

[Home](#) > [Journal](#) > [Biomedical & Life Sciences](#) | [Medicine & Healthcare](#) > [OJPM](#)[Indexing](#) [View Papers](#) [Aims & Scope](#) [Editorial Board](#) [Guideline](#) [Article Processing Charges](#)[OJPM](#) > [Vol.2 No.4, November 2012](#)

Mode of travel and the decision to allow children to walk or bike to schools—The Abu Dhabi experience

PDF (Size: 165KB) PP. 514-527 DOI: 10.4236/ojpm.2012.24071

Author(s)

Masood A. Badri, Abdulla M. Ustadi, Lynne Pierson, Mubarak Al Dramaki

ABSTRACT

The study investigates school travel to and from schools as perceived by parents in Abu Dhabi, United Arab Emirates. Far fewer children are cycling or walking to school, and more and more are being driven to school by car. Traffic conditions, environmental factors, distance to school, road's infrastructures, walking or biking with groups, schools efforts to educate children about active travel, and preferences of parents to accompany children to school were significantly perceived as important. The absence of active travel culture in the community was seen as a significant factor. Parent's gender, child's gender, child's grade level, number of cars owned by the family, nationality and number of children were significantly associated with parents' decisions to allow active travel to school. Results show that Abu Dhabi must establish aggressive strategic plans to promote active-commuting to school as the main mode of transportation. Current conditions in Abu Dhabi City are not conducive to active travel to school.

KEYWORDS

Mode of Travel; Active Travel to School; Factors Affecting Active Travel; Walking to School; Biking to School; Abu Dhabi

Cite this paper

Badri, M., Ustadi, A., Pierson, L. and Dramaki, M. (2012) Mode of travel and the decision to allow children to walk or bike to schools—The Abu Dhabi experience. *Open Journal of Preventive Medicine*, 2, 514-527. doi: 10.4236/ojpm.2012.24071.

References

- [1] Mota, J., Almeida, M., Santos, P. and Ribeiro, J. (2005) Perceived neighborhood environments and physical activity in adolescents. *Preventive Medicine*, 41, 834-836. doi:10.1016/j.ypmed.2005.07.012
- [2] Mota, J., Gomes, H., Almeida, M., Ribeiro, J., Carvalho, J. and Santos, M. (2007) Active versus passive transportation to school—Differences in screen time, socio-economic position and perceived environmental characteristics in adolescent girls. *Annals of Human Biology*, 34, 273-282. doi:10.1080/03014460701308615
- [3] Andersen, L., Harro, M. and Sardinha, L. (2006) Physical activity and clustered cardiovascular risk in children: A cross-sectional study (The European Youth Heart Study). *Lancet*, 368, 299-304. doi:10.1016/S0140-6736(06)69075-2
- [4] Bringolf-Isler, B., Grize, L., M?der, U., Ruch, N., Sennhauser, F. and Braun-Fahrlander, C. (2008) Personal and environmental factors associated with active commuting to school in Switzerland. *Preventive Medicine*, 46, 67-73. doi:10.1016/j.ypmed.2007.06.015
- [5] Staunton, C., Hubsmith, D. and Kallins W. (2003) Promoting safe walking and biking to school: The marin county success story. *American Journal of Public Health*, 93, 1431-1434. doi:10.2105/AJPH.93.9.1431
- [6] Cooper, A., Andersen, L., Wedderkopp, N., Page, A. and Froberg, K. (2005) Physical activity levels of children who walk, cycle, or are driven to school. *American Journal of Preventive Medicine*, 29, 179-184. doi:10.1016/j.amepre.2005.05.009

[OJPM Subscription](#)[Most popular papers in OJPM](#)[About OJPM News](#)[Frequently Asked Questions](#)[Recommend to Peers](#)[Recommend to Library](#)[Contact Us](#)

Downloads: 43,583

Visits: 126,945

[Sponsors >>](#)

- [7] Boarnet, M., Anderson, C., Day, K., McMillan, T. and Alfonzo, M. (2005) Evaluation of the California safe routes to school legislations: Urban form changes and children' s active transportation to school. *American Journal of Preventive Medicine*, 28, 134-140. doi:10.1016/j.amepre.2004.10.026
- [8] Cooper, A., Page, A., Foster, L. and Qahwaji, D. (2003) Commuting to school: Are children who walk more physically active? *American Journal of Preventive Medicine*, 25, 273-276. doi:10.1016/S0749-3797(03)00205-8
- [9] Department of the Environment, Transport and the Regions (DETR) (1998) Transport statistics report, national travel survey 1995/97.
- [10] Sleaf, M. and Warburton, P. (1993) Are primary school children gaining heart health benefits from their journeys to school? *Child Care Health Development*, 19, 99-108. doi:10.1111/j.1365-2214.1993.tb00717.x
- [11] Sustrans, S. (1999) Safe routes to schools (Bristol: Sustrans), information sheet, FS01.
- [12] Transportation Alternatives (2002) The 2002 summary of safe routes to school pro-grams in the United States. Transportation Alternatives, New York.
- [13] Tudor-Locke, C., Ainsworth, B. and Popkin, B. (2001) Active commuting to school an over-looked source of children' s' physical activity? *Sports Medicine*, 31, 309-313.
- [14] Seaton, J. and Wall, S. (2001) A summary of Walkers and walking in the Perth metropolitan region. *Walking in the 21st Century*, Perth.
- [15] Kowey, B. (1999) The journey to school: Making it safer by reducing traffic at school sites and increasing pedestrian and driver education opportunities. Proceedings of the 11th Canadian Multidisciplinary Road Safety Conference, Halifax, 9-12 May 1999, 222-229.
- [16] Rojas-Guyler, L., Sparks, J. and King, K. (2007) School principals' perceptions of students walking and bicycling to school. *Californian Journal of Health Promotion*, 5, 51- 61.
- [17] Pabayo, R. and Gauvin, L. (2008) Proportions of students who use various modes of transportation to and from school in a representative population-based sample of children and adolescents, 1999. *Preventive Medicine*, 46, 63-66. doi:10.1016/j.ypped.2007.07.032
- [18] Sirard, J., Riner, Jr., W., McIver, K. and Pate, R. (2005) Physical activity and active commuting to elementary school. *Medicine and Science in Sports and Exercise*, 37, 2062-2069. doi:10.1249/01.mss.0000179102.17183.6b
- [19] Carlin, J., Stevenson, M., Roberts, I., Bennett, C., Gelman, A. and Nolan, T. (1997) Walking to school and traffic ex-posure in Australian children. *Aust. New Zealand Journal of Public Health*, 21, 286-292. doi:10.1111/j.1467-842X.1997.tb01701.x
- [20] Ham, S., Macera, C. and Lindley, C. (2005) Trends in walking for transportation in the United States, 1995 and 2001. *Pre-venting Chronic Disease*, 2, A14.
- [21] Hillman, M., Adams, J. and Whitelegg, J. (1990) One false move: A study of children' s independent mobility. PSI Publishing, London.
- [22] Bricker, S., Kanny, D., Mellinger-Birdson, A., Powell, K. and Shisler, J. (2002) School transportation modes—Georgia. *Morbidity and Mortality Weekly Report*, 51, 704-705.
- [23] Salmon, J., Timperio, A., Cleland, V. and Venn, A. (2005) Trends in children' s physical activity and weight status in high and low socio-economic status areas of Melbourne, Victoria, 1985-2001. *New Zealand Journal of Public Health*, 29, 337-342. doi:10.1111/j.1467-842X.2005.tb00204.x
- [24] Cooper, A., Wedderkopp, N., Wang, H., Andersen, L., Froberg, K. and Page, A. (2006) Active travel to school and cardi-ovascular fitness in Danish children and adolescents. *Medical Science and Sports Exercise*, 38, 1724-1731. doi:10.1249/01.mss.0000229570.02037.1d
- [25] Roberts, I., Carlin, J., Bennett, C., Bergstrom, E., Guyer, B. and Nolan, T. (1997) An international study of the exposure of children to traffic. *Injury Prevention*, 3, 89-93. doi:10.1136/ip.3.2.89
- [26] Hillman, M., Adams, J. and Whitelegg, J. (1990) One false move: A study of children' s independent mobility Policy Studies Institute, London.
- [27] Dellinger, A. (2005) Barriers to children walking to or from school—United States, 2004. *Morbidity and Mortality Weekly Report*, 54, 949-952.

- [28] Department for Transport (2006) Transport statistics bulletin: National travel survey: 2005. Department of Transport, London.
- [29] Biddle, S., Gorely, T., and Stensel, D. (2004) Health-enhancing physical activity and sedentary behaviour in children and adolescents. *Journal of Sports Science*, 22, 679- 701. doi:10.1080/02640410410001712412
- [30] Tudor-Locke, C., Ainsworth, B.E., Adair, L. and Popkin, B.M. (2003) Objective physical activity of Filipino youth stratified for commuting mode to school. *Medical Science Sports Exercise*, 35, 465-471. doi:10.1249/01.MSS.0000053701.30307.A6
- [31] Ziviani, J., Scott, J. and Wadley, D. (2004) Walking to school: Incidental physical activity in the daily occupations of Australian children. *Occupational Therapy International*, 11, 1-11. doi:10.1002/oti.193
- [32] Steinbeck, K. (2001) The importance of physical activity in the prevention of overweight and obesity in childhood: A review and an opinion. *Obesity Reviews*, 2, 117-130. doi:10.1046/j.1467-789x.2001.00033.x
- [33] Kirby, J. and Inchley, J. (2008) Active travel to school: Views of 10-13 year old schoolchildren in Scotland. *Health Education*, 109, 169-183. doi:10.1108/09654280910936611
- [34] Saksvig, B., Ca-tellier, D., Pfeiffer, K., Schmitz, K., Conway, T., Going, S., Ward, D., Strikmiller, P. and Treuth, M. (2007) Travel by walking before and after school and physical activity among adolescent girls. *Archives of Pediatric and Adolescent Medicine*, 161, 153-158. doi:10.1001/archpedi.161.2.153
- [35] Rosenberg, D., Sal-li,s J., Conway, T., Cain, K. and McKen- zie, T. (2006) Active transportation to school over 2 years in relation to weight status and physical activity. *Obesity*, 14, 1771-1776. doi:10.1038/oby.2006.204
- [36] Riddoch, C., Andersen, L., Wedderkopp, Harro, M., Klas- son-Heggeb?, L., Sardinha, L., Cooper, A. and Ekelund, U. (2004) Physical activity levels and patterns of 9 and 15 year old European children. *Medical Science Sport Exer- cise*, 36, 86-92. doi:10.1249/01.MSS.0000106174.43932.92
- [37] Tudor-Locke, C., Neff, L., Ainsworth, B., Addy, C. and Popkin, B. (2002) Omission of active commuting to school and the prevalence of children' s health-related physical activity levels: The Russian longitudinal monitoring study. *Child Care Health Development*, 28, 507-512. doi:10.1046/j.1365-2214.2002.00295.x
- [38] Metcalf, B., Voss, L., Jeffery, A., Perkins, J. and Wilkin, T. (2004) Physical activity cost of the school run: Impact on schoolchildren of being driven to school. *British Medical Journal*, 329, 832-833. doi:10.1136/bmj.38169.688102.F71
- [39] McMillan, T. (2003) Walking and urban form: Modeling and testing parental decisions about children' s travel. Unpublished Doctoral Dissertation, University of California, Irvine.
- [40] McMillan, T. (2007) The relative influence of urban form on a child' s trip to school. *Transportation Research Part A: Policy and Practice*, 41, 69-79. doi:10.1016/j.tra.2006.05.011
- [41] McMillan, T. (2005) Urban form and a child' s trip to school: The current lite-rature and a framework for future research. *Journal of Planning Literature*, 19, 440-456. doi:10.1177/0885412204274173
- [42] Schlossberg, M., Greene, J., Phillips, P., Johnson, B. and Parker, B. (2006) Effects of urban form and distance on travel mode. *Journal of the American Planning Association*, 72, 337-346. doi:10.1080/01944360608976755
- [43] Black, C, Collins, A. and Snell, M. (2001) Encouraging walking: The case of journey-to-school trips in compact urban areas. *Urban Studies*, 38, 1121-1141. doi:10.1080/00420980124102
- [44] Timperio, A., Ball, K., Salmon, J., Roberts, R., Giles-Corti, B., Simmons, D., Baur, L. and Crawford, D. (2006) Personal, family, social, and environmental correlates of active commuting to school. *American Journal of Preventive Medicine*, 30, 45-51. doi:10.1016/j.amepre.2005.08.047
- [45] Ewing, R., Scbroeer, W. and Greene, W. (2004) School location and student travel analysis of factors affecting mode choice. *Journal of the Transportation Research Board*, 1895, 55-63. doi:10.3141/1895-08
- [46] McMillan, T., Day, K. and Boarnet, M. (2006) Johnny can walk to school—Can Jane? Examining sex differ- ences in children' s active travel to school. *Children, Youth and Environment*, 16, 75-89.

- [47] Cohen, D., Ashwood, S. and Scott, M. (2006) Proximity to school and physical activity among middle school girls: The trial of activity for adolescent girls study. *Journal of Physical Activity and Health*, 3, S124-S133.
- [48] McDonald, N. (2007) Active transportation to school: Trends among US schoolchildren, 1969-2001. *American Journal of Preventive Medicine*, 32, 509-516. doi:10.1016/j.amepre.2007.02.022
- [49] Martin, S. and Carlson, S. (2005) Barriers to children walking to and from school: United States, 2004. *Journal of the American Medical Association*, 294, 2160-2162. doi:10.1001/jama.294.17.2160
- [50] McDonald, N. (2007) Travel and the social environment: evidence from Alameda county, California. *Transportation Research Part D: Transport and Environment*, 12, 53-63. doi:10.1016/j.trd.2006.11.002
- [51] Zhou, H., Yang, J., Hsu, P. and Chen, S. (2010) Factors affecting students' walking/biking rates: Initial findings from a safe route to school survey in Florida. *Journal of Transportation Safety & Security*, 2, 14-27. doi:10.1080/19439960903564819
- [52] Kerr, J., Rosen-berg, D., Sallis, J., Saelens, B., Frank, L. and Conway, T. (2006) Active commuting to school: Associations with environment and parental concerns. *Medicine and Science in Sports and Exercise*, 38, 787-794. doi:10.1249/01.mss.0000210208.63565.73
- [53] Merchant, A., Dehghan, M., Behnke-Cook, D. and Anand, S. (2007) Diet, physical activity, and adiposity in children in poor and rich neighbourhoods: A cross-sectional comparison. *Nutrition Journal*, 6. www.nutritionj.com/content/6/1/1
- [54] Ewing, R., Forinash, C. and Schroeer, W. (2005) Neighbor-hood schools and sidewalk connections: What are the impacts on travel mode choice and vehicle emissions? *Transportation Research News*, 237, 4-10.
- [55] Joshi, M. S. and MacLean, M. (1995) Parental attitudes to children' s journeys to school. *World Transport Policy and Practice*, 1, 29-36. doi:10.1108/13527619510102016
- [56] Tranter, P. and Doyle, J. (1996) Reclaiming the residential street as play space. *International Play Journal*, 4, 81-97.
- [57] Tranter, P. and Pawson, E. (2001) Children' s access to local envi-ronments: A case study of Christchurch, New Zealand. *Local Environment*, 6, 27-48. doi:10.1080/13549830120024233
- [58] Martin, S. and Carlson, S. (2005) Barriers to children walking to or from school—United States, 2004. *Morbidity and Mortality Weekly Report*, 54, 949-952.
- [59] Parisi, D. and Hondorp, B. (2005) Transportation professionals get involved with safe routes to school. *Institute of Transportation Engineers Journal*, 75, 41-46.
- [60] Vincent, J. (2006) Public schools as public infrastructure: Roles for planning researchers. *Journal of Planning Education and Research*, 25, 433-437. doi:10.1177/0739456X06288092
- [61] Chung, C. (2002) Using public schools as community-development tools: Strategies for community-based developers. *Joint Center on Housing Studies of Harvard University and Neighborhood Reinvestment Corporation*, Cambridge.
- [62] Saelens, B., Sallis, J. and Frank, L. (2003) Environmental correlates of walking and cycling: Findings from the transportation, urban design, and planning literatures. *Annals of Behavioral Medicine*, 25, 80-91. doi:10.1207/S15324796ABM2502_03
- [63] Ridgewell, C., Sipe, N. and Buchanan, N. (2009) School travel modes: Factors influencing parental choice in four Brisbane schools. *Urban Policy and Research*, 27, 43-57. doi:10.1080/08111140802304793
- [64] Braza, M., Shoe-maker, M. and Seeley, A. (2004) Neighbor- hood design and rates of walking and biking to elemen- tary school in thirty-four California communities. *Ameri- can Journal of Health Promotion*, 19, 128-136. doi:10.4278/0890-1171-19.2.128
- [65] Catford, J. and Caterson, I. (2003) Snowballing obesity: Australians will get run over if they just sit there. *Medical Journal of Australia*, 179, 577-579.
- [66] O' Brien, C. (2003) Transpor-tation that' s actually good for the soul. *National Center for Bicycling and Walking (NCBW) (Canada)*, 54, 1-13.

- [67] Morris, J., Wang, F. and Lilja, L. (2001) School children' s travel patterns: A look back and a way forward. 24th Australasian Transport Research Forum, Hobart.
- [68] Engwicht, D. (1992) Towards an eco-city: Calming the traffic. Envirobook, Sydney.
- [69] Collins, D. and Kearns, R. (2001) The safe journeys of an enterprising school: Negotiating landscapes of opportunity and risk. *Health Place*, 7, 293-306. doi:10.1016/S1353-8292(01)00021-1
- [70] Tranter, P. (1993) Children' s Mobility in Canberra: Confinement or Independence? Monograph Series No. 7 (Canberra: Department of Geography and Oceanography, University College, Australian Defense Force Academy, University of New South Wales).
- [71] Deilinger, A. and Staunton, C. (2002) Barriers to children walking and bicycling to school: United States 1999. *Morbidity and Mortality Weekly*, 51, 701-704.
- [72] Merom, D., Tudor-Locke, C., Bauman, A. and Rissel, C. (2005) Active commuting to school among NSW primary school children: Implications for public health, *Health Place*.
- [73] Merom, D., Tudor-Locke, C., Bauman, A. and Rissel, C. (2006) Active commuting to school among NSW primary school children: Implications for public health. *Health Place*, 12, 678-687. doi:10.1016/j.healthplace.2005.09.003
- [74] DiGiuseppi, C., Robert, I., Li, L. and Allen, D. (1998) Determinants of car travel on daily journeys to school: Cross sectional survey of primary school children. *British Medical Journal*, 316, 1426. doi:10.1136/bmj.316.7142.1426
- [75] McDonald, N. (2008a) Children' s mode choice for the school trip: The role of distance and school location in walking to school. *Transportation*, 35, 23-35. doi:10.1007/s11116-007-9135-7
- [76] McDonald, N. (2008b) Critical factors for active transportation to school among low-income and minority students evidence from the 2001 national household travel survey. *American Journal of Preventive Medicine*, 34, 341-344. doi:10.1016/j.amepre.2008.01.004
- [77] Martin, S., Lee, S. and Lowry, R. (2007) National prevalence and Correlates of walking and bicycling to school. *American Journal Preventive Medicine*, 33, 98-105. doi:10.1016/j.amepre.2007.04.024
- [78] Evenson, K., Huston, S., McMillen, B., Bors, P. and Ward, D. (2003) Statewide prevalence and correlates of walking and bicycling to school. *Archives of Pediatrics & Adolescent Medicine*, 157, 887-892.
- [79] Yung, J. Wearing, S. and Hills, A. (2008) Child transport practices and perceived barriers in active commuting to school. *Transportation Research: Part A, Policy and Practice*, 42, 895-900. doi:10.1016/j.tr.2007.12.007
- [80] Yarlagadda, A. and Sivaramakrishnan, S. (2007) Modeling children' s school travel mode and parental escort decisions. The 86th Annual Meeting of the Transportation Research Board, Transportation Research Board of the National Academies, Washington, DC.
- [81] Zhao, F., Chow, L.-F., Li, M.-T., Ubaka, L. and Gan, A. (2003) Forecasting transit walk accessibility: A regression model alternative to the buffer method. *Transportation Research Record*, 1835, 34-41. doi:10.3141/1835-05
- [82] Grize, L., Bringolf-Isler, B., Martin, E. and Braun-Fahrlander, C. (2010) Trend in active transportation to school among Swiss school children and its associated factors: Three cross-sectional surveys 1994, 2000 and 2005. *International Journal of Behavioral and Nutrition Activity*, 7, 1-8.
- [83] Salvesen, D. and Hervey, P. (2003) Good schools—Good neighborhoods: The impacts of state and local school board policies on the design and location of schools in North Carolina (CURS Report No. 2003-03). Center for Urban and Regional Studies, University of North Carolina at Chapel Hill, Chapel Hill.
- [84] Spallek, M., Turner, C., Spinks, A., Bain, C. and McClure, R. (2006) Walking to school: Distribution by age, sex and socio-economic status. *Health Promotion Journal of Australia*, 17, 134-138.
- [85] Alexander, L., Inchley, M., Todd, J., Currie, D., Cooper, A. and Currie, C. (2005) The broader impact of walking to school among adolescents: Seven day accelerometer based study. *British Medical Journal*, 33, 1061-1062. doi:10.1136/bmj.38567.382731.AE

