from strong leadership and intensive external facilitation (Belansky *et al.*, 2013), few factors that can explain successful adoption at a school level. While information has been contended to play an important role in motivating a change process, it is currently unclear whether or not the current approach of policy and programme audits does motivate improved performance. The evaluation work of Rogers and Williams (Rogers and Williams, 2006) would suggest that this approach may be ill-suited to schools where there is a high degree of teacher autonomy (Kremser, 2011; Adamowitsch *et al.*, 2014).

To date, there has been little empirical research comparing how different types of information motivate and guide health promotion initiatives in schools. This paper has concentrated on the debate between impact (e.g.

health behaviour) and process data (e.g. policy audits) and suggested that health behaviour data may have a greater impact in many schools but this assertion needs testing. There is of course a much wider variety of data that could also be considered including qualitative feedback from students, parents and teachers using approaches such as appreciative inquiry which focus on what is going well rather than what is the problem that needs fixing (Rogers and Williams, 2006). At the moment it is unclear what type of data and evaluation method is engaging and further research work is required rather than assuming that the performance audit process is the most appropriate method. There is anecdotal evidence that this process is useful in some schools and at government levels, but very little evidence that the majority of schools are inspired by such a process. Given the importance of schools as a setting to improve health and well-being it is imperative that future research explore in more detail what types of indicators and data are helpful in engaging entire school communities not just a select few individuals in a select few schools.

ACKNOWLEDGEMENTS

The authors thank Prof. Jo Barraket, Emily Foendander, Dr Elizabeth Branigan, Dr Christopher Mason, and Dr Michael Moran for their comments on earlier versions of this article.

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