Evidence-based practice in road casualty reduction

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An alternative way is analyzed in which practitioners working to reduce road injury can assess research evidence. Familiarization with published research makes practitioners more confident about evaluating practice in a formal manner.

Evidence-based practice is a mainstream concept in the healthcare community.¹ It has had an impact by engendering good practice through judgement of scientific evidence and continued professional development among practitioners. Healthcare professionals may influence injury prevention through advocacy, although their effectiveness for injury prevention has not been studied.² Advocacy is defined by the World Health Organization (WHO) as a combination of actions to gain "political commitment, social acceptance and system support for a particular goal or programme".³ Evidence-based policy requires policy-makers to acquire objective evidence of effectiveness, public acceptability and cost-effectiveness. Advocacy may narrow the gap between what is known to be effective, acceptable and efficient, and what is practiced.²

However, it is important to note that a wide range of professionals are tasked with delivering services that are specifically intended to reduce the number of injuries on the road. The World Road Association catalogue the organization of road safety "services" (which can include highway design and remediation, law enforcement, as well as educational/training interventions) around the world.⁴ Autonomous professionals responsible for service delivery are seen in a number of countries working at a local government level. The UK is a typical example where there is national policy (determined by the Department for Transport (DfT)) and local provision is effected by Police Forces and Highways Authorities. Their level of autonomy is attested by governmental publication; for example, the DfT have issued guidance in relation to pedestrian training, which aims to "assist road safety officers and other practitioners to conduct their own evaluations and to be better informed when commissioning an evaluation".⁵ One recent case study has provided one route for turning research into practice, which covered two road safety themes as well as the smoke detector intervention

reported.⁶ The aim of this case study was to demonstrate how to select and prioritize evidence-based interventions and then refine the findings at workshops with practitioners, with a view to providing detailed guidance on effective interventions.

Here, we consider an alternative way in which practitioners working to reduce road injury could be generically equipped to assess research evidence. The points noted here are based on feedback collected during a demonstration course on evidence-based practice. Senior road safety professionals were given formal training in evidence appraisal using an approach that was successfully adopted in a healthcare setting, specifically based on a Peninsula Postgraduate Health Institute module.⁷ Participants were invited to attend this demonstration course following advertisements placed with relevant professional bodies in the UK. Twenty-two course participants were accepted, comprising experienced road safety professionals from throughout the UK (including Scotland) covering a wide range of road casualty reduction roles, traffic engineering, crash investigation, road safety officers (local authority and police), as well as data analysts and managers. Three participants were female and only eight had less than 5 years experience in a road safety role, although it should be noted that several had police experience prior to local government road safety experience. The course ran at the University of Plymouth between 17 and 21 July 2006; the course comprised formal taught sessions on study design, quantitative and qualitative research, and statistical concepts such as inference and odds ratios. These were supported by workshop sessions examining specific study designs and group appraisal of a related paper. Generally, feedback on the course was positive; we hope participants were exposed to evidence-based practice as recognized by healthcare professionals, and could develop their own ideas about the potential benefits of and barriers to evidence-based practice.

PRACTITIONER OBSERVATIONS ON EVIDENCE-BASED PRACTICE

"Research says" was a common prefix to many discussions, and it became apparent that there are unchallengeable dogmas in road safety. For example, one group considered a randomized controlled trial of child visibility aids.⁸ This was readily accepted as "good" evidence that should guide practice, yet the paper appraised only shows that children can be encouraged to wear small and discrete visibility aids for a short time; it neither provides evidence that these aids are visible enough to be effective, nor evidence that casualties were reduced by the intervention. Generally, it became clear that direct use of the evidence base was limited among most participants:

"I have never considered research as a method of looking at a particular road safety issue. Whilst aware that obviously research was being undertaken, and from time to time hearing about it, I have never given it much credence [or] seriously looked at it as any more than general information"

A small number of participants could be described as experienced users and commissioners of research, but generally feedback from most participants indicated limited use of research even though these were experienced professionals, many of whom would have had librarian support available corporately. For example, in the UK, the DfT publish literature reviews and the Transport Research Laboratory provide an abstracting service; this was rarely mentioned and there was no reference to the International Transport Research Documentation (www.itrd.org):

"This all needs to be readily available to all practitioners in the specified field"
"I would like it to be more available. Now I know it is there, I will make more time to go and find it"

A few participants felt it was worth studying primary research once as a learning exercise but, subsequently, just over half would prefer to receive some kind of summary.

"Although use of synthesized evidence may be more beneficial to practitioners"

Dealing with the size and complexity of the evidence base is a well-recognized problem in adopting evidence-based practice.⁹ A smaller number felt it was necessary to maintain interest in primary research, and various suggestions to manage this process were made. Generally, practitioners were keen to "own" their own practice, with one exception:

"I would need specialist assistance and would certainly advocate that a national lead on this would be appropriate"

Clearly, this is related to evidence-based policy.⁹ These participants felt that they possessed a body of experience that would be useful in developing policy, and were keen to see practitioner-focused ways of interpreting the research base; it is known that the context in which evidence appears is important.¹⁰

"Rather than have ideas about "practice" imposed on practitioners, it is useful to understand how the idea was reached"

In addition to awareness-raising, skills in evidence appraisal appeared to have made some participants more confident in using research:

"I usually take it for granted as being "gospel" – this has changed and I now feel more equipped to challenge and use that information"

"I am more likely to now search for research on a particular problem I will be dealing with. I hope I am now better equipped to easily identify quality papers"

In addition to universal comments about the volume of research, strong feedback was made by many participants concerning the "quality" of much evidence:

"Time constraints are such that practitioners must be able to rely on high quality. Therefore research disseminated has to be of best practicable quality. This does not appear to be the case now"

"Quality" is an emotive term. These participants were rooted in particular aspects of practice and were very sensitive to the way in which others may interpret research findings. One example concerned a paper on an intervention to encourage modal shift in school travel; the paper supplied described a far more limited intervention than offered by most participants (many of whom considered a school travel plan to be a co-operative endeavour between school and highways authority in which a number of engineered highways interventions are supplied to make walking and cycling more attractive).¹¹ There were similar examples, including papers for which the relevance of the intervention examined was questioned; consequently, there were numerous comments about the fitness for purpose, of much published research, from a practitioner perspective:

"There appears to be a fire break between research and practitioners, which needs to be bridged, to allow effective, relevant dissemination"

"I feel that quality could be improved by taking advice from people working on the subject on a daily basis. Know the real-life situation before you start to look at it"

IMPLICATIONS FOR PREVENTION

No claim is made that the 4-day course demonstrated is in any way optimal in teaching evidence-based practice skills; it is only claimed that, given little previous formal exposure to evidence appraisal, experienced road safety professionals were equipped to assess its potential. It is notable that familiar barriers to evidence-based practice were identified in the feedback (amount of material available and the time required to keep abreast of this information). Although it is difficult to argue a priori that evidence-based practice should not form a core part of the training of any autonomous professional, the road safety professionals described here clearly have an advocacy role in terms of attempting to influence the behavior of others, which can only strengthen the advocacy role that is already highlighted for health-care professionals. These benefits can arise from more careful development and selection of interventions, and in evaluating practice. Recognized barriers to evidence-based practice in this context include opposition from powerful sources, political philosophy, vociferous minorities and commercial influence.² These bear directly on many of the professionals considered here, who therefore need robust access to the evidence base.

The perceived discrepancy between research and practice identified by road safety practitioners (for example, the differences in the definition of "school travel plan") was a little alarming, as was the relative vacuum in which road safety professionals in the UK appear to be operating. There may be benefits if road safety professionals were helping to close the gap between policy and evidence and ensuring that the research accurately examines current practice.

However, the results suggest that participants would be more likely to question existing practice and more likely to use research findings now that they understand the research. Presumably, therefore, there is great injury prevention potential in equipping the road safety practitioners in evidence appraisal skills. Although we considered local professionals in a UK context, it could be argued that there is potential for adopting a similar approach to evidence appraisal skills among many more professionals

who are directly tasked with the reduction of road injury.

Finally, in many countries around the world, the role of the similar, locally autonomous practitioners in working to reduce road collisions is central to the injury prevention effort. Reflecting on the extent to which a professional practice is evidence based is important.¹² Exposure to primary research may have benefits in this regard:

"... it questions what we all accept as good practice, when in fact this might be flawed. But at least it makes us think there is better practice"

It may be that familiarization with published research makes practitioners more confident about evaluating practice in a formal manner, and aware of the limitations in doing that within the confines of a single organization. This may well be the largest gain that can be obtained from a more rigorous approach to evidence-based practice.

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