**Table 1** – Methodological summary of studies.

| **Reference** | **Country** | **Design** | **Sample** | **Measures** | **Summary** |
| --- | --- | --- | --- | --- | --- |
| Aftab M, Kolben D, Lurie P. International cigarette labeling practices. Tob Control. 1999; 8(4):368-72. | USA | Repeat cross-sectional survey | 10th-grade (n=16661) and 12th-grade  (n = 15 856) students from the  1989–1990 school year through the  1994–1995 school year. | Examine the effects of the alcohol warning label on adolescents during the first 5 years that the warning was required. | There were increases in awareness, exposure, and recognition memory of the warnings; effects levelled off 3.5 years after the warnings were introduced. No beneficial change in beliefs, alcohol consumption, or drinking and driving. |
| Fathelrahman AI, Omar M, Awang R, Borland R, Fong GT, Hammond D, Zain Z. Smokers’ responses towards cigarette pack warning labels in predicting quit intention, stage of change, and self-efficacy. Nicotine & Tobacco Research 2009;11(3):248-53. | Malaysia | Cross-sectional survey | 1,919 male smokers | Examine the effect of HWMs on quit intentions | Participants who felt affected by or thought about the HWMs and associated risks of smoking were more likely to change smoking behaviour and experience self-efficacy. |
| Elliott & Shanahan Research (2000) Evaluation of the Health Warnings and Explanatory Health Messages on Tobacco Products, Department of Health and Aged Care, Canberra. <http://www.health.gov.au/internet/main/publishing.nsf/Content/474DA5DAC70608F2CA2571A1001C7DFE/$File/execsumm.pdf> (accessed 12 April 2010) | Australia | Literature review, and repeat cross-sectional survey | 1204, 15+ years,  subgroups:  Smokers, recent ex-smokers (who quit smoking in the last 12 months), ex-smokers who have quit more than 12 months ago, and non-smokers. | Test how attitudes and knowledge of HWMs have changed in previous 4 years. | HWMs still regarded as important by community; awareness and recall of warnings at best stayed the same, sometimes decreased: suggests need for new warnings to renew interest. |
| Chaiton M, Cohen J, Kaiserman MJ, Leatherdale ST. Beliefs and Attitudes. In: 2002 Youth Smoking Survey-Technical Report. Health Canada, 2004. Available at: <http://www.hc-sc.gc.ca/hc-ps/pubs/tobac-tabac/yss-etj-2002/index-eng.php> (accessed 12 April 2010) | Canada | National, cross-sectional survey | N=19018; grades 5-9 | Assessed smoking and health beliefs; smoking status; opinions and knowledge of HWMs | In general, students believed HWMs and agreed that they should be on packages; students who reported seeing the HWMs more often were more likely to agree with them; exposure and recall of HWMs was associated with increased smoking behaviours; 38% recalled at least one HWM; compared with 1994 survey 73% of never smokers reported ever seeing a HWM (vs. 65%) |
| Environics Research Group. The Health effects of tobacco and health warning messages on cigarette packages—Survey of adults and adults smokers: Wave 12 surveys. Prepared for Health Canada; January, 2007. | Canada | National repeat cross-sectional survey | N=1501 (smokers, n=1000; non-smokers, n=501; potential quitters, n=591) | Knowledge of tobacco risks, constituents and HWMs. | 99% of adult smokers recall seeing HWMs on cigarette packs; 24% look at or read HWMs several times per day, and 15% say once a day; 86% agree that HWMs are accurate; 85% agree HWMs provide health information; 62% agree HWMs make smoking seem less attractive; 49% say HWMs have increased their desire to quit smoking; smokers’ top-of-mind recall of HWMs is better than that of non-smokers’. |
| Moodie C, Mackintosh AM, Hammond D. Adolescents’ response to text-only tobacco health warnings: Results from the 2008 UK Youth Tobacco Policy Survey. European Journal of Public Health 2009; Dec 3. [Epub ahead of print]. | UK | Cross-sectional survey | N=1401, aged 11-16. Regular smokers, n=142; occasional smokers, n=310; never smokers, n=946. | Assessed adolescent perceptions of and reactions to UK text warnings. | Depth of processing was low; a small number of smokers (6%) quit smoking completely due to the warnings. |
| European Commission. Eurobarometer: Survey on Tobacco (Analytical Report). March, 2009. Available at: <http://ec.europa.eu/public_opinion/flash/fl_253_en.pdf> (accessed 12 April 2010) | EU 27 member states and Norway | Cross-sectional survey | N=25,580 (26.4% smokers, 5.1% occasional smokers, 22.1% former smokers, 46.3% never smokers) | Examine smoking habits and effects of tobacco control policies. | 3 out of 10 participants thought that HWMs are effective in informing about health risks; younger respondents, less educated respondents and manual workers more likely to believe HWMs are effective regardless of smoking status; more than 50% believe colour picture added to HWM would be more effective. |
| Environics Research Group. Canadian adult and youth opinions on the sizing of health warning messages. Environics Research Group Limited, 1999. <http://dsp-psd.pwgsc.gc.ca/Collection/H49-134-1999E.pdf> (accessed 12 April 2010) | Canada | Cross-section survey | N=2018, 31% daily smokers, 4% occasional smokers, 65% non-smokers. | Perceptions of current HWMs, ways to improve HWMs. | Larger health warnings are believed to be more effective. |
| Les Études De Marche Createc. Quantitative study of Canadian youth smokers and vulnerable non smokers: Effects of modified packaging through increasing the size of warnings on cigarette packages. Prepared for Health Canada; April 2008. <http://www.tobaccolabels.ca/healt/canada2008~3> (accessed 12 April 2010) | Canada | Experimental design | 746 teenagers (306 current smokers, 440 vulnerable non-smokers) | Perceptions of larger HWMs compared to current size. | Significant effects were seen with 90% HWMs, best results were for 100% HWMs. |
| Les Études de Marche Createc. Quantitative study of Canadian adult smokers: Effects of modified packaging through increasing the size of warnings on cigarette packages. April 2008. Health Canada. Accessed 5 January 2008. Available at : <http://www.tobaccolabels.ca/healt/canada~7> (accessed 12 April 2010) | Canada | Experimental design | N=730 (hardcore smokers, n=358; potential quitters, n=372) | Perceptions of larger HWMs compared to current size. | Significant effects were seen on most indicators with 75% HWMs; smoker image and product image less sensitive to increased warning size. |
| Environics Research Group. The Health effects of tobacco and health warning messages on cigarette packages—Survey of youth: Wave 12 surveys. Prepared for Health Canada; January, 2007. | Canada | National repeat cross-sectional survey | N=1000, aged 12-18 (smokers, n=85; potential smokers, n=215) | Knowledge of tobacco risks, constituents and HWMs. | 90% of youth say they have seen HWMs on cigarette packs (96% of youth smokers); 7% look at or read HWMs several times per day, and 9% say once a day; 94% agree that HWMs are accurate; 92% agree HWMs provide health information; 82% agree HWMs make smoking seem less attractive; 66% say HWMs have increased their desire to quit smoking; 53% say HWMs have gotten them to smoke less. |
| Borland R, Hill D. Initial impact of the new Australian tobacco health warnings on knowledge and beliefs. Tob Control 1997; 6: 317-325. | Australia | Repeat cross-sectional survey  Cohort study  5-month follow-up | 510 smokers and 525 non-smokers  243 smokers in cohort | Awareness of new HWMs compared to old ones; assess changes in awareness of HWM info. | Few changes for non-smokers. Smokers aware of new, larger HWMs; some reported reduced consumption because of HWMs; increase in knowledge of constituents; increased recall of HWMs. |
| Hammond D, Fong GT, McDonald P, Cameron R, Brown SK. Impact of the graphic Canadian warning labels on adult smoking behaviour. Tob Control 2003; 12: 391-395. | Canada | Cohort study  3-month follow-up | N=616 (smokers, n=616) | Smoking behaviour, intentions to quit, and salience of HWMs. | Cognitive processing of HWMs predicted cessation behaviour at 3-month follow-up, controlling for quit intentions and smoking status at baseline. |
| Shanahan, P. and Elliott, D., 2009, Evaluation of the Effectiveness of the Graphic Health Warnings on Tobacco Product Packaging 2008, Australian Government Department of Health and Ageing, Canberra; 2009. http://www.health.gov.au/internet/main/publishing.nsf/Content/health-pubhlth-strateg-drugs-tobacco-warnings.htm (accessed 12 April 2010) | Australia | Lit review, 28 semi-structured interviews with key informants, 24 group discussions, telephone survey (compared with 2000 survey) | Telephone survey:  N=1304 (aged 15+) (17% smokers) | Telephone survey:  Assess changes in salience of HWMs from 2000 to 2008. | Most people, especially smokers, were aware of HWMs, and could recall at least 1 HWM. Smokers and recent quitters in 2008 more likely to agree that HWMs are important compared with 2000 results. |
| Cavalcante TM. Labelling and Packaging in Brazil National Cancer Institute, Health Ministry of Brazil; World Health Organization. Available at: <http://www.who.int/tobacco/training/success_stories/en/best_practices_brazil_labelling.pdf> (accessed 12 April 2010) | Brazil | Pre-post repeated measures design of call volume | N=126,514 | Assessed number of calls to quitline before and after it appeared on HWMs | After printing the quitline number on HWMs, the number of calls increased progressively. |
| Hammond D, Fong GT, Borland R, McNeill A, Cummings KM, Hastings G. Effectiveness of cigarette warning labels in informing smokers about the risks of smoking: findings from the International Tobacco Control (ITC) Four Country Survey. Tobacco Control 2006;15(Suppl III):iii19–iii25. | Australia, Canada, UK, USA | Cross-sectional survey | 9058 adult smokers including 2305 from Australia, 2214 from Canada, 2401 from the UK, and 2138 from USA | Knowledge of tobacco risks. | Smokers who noticed warnings were more likely to endorse health risks; those living in countries with mandated HWMs reported greater health knowledge. |
| Crawford MA, Balch GI, Mermelstein R, et al. Responses to tobacco control policies among youth. *Tobacco Contro*l 2002;11: 14–19. | USA | Focus groups | N=785 youth (82.7% smoked within last 30 days) | Awareness and opinions of laws, prices, cigarette ingredients and HWMS. | Aware of laws and HWMs but believed them to be ineffective; thought disclosing common uses of toxic ingredients in cigarettes could be a deterrent for never-smokers. |
| Fischer PM, Richards EJB, Krugman DM. Recall and eye tracking study of adolescents viewing tobacco advertisements. *JAMA* 1989; 261: 84-89. | USA | Experimental study | N=61 (ages 13-17) | Eye tracking measured how long adolescents look at the warning on tobacco advertisements. | Looked at warning 8% of total advertisement viewing time; in 43.6% of cases, participants did not look at warning at all; recall of HWM was slightly better than random guessing. |
| BRC Marketing & Social Research. Smoking health warnings Stage 2: Optimising smoking health warnings-text graphics, size, and colour testing. Prepared for the New Zealand Ministry of Health; August 2004. Optimising smoking health warnings-text graphics, size, and colour testing. <http://www.ndp.govt.nz/moh.nsf/indexcm/ndp-publications-smokinghealthwarningsstage2aug2004> (accessed 12 July 2009). | New Zealand | Focus groups | 37 smokers in target audiences: parents with children >16, Maori, young women 15-24, other smokers. | Test opinion of various design aspects of HWMs. | Large HWMs with text in black and yellow on the front of packs thought to be most effective. Simplicity, brevity, and shock-value are essential. |
| Centre for Behavioural Research in Cancer, ACCV. *Health warnings and contents labelling on tobacco products*. Centre for Behavioural Research in Cancer, 1992. | Australia | Paper 2 & 9: Within-subjects repeated measures  Paper 13: Focus groups | Paper 2 & 9: n=10 (19+) (same participants)  Paper 13: n=66 (aged 12-20) | Paper 2: Determine the legibility of HWMs with different text and background colours.  Paper 9: Determine the legibility of HWMs with different text and background colours, and at 15% vs. 25%.  Paper 13: Test general opinion of increased amount of HWMs on packs. | Paper 2: Each colour combination tested was significantly less legible than the black-on-white warning.  Paper 9: Larger HWMs (25% vs. 15%) are more legible; Black text on a fluorescent background is not less legible than black-on-white.  Paper 13: Larger HWMs (25% vs. 15%) and the inclusion of more health information on packs are valuable and appropriate changes. |
| Linthwaite P. Health warnings. Health Educ J 1985; 44: 218-219. | United Kingdom | Cross-sectional survey | N=56 (44 smokers; 12 non-smokers) (approximately equal groups: aged 16-24; aged 24-40; 40+) | Perceptions of new HWMs, placement on pack, rotating HWMs concurrently. | Shorter text warnings and placing images on the front of packs found to be more effective; rotating the images thought to increase durability. |
| Rootman I, Flay BR. A study on youth smoking: Cigarette packaging and event marketing increases the attractiveness of smoking. Toronto, Ontario: University of Toronto, 1995. <http://www.tobaccolabels.ca/prohibit/canadaandu> (accessed Arpil 12, 2010) | Canada/US | Focus groups, and cross-sectional survey | Cross-sectional survey with 2132 students aged 12-17 and Focus Group discussions with 339 people aged 12-17 (smoking varies with age; random sample) | Perception of cigarette advertisements; effect of plain packaging in ads, recall of HWMs, and price. | Misinterpreted tobacco-sponsored event ads as tobacco ads; majority of Canadian youth could recall HWM, while only 6% of Chicago youth; preferred regular over plain packaging; some youth thought that plain packaging would decrease youth smoking and lower uptake. |
| Nilsson T. Legibility of tobacco health messages with respect to distance. A report to the Tobacco Products Division of the Health Protection Branch of Health and Welfare Canada. 1991. <http://dsp-psd.pwgsc.gc.ca/Collection/H49-132-1999E.pdf> (accessed 12 April 2009) | Canada | Experiment | N=14 | Test legibility of 7 new warning designs at 40%, 50% and 60% at difference distances. | Best results found with: large text font on a uniform background; black text on white is more legible than the reverse; large colour photos. |
| Tandemar Research Inc. Cigarette Packaging Study: The Evaluation of New Health Warning Messages. Toronto (ON): Tandemar Research Inc., 1996. | Canada | Nationally representative cross-sectional survey | N=2000 (15+; smokers) | Evaluate new HWMs in terms of colour, placement, size and content | HWMs most likely to be recalled if shown on the top of packages and presented in black and white; when occupying 35% or more of the top of the package HWMs were most likely to be read by smokers. |
| Devlin E, Anderson S, Hastings G, MacFadyen L. Targeting smokers with tobacco warning labels - opportunities and challenges for Pan European health promotion. Health Promotion International 2005; 20(1):41-49. | Finland, France, Germany, Greece, Spain, Sweden, UK | Focus groups | 56 focus groups of 6-8 people  (17-64 years old) (50% smokers not contemplating quitting; 50% smokers contemplating quitting) | Pretest new EU HWMs and compare to old HWMs. | New larger HWMs more noticeable; received and interpreted differently across regions. Those contemplating quitting attend to HWMs, younger smokers find short-term health and cosmetic-related HWMs more salient. |
| Fong, G.T., Ratte, S., Craig, L., Driezen, P., Wilquin, J-L, Beck, F., Guignard, R., Kennedy, R.D., & Arwidson, P. (2008, May 27). Évaluation des politiques de lutte contre le tabagisme en France: résultats de la première vague de l’enquête ITC France [Evaluating tobacco control policies in France: Results of the first wave of the ITC France Survey.] *Bulletin Épidémiologique Hebdomadaire (Numéro thématique—Journée mondiale sans tabac 2008) [Weekly Epidemiological Bulletin (Special Issue—World No Tobacco Day 2008)], 22-22*, 183-187. | France | Quasi-experimental longitudinal cohort study | N=2260 (18+) (1735 smokers; 525 non-smokers) | Examine smoking behaviour, smoking and quitting history; smoke-free laws; warning labels. | French smokers show lower levels of dependence compared with other countries, which seems favourable to smoke-free laws; have more knowledge of the harms of smoking compared with UK smokers; nearly half of smokers stated that labels make them think about the risks “a lot”, which is much higher than other countries. |
| Borland R, Yong HH, Wilson N, Fong GT, Hammond D, Cummings KM, Hosting W, McNeill A. How reaction to cigarette packet health warnings influence quitting: Findings from the ITC Four Country survey. Addiction 2009;104(4):669-75. | Australia, Canada, UK, US | Cohort survey | waves 1–2: *n* = 6525; waves 2–3: *n* = 5257; waves 3–4: *n* = 4439; and waves 4–5:  *n* = 3993. | Examine the impact of HWMs on quitting activity. | Forgoing cigarettes as a result of viewing HWMs and quit-related cognitive reactions to HWMs both predict quit attempts. |
| Portillo F and Antonanzas F. Information disclosure and smoking risk perceptions: potential short-term impact on Spanish students of the new European Union directive on tobacco products. European Journal of Public Health 2002;12:295-301. | Spain | Experiment  (within subject) | 435 University students, 18-24 (31.26% smokers) | Impact of EU HWMs on perceptions of risk. | Youth attributed a higher health risk to smoking following the presentation of HWMs. |
| Levie WH, Lentz R. Effects of text illustrations: A review of research. Educational Communication and Technology Journal 1982; 30: 195-232. | USA | Literature review | Review of 155 experiments involving a total of 7182 human subjects | Examine whether illustrations aid learning of text material. | Strong evidence to support that illustrations aid learning of text material, especially when illustrations provide text-redundant information. |
| Braun CC, Kline PB, Silver NC. The influence of colour on warning label perceptions. International Journal of Industrial Ergonomics 1995; 15: 179-187. | USA | Experiment | N=33 undergraduate students (Mean age=26.7) (26 females) | Compare perceived hazards from colour vs. achromatic warnings on household cleaning products. | Colour labels were perceived as more hazardous and more readable than those in black and white. |
| Sherman SJ, Cialdini RB, Schwartzman DF, Reynolds KD. Imagining can heighten or lower the perceived likelihood of contracting a disease: The mediating effect of ease of imagery. Personality and Social Psychology Bulletin 1985; 11: 118-127. | USA | Experiment | 120 female undergraduate students (ages not specified) | Examine if imagining hypothetical future events may render those events subjectively more likely | Diseases that were judged as “easier to imagine” were perceived to be “more likely” to occur; supports availability heuristic. |
| Kalsher MJ, Wogalter MS, Racicot BM. 1996. Pharmaceutical container labels and warnings: Preference and perceived readability of alternative designs and pictorials. Int J Indus Ergon 18:83–90. | USA | Experiment done with 2 different samples | Experiment 1: 84 undergraduate students (Mean age=21.8), Experiment 2: 58 elderly volunteers living in a group home (Mean age=72.9) | To investigate the effects of: (1) alternative ways of increasing the available surface area of prescription drug labels, and (2) presence versus absence of pictorials on measures of prescription drug label preference | Generally, all participants preferred alternative labels, and labels with pictorials. |
| O'Hegarty M, Pederson LL, Nelson DE, Mowery P, Gable JM, Wortley P. Reactions of young adult smokers to warning labels on cigarette packages. Am J Prev Med 2006 Jun;30(6):467-73. | USA | Cross-sectional survey (online) | 572 current smokers and 191 formers smokers between the ages of 18-24 | Examine how smokers and former smokers respond to stronger, more graphic warnings on US packs. | All participants thought that warnings with text plus graphics were more of a deterrent to smoke, and more effective in informing about health risks. |
| Vardavas CI, Connolly G, Karamanolis K, Kafatos A. Adolescents perceived effectiveness of the proposed European graphic tobacco warning labels.*Eur J Public Health* 2009;19(2):212-7. | Greece | Cross-sectional survey | N=574 (ages 13-18) (smokers, n=111; non-smokers, n=462) | Compare effectiveness of EU graphic HWMs with EU text-only HWMs. | Non-smokers rated the graphic HWMs are more effective; controlling for gender, age, smoking status and CPD, younger adolescents preferred the graphic HWMs and thought they would be effective in preventing them from smoking. |
| Kees J. Burton S. Andrews J.C. Kozup J. Tests of Graphic Visuals and cigarette package warning combinations: implications for the framework convention on tobacco control. Journal of Public Policy & Marketing 2006, 25(2): 212-223. | Study 1: USA  Study 2: USA  Study 3: Canada | Study 1: Experiment  Study 2: Experiment (online)  Study 3: Experiment (online) | Study 1: 76 university aged smokers  Study 2: 199 women aged 18-44, smokers  Study 3: 145 women aged 18-44, smokers | Study 1: Test effect of warning image (lungs)/no warning image and warning text/no warning text.  Study 2: Same as Study 1 except HWMs referred to risk of smoking while pregnant.  Study 3: Identical to Study 2. | Study 1: Warning image was more effective than text warning; text and image increased perception of pack influence on intentions to quit.  Study 2: Warning image had greater effect in encouraging quitting; image and text warning combined not significantly different than effect of image alone.  Study 3: Results consistent with Study 2. |
| Sabbane LI, Bellavance F, Chebat JC. Recency Versus Repetition Priming Effects of Cigarette Warnings on Nonsmoking Teenagers: The Moderating Effects of Cigarette-Brand Familiarity. *Journal of Applied Social Psychology* 2009; **39**, 3: 656–682. | Canada | Between subject experimental design | 178 youth (ages 12-17) | Brand attitude and smoking intentions. | Pictorial warnings significantly reduced attitudes toward cigarette brands, compared to text-only or no warning. Pictorial warnings reduced favourable attitudes towards websites displaying tobacco marketing. |
| Fong GT, Hammond D, Yuan J, Li Q, Quah ACK, Yan M. Perceptions of Tobacco Health Warnings in China Compared to Picture and Text-Only Health Warnings From Other Countries: An Experimental Study. Tobacco Control 2010; 19(Suppl 2):i69ei77. | China | Within-subject repeated measures design | N=1169 (396 adult smokers; 377 adult nonsmokers; 396 youth aged 13-17) | To assess the effectiveness of current Chinese HWMs compared with picture and text-only HWMs from other countries. | Picture warnings rated as much more effective than the same warnings without pictures; picture and text-only HWMs from other countries were rated as more effective than the text-only Chinese warnings. |
| Environics Research Group. Testing New Health Warning Messages for Cigarette packages: A Summary of Three Phases of Focus Group Research: Final Report, Prepared for Health Canada, 2000. <http://www.tobaccolabels.ca/healt/canada> (accessed 12 July 2009) | Canada | Focus groups | Phase I: smokers and potential smokers 13-31+. Phase II: smokers and potential smokers 13-31+. Phase III: smokers aged 17-19, and potential quitters aged 20 and up. | To examine reactions to current text-only warnings on Canadian cigarette packages, as well as “new” pictorial warnings. | Most participants thought the pictorial warnings were an improvement, provided more information, and may be successful in deterring certain groups from smoking. |
| Corporate Research Associates. Creative Concept Testing for Health Warning Messages. Prepared for Health Canada, 2005. <http://www.tobaccolabels.ca/healt/canada2005> (accessed 13 July 2009) | Canada | Focus groups | Youth smokers 18-24; adult smokers 25+ | To test opinions of new HWMs vs. the current set. | Participants thought the new HWMs should be: distinct from the current ones and any related ad campaigns; credible and supported by facts; relevant to different populations (i.e., parents). In general, different approaches were successful in reaching participants. |
| BRC Marketing & Social Research. Smoking health warnings Stage 1: The effectiveness of different (pictorial) health warnings in helping people consider their smoking-related behaviour. Prepared for the New Zealand Ministry of Health; May 2004. | New Zealand | Experiment, including qualitative and quantitative components | 100 participants, including 56 current smokers, 17 recent quitters, and 27 non-smokers. | Test effectiveness of different HWMs in helping people consider their smoking-related behaviour. | Many HWMs were thought to be effective; participants generally thought a Quitline would be helpful, and messages from the Ministry of Health would be most credible. |
| Elliott & Shanahan (E&S) Research. Developmental Research for New Australian Health Warnings on Tobacco Products: Stage 1. Prepared for the Population Health Division Department of Health and Ageing. Commonwealth of Australia; September 2002. <http://www.health.gov.au/internet/main/publishing.nsf/Content/474DA5DAC70608F2CA2571A1001C7DFE/$File/warnings_stage1.pdf> (accessed 13 July 2009) | Australia | Focus groups | 44 mini groups consisting of 4-5 participants (aged 15-70)  Regular, occasional/ social, recent ex-smokers, and longterm ex-smokers included. | Test differences across populations in response to proposed new HWMs. | Depending on their age, gender and smoking status people were affected differently and by different warnings. |
| Elliott & Shanahan (E&S) Research. Developmental Research for New Australian Health Warnings on Tobacco Products Stage 2. Prepared for: The Australian Population Health Division Department of Health and Ageing. Commonwealth of Australia, August 2003. <http://www.health.gov.au/internet/main/publishing.nsf/Content/474DA5DAC70608F2CA2571A1001C7DFE/$File/warnings_stage2.pdf> (accessed 13 July 2009) | Australia | Focus groups | 20 mini groups consisting of 4-5 participants (aged 15-70)  Regular, occasional/ social, recent ex-smokers, and longterm ex-smokers included. | Assess reactions to proposed new HWMs. | HWMs with pictures were more informative, and more likely to elicit emotional reactions. Participants had positive responses to personable HWMs and showed external visual stimuli (i.e., mouth cancer) |
| Gallopel-Morvan K, Gabriel P, Le Gall-Ely M, Rieunier S, Urien B. The use of visual warnings in social marketing: The case of tobacco. Journal of Business Research; In press. | France | Focus groups | N=50 (aged 15-46) (26 smokers, 24 non-smokers) | Effect of EU graphic HWMs, and plain packaging. | Participants found graphic HWMs more effective than EU text warnings; pack with graphic HWM on both sides judged as least attractive; grey plain packages thought to be least attractive. |
| UK Department of Health. Consultation on the Introduction of Picture Warnings on Tobacco Packs: Report on Consultation. August, 2007. Available at: <http://www.dh.gov.uk/en/Consultations/Responsestoconsultations/DH_077960> (accessed 13 July 2009) | UK | Cross-sectional online survey | 29.994 website responses from individuals | Assess opinions of new UK HWMs | Responses to online survey supported large pictorial HWMs with quit info; supported putting images on front of packs. |
| IPSOS survey, Belgium 2007. Effectiveness of picture warnings on behalf of the Belgium Cancer Foundation. | Belgium | Survey | N=3911 (15+) | Assess smoking behaviour & opinions of HWMs | Pictorial HWMs have led to a reported increase in incentive to quit smoking, increased discussions of the HWMs with friends and family, and an increased belief that pictorial HWMs make packages less attractive (especially among 15-24 years olds wanting to quit in the next year). |
| Ministry of Health, Bulgaria (2008). Most effective pictures out of 42 images – web based survey. | Bulgaria | Survey | N=2185 (653 smokers; 376 former smokers; 1156 nonsmokers) | Assess which HWM is most effective | Health warnings depicting “graphic” health effects were rated as most effective |
| Les Etudes de Marche Createc. Final Report: Qualitative testing of health warnings messages. Prepared for the Tobacco Control Programme Health Canada, June 2006. | Canada | Focus groups | 237 smokers | Assess smokers’ reactions to new HWMs | Best combination: HWMs that generated strong emotion and was supported by factual info. Participants liked the quitline/website info. |
| Hammond D, Fong GT, Borland R, Cummings KM, McNeill A, Driezen P. Text and Graphic Warnings on Cigarette Packages: Findings from the ITC Four Country Survey. Am J Prev Med 2007; 32 (3): 202–209. | Canada, U.S., UK, and Australia | Quasi-experimental study | 14975 adult smokers, including 3687 from Canada, 4273 from the U.S., 3634 from the UK, and 3381 from Australia | Examine effectiveness of graphic and text HWMs on cigarette packages | Canadian smokers reported highest levels of awareness and impact for HWMs; US lowest. Large warnings noticed and rated as effective. Changes in HWMs are associated with increased effectiveness. |
| Hammond D, Fong GT, McDonald P, Brown, KS, Cameron R. Graphic Canadian warning labels and adverse outcomes: evidence from Canadian smokers. Am J Public Health 2004; 94 (8): 1442-45. | Canada | Cohort study | N=616 smokers | Assess impact of Canadian graphic HWMs. | About 20% of participants smoked more at 3-month follow-up as a result of HWMs; those who reported greater negative emotion in response to HWMs more likely to engage in quitting behaviours reduced smoking at follow-up. |
| Thrasher JF, Hammond D, Fong GT, Arillo-Santillan, E. Smokers’ reactions to cigarette package warnings with graphic imagery and with only text: A comparison between Mexico and Canada. Salud Publica Mex 2007; 49 suppl 2: S233-40. | Canada and Mexico | Cross-sectional survey | Canada, n=1751 smokers; Mexico, n=1081 smokers | Determine whether packs with Canadian graphic HWMs were more effective than packs with Mexican text warnings. | Canadian smokers reported higher HWM salience, which predicted intention to quit. A majority of Mexican smokers want more info on their cigarette packs. |
| White V, Webster B, Wakefield M. Do graphic health warning labels have an impact on adolescents’ smoking related beliefs and behaviours? Addiction 2008;103(9):1562-71. | Australia | Repeat cross-sectional survey | N=2432 students grades 8-12 in 2005 (9% established smokers, 37% experimental smokers, 10% susceptible non-smokers, 44% not susceptible non-smokers)  N=2050 students grades 8-12 in 2006 (7% established smokers, 34% experimental smokers, 10% susceptible non-smokers, 50% not susceptible non-smokers) | Assess impact of HWMs (before and 6 months after HWMs were introduced) on adolescents at different smoking uptake stages. | After the introduction of HWMs: cognitive processing of HWMs increased; experimental and established smokers more likely to think about quitting; intention to smoke was lower among those who had talked about the labels and forgone smoking. |
| Borland R, Wilson N, Fong GT, Hammond D et al. Impact of Graphic and Text Warnings on Cigarette Packs: Findings from Four Countries over Five Years. Tobacco Control 2009; 18(5): 358-64. | Canada, US, UK, Australia | Quasi-experimental | N=17,773 smokers | Impact of Australia’s new graphic HWMs. | Stimulated more cognitive responses and were avoided more than UK text HWMs (controlling for date). |
| Hassan LM, Shiu E, Thrasher JF, Fong GT, Hastings G. Exploring the effectiveness of cigarette warning labels: findings from the United States and United Kingdom arms of the International Tobacco Control (ITC) Four Country Survey. Int. J. Nonprofit Volunt. Sect. Mark 2008; 13: 263–274. | US, UK | Cohort study | N=901 US adult smokers; N=1459 UK adults smokers | Assess the effectiveness of UK text HWMs compared with US text HWMs. | More prominent, new UK labels have a direct effect on behavioural compliance in smokers; Older, less visible US HWMs may be ‘worn-out’. |
| Petersen LE, Lieder F. Die Effektivität von schriftlichen und graphischen Warnhinweisen auf Zigarettenschachteln: Eine Überprüfung des revidierten Modells der Schutzmotivation. *Zeitschrift für Sozialpsychologie* 2006; *37(4):* 245-258. | Germany | Experiment | N=309 (aged 13-18; smokers) | Assess the effectiveness of new graphic EU HWMs compared with current German HWMs. | Found no significant difference between EU pictorial HWMs and current German text-only HWMs. |
| Sabbane LI, Lowrey TM, Chebat JC. The Effectiveness of Cigarette Warning Label Threats on Nonsmoking Adolescents. The Journal of Consumer Affairs 2009; 43(2): 332-335. | Canada, US | Experiment (online) |  | Effects of packs presented with: no warning; text warning only; text and graphic HWM. | Graphic label was most effect for Canadian participants (lower smoke intentions, negative brand attitudes), but least effective at lowering smoke intentions for US participants. |
| Willemsen MC. The new EU cigarette health warnings benefit smokers who want to quit the habit: results from the Dutch Continuous Survey of Smoking Habits. Eur J Public Health 2005; 15(4): 389-92. | Netherlands | Cross-sectional survey | 3937 adult smokers | Examine the impact of new EU HWMs. | Of smokers, 14% became less inclined to purchase cigarettes because of the new warnings, 31.8% said they prefer to purchase a pack without the new warnings, 17.9% reported that warnings increased their motivated to quit and 10.3% said they smoked less. A strong dose–response relationship was observed between these effects and intention to quit. |
| Canadian Cancer Society Evaluation of New Warnings on Cigarette Packages. Prepared by: Environics, Focus Canada 2001-3; 2001. <http://www.cancer.ca/canada-wide/how%20you%20can%20help/take%20action/advocacy%20what%20were%20doing/tobacco%20control%20advocacy/progress%20in%20tobacco%20control/evaluation%20of%20new%20warnings%20on%20cigarette%20packages.aspx?sc_lang=en> (accessed 13 July 2009). | Canada | Cross-sectional survey | Adults, n=2031. Smokers, n=633. | Evaluate the new HWMs on Canadian packs. | A significant portion of smokers reported increased motivation to quit, concern about health effects, and awareness of health effects. Smokers and non-smokers thought the diseased mouth and lung tumour warnings were more effective. |
| Hill D. New cigarette-packet warnings: are they getting through? Med J Aust 1988; 148: 478-480. | Australia | Repeat cross-sectional survey | Time 1, n=582  Time 2, n=1154 | Determine level of knowledge of current cigarette HWMs (1988). | Majority of participants knew at least one HWM; 97% of smokers could provide text of HWM. Mention of “lung cancer” and “reducing fitness” associated with intentions to quit. |
| Koval JJ, Aubut JA, Pederson LL, O'Hegarty M, Chan SS.The potential effectiveness of warning labels on cigarette packages: the perceptions of young adult Canadians. Can J Public Health 2005; 96(5):353-6. | Canada | Survey | N=1267 (ages 20-24, 32.8% smokers) (at time 2) | To examine how Canadians in their 20s feel about the current graphic HWMs and their potential to prevent smoking and encourage quitting. | Experimental/ex-smokers more likely than smokers to believe HWMs would make people less likely to smoke; female smokers more likely than male smokers to think about quitting after viewing HWMs. |
| UK Department of Health. Consultation on the introduction of picture warnings on tobacco pack. May 2006. Available at: <http://www.dh.gov.uk/assetRoot/04/13/54/96/04135496.pdf> | UK | Pre-post repeated measures design (Call volume) | Calls to quitline | Discussing need for new pictorial HWMs with shareholders. | Text warnings increased calls to Stop Smoking Helpline (1500-4000 per month), though calls citing the warnings as the reason for calling are waning. |
| Willemsen MC, Simons C, Zeeman. G. Impact of the new EU health warnings on the Dutch quit line. Tob Control 2002; 11: 382. | The Netherlands | Pre-post repeated measures design (Call volume) | Calls to quitline | To examine the impact of featuring the Dutch quit line number on the new EU health warnings. | Quality and quantity of calls increased; significant increase in calls from lower SES groups, as well as those unsure of intentions to quit. |
| Miller CL, Hill DJ, Quester PG, Hiller JE. Impact on the Australian Quitline of new graphic cigarette pack warnings including the Quitline number. Tob Control 2009; 18: 228-234. | Australia | Pre-post repeated measures design (Call volume) | Calls to quitline | Monitored Australia Quitline 2 years before and after HWMs included the Quitline number. | Twice as many calls in 2006 (year of introduction) as in each year before; tapered in 2007, but still higher than before introduction. |
| Hammond D. McDonald, PW, Fong GT, Cameron AR. Cigarette warning labels, smoking bans, and motivation to quit smoking: Evidence from former smokers. Canadian Journal of Public Health 2004; 95 (3): 201-04. | Canada | Cross-sectional survey | N=191 former smokers | Extent to which former smokers’ motivation to quit was influenced by: smoke-free bylaws and graphic HWMs. | Smoke-free labelling policies were associated with greater motivations to quit and remain quit. |
| Gospodinov N, Irvine I. Global Health Warnings on Tobacco Packaging: Evidence from the Canadian Experiment. *Topics in Economic Analysis & Policy* 2004; 4(1): 30. | Canada | Repeat cross-sectional survey | Time 1, n=9729  Time 2, n=10447 | Assess smoking prevalence data immediately before and after the introduction of HWMs. | Implementation of pictorial HWMs in Canada reduced daily consumption of cigarettes, but had no discernable impact on prevalence. |
| Sweet KM, Willis SK, Ashida S, Westman JA. Use of Fear-Appeal Techniques in the Design of Tailored Cancer Risk Communication Messages: Implications for Healthcare Providers. Journal of Clinical Oncology. 2003; 21(17):3375-3376. | USA | Focus group | N=31 individuals of moderate or high genetic risk of cancer | Investigate the effectiveness of the fear-appeal theory for thedesign of health risk assessment messages. | When given information about cancer risk, individuals were empowered when given information and efficacy measures; simple, understandable information and additional resources were most helpful. |
| Peters E, Romer D, Slovic P, et al. The impact and acceptability of Canadian-style cigarette warning labels among U.S. smokers and nonsmokers. Nicotine Tob Res. 2007;9(4):473-81. | USA | Experiment | 169 participants - 88 smokers and 81 nonsmokers | Evaluation of Canadian and US HWMs; assess credibility of Canadian HWMs in the US market. | Canadian labels produced a negative reaction without signs of a defensive reaction from smokers; majority of smokers and non-smokers endorsed the use of Canadian HWMs in the USA. |
| Donovan RJ, Jalleh G, Carter OBJ. Tobacco industry smoking prevention advertisements; impact on youth motivation for smoking in the future. Social Marketing Quarterly. 2006;7(2):3-13. | Australia | Within subjects repeated measures design | N=257, aged 14-18, (50% smokers) | To assess the impact on young people of three tobacco industry advertisements previously screened on MTV Europe and in cinemas in Australia | Tobacco industry ads were as effective as some Australian tobacco control ads, but not as effective as others; industry ads may increase positive views of tobacco industry. |
| Nascimento BEM, Oliveira L, Vieira AS, Joffily M, Gleiser S, Pereira MG, Cavalcante T, Volchan E. Avoidance of smoking: the impact of warning in Brazil. Tob. Control 2008;17;405-409. | Brazil | Quasi-experiment | N=212 undergraduate students (18% smokers) | Investigate the impact of Brazilian HWMs through a well-establishedpsychometric tool designed for studies on emotion and behaviour. | HWMs described as unpleasant but moderately arousing; Smokers significantly more likely than non-smokers to judge HWMs depicting people smoking more positively. |
| Hammond D, Thrasher JF, Reid J. Mexico health warning study: International packaging study. January 2010. Available at: <http://davidhammond.ca/downloads/Mexico%20Packaging%20Study/> (accessed 20 Jan 2010). | Mexico | Within subjects repeated measures design  Face-to-face survey | 492 adults smokers  500 youth (16-18 years) | Ratings of individual warnings (5 to 7 warnings for each of 17 health effects) and rankings of warnings for each health effect | Picture warnings were rated more effective than text only. Graphic warnings, those depicting human suffering, and warnings that included testimonial information were rated as most effective. Warnings with symbolic images were rated as less effective. |
| Western Opinion/NRG Research Group. Illustration-based health information messages: Concept testing. Prepared for Health Canada; August 2006. Available at: <http://www.tobaccolabels.ca/healt/canada2006> (accessed 12 April 2010) | Canada | Focus groups | Four focus groups, 2 consisting of 18-24 year olds and 2 consisting of those 25 years of age and older. Each group had 7-9 people attend | To test 10 new creative Health Information executions that would appear on the lip and inside back of cigarette package. | Overall, no one theme was positively received; some individual components struck chords but no one execution or theme captured the interest of the groups. |
| Decima Research Testing of Health Warning Messages and Health Information Messages for Tobacco Products Executive Summary. Prepared on behalf of Health Canada; June 2009. | Canada | Qualitative, focus groups  Quantitative surveys (online & mail) | Adult smokers.  64 focus groups  2,241 survey respondents | A range of measures were used to test proposed HWMs developed for Health Canada. | “Exterior” warnings were rated as more effective than warnings design for inserts, although smokers strongly supported the interior warnings.  The report discusses findings on effectiveness of specific warning and themes. |
| Goodall C and Appiah O. Adolescents’ Perceptions of Canadian Cigarette Package Warning Labels: Investigating the Effects of Message Framing. Health Communication 2008; 23(2): 117-127. | USA | Experiment | N=210, aged 15-19 (31 smokers, 179 nonsmokers) | Effect of loss-framed, gain-framed avoidance, and gain-framed benefits HWMs on attitudes and smoking behaviour. | Adolescents favoured the loss-framed HWMs and thought they were more effective than gain-framed HWMs. Smokers exposed to loss-framed HWMs had lowered intentions to smoke in the future. |
| Witte, K., & Allen, M. A meta-analysis of fear appeals: Implications for effective public health campaigns. Health Education and Behavior. 2000;27:591–615. | Review paper – multiple countries | Meta-analysis | 12,735 participants from 98 studies included in meta-analysis | Cognitive and behavioural reactions to fear-appeal manipulations | Strong fear appeals and high-efficacy messages produce the greatest  behavior change, whereas strong fear appeals with low-efficacy messages produced the greatest levels of defensive responses. |
| Robinson TN, Killen JD. (1997). Do cigarette warning labels reduce smoking? Paradoxical effects among adolescents. Arch Pediatr Adolesc Med, 151(3): 267-72. | USA | Cohort analytic study | N=1749 (9th grades)  803 were observed for approx. 3 months. | Examine adolescents’ knowledge of HWMs and smoking behaviour. | Found an association between increased smoking and increased knowledge of HWMs. |
| CRÉATEC + Market Studies. Effectiveness of Health Warning Messages on Cigarette Packages in Informing Less-literate Smokers, Final Report. Prepared for Communication Canada, Dec 2003. | Canada | Focus group | 43 adult smokers; half with intentions to quit in next 6 months | Observe what less-literate smokers learn from HWMs. | None of the HWMs were understood by most participants in the way desired by Health Canada. |
| Malouff J, Gabrilowitz D, Schutte N. Readibility of health warnings on alcohol and tobacco products. Am J Public Health 1992; 82(3): 464. | USA | Literacy level tests | Not applicable | To determine the readability of government-required warnings on alcohol products, cigarette packages, and smokeless tobacco containers. | The alcohol and cigarette HWMs required college student/graduate reading levels. The smokeless labels required middle or high school reading levels. |
| Siahpush M, McNeill A, Hammond D, Fong GT. Socioeconomic and country variations in knowledge of health risks of tobacco smoking and toxic constituents of smoke: Results from the 2002 International Tobacco Control Policy Evaluation Survey. Tob Control 2006; 15(Suppl III): iii65–iii70. | Australia, Canada, UK, USA | Cross-sectional survey from 4 countries | 9058 adult smokers 18 years of age or older (2214 in Canada, 2138 in USA, 2401 in UK, 2305 in Australia) | Examine socioeconomic and country variations in smokers’ knowledge of health risks of smoking. | Higher education and income were associated with greater knowledge; awareness of harms was highest in Canada and lowest in the UK. |
| Brubaker RG, Mitby SK. Health-risk warning labels on smokeless tobacco products: are they effective? Addict Behav 1990; 15(2): 115-8. | USA | Cross-sectional survey | 192 students (aged 14-18) | To investigate the impact of smokeless tobacco warning labels on a group of adolescents who were not regular smokeless tobacco users. | Fewer than half (43%) remembered seeing HWMs, and 32.3% recalled the specific HWM. Males significantly better at recall. Analysis showed that the HWMs had no effect on ratings of future use. |
| Thrasher JF, Rousu MC, Ocampo-Anaya R, Reynales-Shigematsu LM, Arillo-Santillán E, Hernández-Ávila M. Estimating the impact of graphic warning labels on cigarette packs: The auction method. Salud Publica Mex 2006;48 Suppl 1:S155-66. | Mexico | Experiment | 89 adult smokers | Evaluate impact of pictorial HWMs using an auction method. | Smokers bid 17% less on packs with pictorial HWMs than packs with a text warning. |
| Stark E. Kim, A, Miller C, Borgida E. Effects of Including a Graphic Warning Label in Advertisements for Reduced-Exposure Products: Implications for Persuasion and Policy. *Journal of Applied Social Psychology* 2008; 38(2): 281–293. | USA | Experiment | N=92 undergraduate students (age 18-60; M=23) (24 smokers) | Examine how college-age smokers and non-smokers respond to advertisements that include a graphic picture in the warning label. | Including a graphic picture lowered ratings of: appeal, trustworthiness and safety of the product, and interest in trying the product. |
| Goldberg ME, Liefeld J, Madill J, Vredenburg H. The effect of plain packaging on response to health warnings. Am J Public Health 1999;89:1434–35. | Canada | Experiment | N=401, aged 14-17, smokers or open to trying cigarettes in the next year | Examine the effect of plain packaging on HWM recall. | Recall for 2 out of 3 warnings tested improved when subjects viewed plain packs. |
| Beede P, Lawson R. The effect of plain packages on the perception of cigarette health warnings. Public Health 1992;106(4):315–22. | New Zealand | Focus groups | N=568 (Mean age=13) | To test recall of HWMs and non-image elements in the presence of plain packaging. | More HWM information was recalled when participants’ viewed plain packs, regardless of familiarity. |
| Cecil H, Evans RI, Standley MA. Perceived believability among adolescents of health warning labels on cigarette packs. *Journal of Applied Social Psychology* 1996; 26: 502-519. | USA | Cross-sectional survey | N=691, grades 5-12 (232 smokers, 96 ex-smokers, 361 nonsmokers) | Extent to which adolescents believe HWMs on cigarette packs and the relationship of smoking status and gender to believability ratings. | Smokers reported significantly less belief in the validity of 3 out of 4 of the HWMs compared with non-smokers. |
| Angus Reid. Canadians Welcome New Graphic Warnings on Cigarette Packages. January 2011. Available at: <http://www.angus-reid.com/wp-content/uploads/2011/01/2011.01.10_Tobacco_CAN.pdf> (accessed 20 January2011) | Canada | Survey | 1,022 Canadian adults (commercial panel) | Support for health warnings and perceived effectiveness of new warnings | 82% supported having health warnings on tobacco products. 60% thought the new more graphic images that will be featured in cigarette packages were “about right”. 48% thought the images would be effective in convincing smokers to quit. |
| Les Études de Marche Createc. Health Warning Messages on Smokeless Tobacco, Cigars and Pipe Products A Qualitative Study with Consumers. Prepared for Health Canada Tobacco Control Programme. April 2003. | Canada | Focus group | 9 focus groups with 70 consumers of tobacco, cigars and pipes, aged 16-60+. | To assess the impact on consumers of the current cigar, pipe and smokeless tobacco health warning messages. | Current HWMs on cigar, pipe and smokeless products have worn out or have minimal impact; smokeless users felt most strongly addicted to nicotine. |
| Environics Research Group. Testing of Mock-ups of Health Warning Messages and Warning Notices on Tobacco Product Advertisements for Smokeless Tobacco. March, 2007. Prepared for Health Canada. Available at: <http://www.tobaccolabels.ca/healt/canada2007~2> (accessed 12 April 2010) | Canada | Focus group | 28 focus groups with 5-10 participants per group. | Assess effectiveness of HWMs on smokeless tobacco packages. | Almost all participants could spontaneously recall at least one HWM; some said HWMs made them reconsider using the product. Concerns over size and clarity of text; personal testimonials suggested. |
| Callery W, Hammond D, O’Connor RJ, Fong GT. The appeal of smokeless tobacco products among young Canadian smokers: the impact of pictorial health warnings and relative risk messages. Nicotine and Tobacco Research; In Press. | Canada | Between subjects experiment | 611 young adult smokers (aged 18-30) | Measures of perceived risk, brand appeal, and intentions to try smokeless products. | Pictorial HWLs increased perceptions of risk including the beliefs that smokeless products were equally harmful as cigarettes compared to no health warnings or a text only warning. Pictorial warnings decreased smokers’ willingness to try smokeless products, whereas text warnings did not. Adding a relative risk message communicating the lower risk of smokeless products compared to cigarettes increased willingness to try smokeless products when added to text warnings, but decreased willingness to try even further when added to pictorial warnings. |
| Terry-McElrath Y, Wakefield M, Ruel E, et al. The effect of antismoking advertisement executional characteristics on youth comprehension, appraisal, recall, and engagement. J Health Commun. 2005; 10(2):127-43. | USA | Within subject repeated measures design | 278 youth in grades 8, 10, and 12 who were neither confirmed non-smokers nor regular smokers | Examine antismoking advertising characteristics and how they affect youth. | Ads using “personal testimonial” and “visceral negative” characteristics had the strongest effect on youth appraisal, recall, and level of engagement. |
| Wakefield M, Durrant R, Terry-McElrath Y, et al. Appraisal of anti-smoking advertising by youth at risk for regular smoking: a comparative study in the United States, Australia, and Britain. Tob Control. 2003 Sep;12 Suppl 2:ii82-6. | USA, Australia, UK | Within subject repeated measures design | 615 youths who were experimenting with smoking orwere susceptible non-smokers | To compare how youth in the US, Australia, and the UK appraise anti-smoking advertisements with different characteristics. | All youth responded similarly to the ads; adverts with visceral negativeor personal testimonial characteristics were appraisedmore positively by youths and were more likely to be recalled,thought about, and discussed at follow up one week later. |
| de Wit JBF, Das E, Vet R. What Works Best: Objective Statistics or a Personal Testimonial? An Assessment of the Persuasive Effects of Different Types of Message Evidence on Risk Perception.Health Psychology 2008; 27(1): 110–115. | Netherlands | Experiment (online) | N=118 at-risk men for infection of hepatitis B virus (HBV) | Compare perceptions of personal risk when given different types of persuasive evidence. | Narrative evidence (i.e., a person account) increased perceptions of risk and intention to obtain the vaccination shot again HBV. |
| Slater, M. D., & Rouner, D. (1996). Value-affirmative and value-protective processing of alcohol education messages that include statistical evidence or anecdotes. *Communication Research, 23,* 210–235. | USA | Experiment | N=218 undergraduates (Mean age=20) | Examine how participants’ process value-relevant information presented with statistical evidence or anecdotes. | When the message was value-congruent, statistical evidence was rated more believable and effective, anecdotal evidence had no effect. The reverse was true when the message was value-incongruent. |
| Broemer, P. (2004). Ease of imagination moderates reactions to differently framed health messages. *European Journal of Social Psychology, 34,* 103–119. | Germany | Study 1-3: Experiment | Study 1: n=20 male students (mean age=23.5)  Study 2: n=60 female students (mean age=23.2)  Study 3: n=144 university students (mean age=24.7) | To test the hypothesis that the subjective ease of symptom imagination moderates the impact of differently framed messages on attitudes toward performing health behaviours. | Study 1: Negatively-framed messages were more persuasive when symptom imagination was easy; positively-framed messages were more persuasive when symptom imagination was difficult.  Study 2: Arguments were perceived as more convincing in the congruent conditions and convincingness partially mediated the influence of congruency.  Study 3: There was a stronger impact of ease of imagination when relevance was low rather than high. |
| Devlin E. Eadie D. Stead M. Evans K.. Comparative study of young people response to anti-smoking messages. International Journal of advertising 2007, 26(1): 99-128. | UK | Focus groups | 12 focus groups and 18 friendship pairs (aged 11-14; 50% smokers, 50% experimental smokers) | Examine adolescents’ attitudes toward smoking, and responses to different anti-smoking messages. | No single anti-smoking message is likely to have universal appeal; responses are mediated by values attached to smoking. |
| Kristal, A.R., Levy, L., Patterson, R.E., Li, S.S. and White, E., 1998. Trends in food label use associated with new nutrition labeling regulations. American Journal of Public Health, 88, 1212–1215. | USA | Repeat cross-sectional survey | Time 1: n=1001  Time 2: n=1450 | Compare the use of food labels before and after implementation of new FDA regulations in 1994. | Women’s use of food labels increased by 8.5 percentage points, and men’s by 11.3 percentage points. 70% still want labels to be easier to understand. |