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Can martial arts falling techniques prevent injuries?

Although falling techniques are taught to martial artists, athletes and paratroopers, a BMJ search of Highwire listed journals has discovered no mention of “falling correctly”, “safe falling”, etc. “Reducing the force of impact of a fall on people’s bones” is discussed. But the literature mentions no impact reduction techniques except for hip protectors. Exercise and muscle power in old age are recognized as helping regain balance after tripping, but not all falls are preventable. So perhaps safe falling should also be explored.

One finds discussion of types of fall, with no discussion of those who were trained in exploring.

There is plenty of anecdotal evidence of martial artists coming out safely from quite dangerous falls. So although martial arts falling techniques may not be a solution for the general population, they may be so for a minority. It remains to be seen whether safe and enjoyable methods might be developed to teach selected falling techniques to the general population.

Acknowledgement

I thank I Katz of Budo Ninjutsu for much helpful advice.

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References


New trends in suicide in Japan

Suicide is the 10th leading cause of mortality in the world. It is just as common as road traffic deaths1 and the leading cause of death among the young. 2002 was the fifth consecutive year where there were more than 30 000 suicide deaths. The rate in Japan, 25 per 100 000, greatly exceeds that of the UK (7.4 per 100 000) and that of the US or Germany, 12 and 15.8, respectively.2 In 2002, 32 143 suicides were reported; this is an increase of 3.5% from 2001.

In Japan suicide victims are mostly young adults. Among those 15–24 and 40–54 it is the second leading cause of death and in 25–39 year age group it is the leading cause of death.3 The rate in middle aged men (40–54 years) was five times higher than in women, perhaps because of the association between suicide, unemployment, and economic recession.3


Suicide is a public health problem that requires an evidence based approach to prevention.5 The stigma associated with suicide and mental illness prompts the view that those who consider suicide are shameful or sinful conditions. This is also a barrier to treatment for persons with suicidal desires or who have attempted suicide in the past. Many suicides are preventable but as with other injuries, effective suicide prevention programs require commitment and resources.

Acknowledgement

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References


Further reflections on the seatbelt use and effectiveness issue

In a recent letter, Cummings and Rivara misstate my point regarding changes in estimated belt effectiveness in the mid-1980s using the comparison of front seat occupant pairs. They cite my statement, “What is not explained by the theory [about misclassification of seatbelt use by police] is the sudden gap in police reported use by the dead and survivors that appeared in the mid-1980s” as faulting them for not explaining why prevalence of seatbelt use changed from 1975 to 1998. How could anyone who uses the English language with a modicum of proficiency interpret “sudden” as 23 years and “gap in police reported use by the dead and survivors” as general prevalence of belt use?

Actually, a cursory look at the graph in Cummings paper that I critiqued indicates that the major reduction in risk ratios indicative of seatbelt effectiveness occurred during a short period in the mid-1980s when belt use laws were being debated and initially enacted in a few states. I noted that this debate could have changed police behavior in belt use classification in crashes, a point they ignored. I also pointed out that reductions in deaths related to on-road observations of belt use
prevalence controlling for other factors do not support their claim of 65%–70% belt effectiveness when used, a point they ignored.

I understand the distinction between what they call differential and non-differential misclassification. In a 1976 paper, I indicated how a small systematic error by police in assessing belt use in crashes would result in a large error in estimating belt effectiveness, a paper which Cummings dismissed as expressing “concern”. Cummings claims that his comparison of NASS investigators’ reports and police reports of belt use support the non-differential classification theory but that assumes that the NASS investigators possess the gold standard for assessing belt use. One of the major criteria for acceptance of research findings is plausibility. The risk ratios derived from post-1984 FARS and NASS data are not plausible given changes in belt use and death rates controlling for other factors. So what is the big deal if seatbelts are standard equipment and reduce injury? Excessive claims of belt effectiveness lead to overemphasis on increasing belt use to the neglect of other needed policies. Belt use in the US is near 70% and yet about 32,000 occupants of passenger cars, sport utility vehicles, and light trucks are dying each year in collisions. In recent US Congressional hearings on injury vehicle rollovers, based on erroneous police reports in FARS, as if low belt use absolved the industry of making stable vehicles. If belt use were 100%, many people would nevertheless die and be maimed in rollovers of vehicles that are unnecessarily unstable.

Assessing belt use after the fact of a rollover is particularly problematic because crash forces in the body area where the belt touches the person are less severe in a laterally rotating vehicle than in more direct impacts with other vehicles and objects, so that belt marks on the torso may be less evident and damage to the belts is less likely. People die more from head injury when the roof crashes in, or they impact surfaces external to the vehicle if they are ejected. Police officers, and apparently NASS investigators, too often assume that an ejected occupant was unbelted when, in fact, rotation of the vehicle results in occupant slippage out of belts in some cases and belts becoming unlatched due to impact on the latches in others. In both rollovers and non-rollovers, crash investigators may assume non-use of belts simply because the occupant died.

In a second letter, Koepell et al also misrepresent what I wrote about their ill-considered use of imputation of missing values. They quote my statement, “missing data on velocity changes in crashes were imputed partly from injury severity scores, again a cause imputed from an effect and then used as a control in the study, a true scientific ‘no-no’”. They construe that statement as saying that “Robortson argues that measures of crash outcome should not be used to impute values on a covariate which will later enter the main analysis as a predictor of crash outcome”. In fact, I would not publish a study if I had to rely on imputed data. In my opinion, such a study should not have diagnostic and research value. However, because serious biases noted previously by someone imputed values on a variable in more than 40% of the cases of an evaluation of efficacy and safety of a drug, the study would not likely be published or taken seriously if it was. Why should any less be acceptable in the study of injury control measures?

As a previous admiral of a substantial proportion of the research produced at the University of Washington’s Injury Prevention and Research Center by several of these same authors, it pains me to see them produce foolish papers and attempt to discredit a critic by distorting the criticism.

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2 Robertson LS. Bias in estimates of seat belt effectiveness. Inj Prev 2002;8:263.

Precautionary principle

I had a hard time digesting the preemptive strike doctrine of the Bush Administration until I read your editorial on the precautionary principle in a recent issue of Injury Prevention. Your piece helped me regain my sanity in the seemingly insane world. When it comes to the precautionary principle, we in the injury prevention field lag behind not only those in environmental health but also those in politics. Isn’t it the war in Iraq an application of the precautionary principle? You did an admirable job in arguing against the time-honored notion of science preceding policy. The precautionary principle, if expanded to law, would give the benefit of doubt to the accuser instead of the accused. Thank you for penning such a thought provoking commentary!

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References

BOOK REVIEWS

Accidental Injury: Biomechanics and Prevention. 2nd Ed.

Accidental Injury: Biomechanics and Prevention attempts to address the communication gap between engineering researchers studying the applied biomechanics of injury and medical personnel who diagnose traumatic injury. This reference book is a compendium of chapters that review the state-of-the-art in applied biomechanics research and has been revised, updated, and expanded from its first edition in 1993. There is a chapter each on particular body regions as well as chapters on related topics such as “Anthropomorphic test devices” (chapter 4), “Instrumentation in experimental design” (chapter 2), and “Occupant restraint systems” (chapter 8). New chapters include “Injury risk assessment based on dummy responses” (chapter 5), “Airbag inflation-induced injury biomechanics” (chapter 9), and “Pediatric biomechanics” (chapter 21).

The two editors, Alan Nahum, MD and John Melvin, PhD are recognized leaders in trauma medicine and injury biomechanics. In this volume they have brought together many of the seminal researchers in the fields of biomechanics and human traumatic injury research. The author of each chapter is an internationally recognized expert in the field who builds on his/her direct experience with these topics to provide an exhaustive review.

The target audience for this book includes physicians, attorneys, biomedical researchers, and mechanical, biomedical, and automotive engineers. Injury prevention professionals with limited engineering background may find the technical and theoretical treatment of the injury mechanisms contained in many of the chapters too detailed and complex and may find the language not accessible. Most of the chapters have little or nothing to do with a systems or practical injury prevention applications of the research findings.

A few chapters deserve special mention for their relevance to this audience. “Occupant restraint systems” by Grossman et al (chapter 7) is particularly relevant to the automotive engineers. This chapter subdivides restraint systems for adults and children, and reviews the design and function of seatbelts and airbags. “Biomechanical principles applied to the injury environment” (chapter 18) is particularly useful for those designing injury prevention strategies. “The biomechanics of child injury” (chapter 21) is a detailed review of the issues of interest to parents, engineers, and untrained clinicians.

The value of this book for the above stated audiences is that it can provide direction in understanding decades of biomechanics research by identifying key references for each topic. It is for this reason that this book should be considered a crucial reference book for anyone involved in biomechanical research of traumatic injury. Many of these references are in engineering conference proceedings that would not appear in any traditional Medline literature search. Although not stated in the book, many of the references can be obtained through the Society of Auto Engineers publications library at www.sae.org. For physicians who have relied on medical journals to remain current on this topic, this book will open the gateway to an extremely rich and robust body of literature of which they may have previously been unaware. Due to the technical nature of many of the topics, the book may encourage joint study of a topic by both medical personnel and engineering researchers thereby enhancement their research efforts.

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Looking Beneath the Surface of Agricultural Safety and Health.

Dennis J Murphy. (Pp 104.) Published by Agricultural Safety and Health.

Agriculture is a very dangerous occupation and a complex industry. Health and safety initiatives must account for a wide spectrum of variables such as economic conditions; technology; minimal regulatory controls; the range in worker ages; and many issues influenced by culture, ethnicity, and tradition. Despite a significant increase in federal funding for agricultural health and safety since 1990, when compared with other occupations, the expected reduction in injuries has not occurred. Agricultural health and safety specialists are often perplexed and frustrated with the minimal impact of their efforts.

Dennis Murphy is a national authority on agricultural health and safety, with three decades' experience in the field. This 100-page book, a result of a recent sabbatical at the National Institute for Occupational Safety and Health (NIOSH) which he used to trace the roots of the agricultural health and safety movement, to analyze major influences on safety initiatives, and to suggest strategies for the future.

There are seven chapters, each having a broad introduction and a clearly stated summary. Ample tables, figures and appendices highlight major points, and references are clearly and accurately cited. In the first three chapters the author argues that agricultural safety and health has been “compensation driven” rather than “evidence” or “theory driven” and provides the background for understanding both the opportunities and barriers created by the multidisciplinary nature of agricultural health and safety. Major programs, including the NIOSH-led National Initiative, are then described.

Chapter 4 provides an excellent overview of major challenges to agricultural safety and health. The author describes what he calls the “farm-safety-trap paradox,” the incongruence between farm people's safety knowledge, values, and practices. This paradox appears throughout the book, with suggestions on how to understand and address it through evaluative research during progressive stages of program development and implementation. There is analysis of why agricultural injury surveillance is a problem and a clearly stated summary. The book is plagued with problems and why, despite noble efforts to collect national level data, the true picture of agricultural injuries (especially non-fatal) eludes us. Chapters 5 and 6 address the need for national level data, the true picture of agricultural injury surveillance, and a clearly stated summary. The book is plagued with problems and why, despite noble efforts to collect national level data, the true picture of agricultural injuries (especially non-fatal) eludes us.

The book is a response to concerns about the rise in workplace injuries, a phenomenon that has been documented in recent years. The author provides an in-depth analysis of the factors contributing to these injuries and offers practical solutions for reducing them. The book is highly recommended for anyone involved in agricultural safety and health, including researchers, educators, and policymakers.

The author, Dennis J. Murphy, is a renowned expert in agricultural health and safety and has made significant contributions to the field. His book is a valuable resource for anyone interested in understanding the complex issues facing agricultural workers.

The book is published by Agricultural Safety and Health, a division of the American Society of Agricultural Engineers. It is available from the publisher or through major bookstores.

Looking Beneath the Surface of Agricultural Safety and Health provides a comprehensive overview of the challenges facing agricultural workers and offers practical solutions for improving safety and health in the industry. It is an important resource for anyone interested in agricultural safety and health.
examples from clinical practice (mainly from obstetrics), and discuss the challenges of implementation, how to use research results in the translation into practice, and an overview of the barriers and bridges to evidence based clinical practice. One chapter addresses the unique challenges of implementing research findings in developing countries.

There are some practical guidelines and tools. The two chapters on decision support and decision analysis, for example, provide both theoretical and practical information about how to conduct and apply decision analysis. The concept of opportunity costs and new options for encouraging implementation of results from economic evaluations are also addressed.

The chapter on evidence based policy making is the one most likely to be relevant to injury prevention researchers. It is also the only chapter to mention injury prevention strategies. The authors mention legislation as one policy that may arise from strong evidence. The author of this chapter, however, does not appear to support legislation as an element of policy. “Typically, therefore, legislation requires much stronger evidence before it can be introduced, particularly when paternalistic legislation designed to protect one group may harm others.” Citing the introduction of seatbelt legislation as one example of legislation, the author of this chapter points out that seatbelt legislation was not enacted until the evidence for the effectiveness of seatbelts was strong. No further mention of injury prevention initiatives ensues, in fact much of the rest of the policy chapter focuses on screening programs as policies.

While well written and essential reading for those in clinical practice, the book is of limited use to most injury prevention researchers. The examples are primarily related to how to get clinicians (mostly doctors) to change their practice to reflect current evidence. Although some of the tools and concepts (such as decision analysis) are broadly applicable, those who are searching for the best way to translate injury prevention research into evidence based practice will be disappointed. For multifaceted problems such as those typically encountered in injury prevention, both the evidence and the translation into practice are notably absent here.

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CORRECTION

We regret that due to an oversight the acknowledgements were omitted from the paper by Sorensen and Vittes published in the June issue (Sorensen SB, Vittes JK. Buying a handgun for someone else: firearm dealer willingness to sell. Inj Prev 2003;9:147–50). The acknowledgements are as follows:

The authors would like to thank Jeff Sinkey of the Los Angeles office of Thelen, Reid and Priest LLP and Eric Gorovitz of the Coalition to Stop Gun Violence for their legal research, Eugene Volokh and Mark Chekal for their comments on previous drafts, and Anthony DiStefano for his help with data collection.

LACUNAE

Measured responses to improve safety

Even in serious matters there can be something to laugh at. Privacy International has sifted through 5000 nominations from 35 countries to find awardees for stupid mechanisms for increasing security. The Delta Terminal at JFK Airport in New York won an award for flagrant intrusion by forcing a woman to drink three bottles of her own breast milk for fear the bottles contained explosives or chemicals. London’s Heathrow Airport won an award for quarantining a quantity of “Gunpowder” green tea—the tea was released but the labels were confiscated and destroyed. Australians will be proud that the national $15 million (US$ 9m) campaign to educate Australians about terrorism won the Most Egregiously Stupid Award. The kit, including a fridge magnet, urged them to report anything suspicious while asking them to be “alert but not alarmed” (from the Sydney Morning Herald, April 2003; submitted by Ian Scott).

Canadian Injury Prevention Conference 2003, Ottawa
23–25 November 2003. The meeting will build on the national conference held in 2000 and will focus on unintentional injury, violence, and suicide prevention. Organised jointly by Smartirisk, Safe Kids Canada and the Safe Communities Foundation, it aims to highlight the latest science and best practices in policy and programs; bridge the gap between research and practice by highlighting specific policy and practice recommendations stemming from Canadian research and targeted research needs identified through community practice; encourage networking and collaboration between different sectors to promote action and policy change; facilitate participation from stakeholders representing vulnerable populations; build momentum for sustained action from stakeholders at the municipal, regional, provincial and national levels; and further the activities of the Canadian Injury Research Network and the Canadian Institutes for Health Research in building capacity in injury research and knowledge translation fields. Details: www.safekidscanada.com/CIPC/default.html

Lifesavers Conferences: National Conference on Highway Safety Priorities. San Diego, California

7th World Conference on Injury Prevention and Safety Promotion, Vienna
6–9 June 2004. The major objectives of the conference are strengthening violence and injury prevention as an aspect of national public health policy and programs; producing synergy of the combined efforts of various violence and injury prevention disciplines; exchanging the most recent experiences in research and practice; and facilitating participation of experts from low income countries. Details: www.safety2004.info.

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