



This item was submitted to Loughborough's Institutional Repository (<https://dspace.lboro.ac.uk/>) by the author and is made available under the following Creative Commons Licence conditions.

 **creative commons**
C O M M O N S D E E D

Attribution-NonCommercial-NoDerivs 2.5

You are free:

- to copy, distribute, display, and perform the work

Under the following conditions:

 **Attribution.** You must attribute the work in the manner specified by the author or licensor.

 **Noncommercial.** You may not use this work for commercial purposes.

 **No Derivative Works.** You may not alter, transform, or build upon this work.

- For any reuse or distribution, you must make clear to others the license terms of this work.
- Any of these conditions can be waived if you get permission from the copyright holder.

Your fair use and other rights are in no way affected by the above.

This is a human-readable summary of the [Legal Code \(the full license\)](#).

[Disclaimer](#) 

For the full text of this licence, please go to:
<http://creativecommons.org/licenses/by-nc-nd/2.5/>

Promoting passenger comfort and wellbeing in the air: an examination of the in-flight health advice provided by international airlines.

Lucy Budd*, Adam Warren** and Morag Bell**

* Transport Studies Group

Department of Civil and Building Engineering

Loughborough University

Loughborough

Leicestershire

LE11 3TU

UK

E-mail: L.C.S.Budd@lboro.ac.uk (Corresponding author)

** Department of Geography

Loughborough University

Loughborough

Leicestershire

LE11 3TU

UK

E-mail: M.Bell@lboro.ac.uk; A.P.Warren@lboro.ac.uk

Keywords: passenger health advice, in-flight magazines, international airlines.

Abstract

Following recent, well-publicised, cases of airline passengers developing deep vein thromboses (DVT) and contracting infectious diseases during flights, airlines' provision of in-flight customer health advice has come under increased scrutiny. By means of a manifest content analysis of the information that is provided in 50 international airlines' in-flight magazines, this paper examines the nature and presentation of the health advice that is supplied and comments on the different approaches individual airlines adopt.

1. Introduction

As recent reports of airline passengers developing deep vein thromboses (DVT) and contracting infectious diseases during flights has shown, flying can adversely affect the health and wellbeing of passengers. Aside from well-founded concerns surrounding aviation's role in the global transmission of infectious disease, medical research has identified a number of physical and psychological conditions, including jetlag, DVT, airsickness, aerophobia, dehydration, earache and sinus pain, thermal and ocular discomfort, and a range of cardio-respiratory complaints that result from (or are exacerbated by) flying (Backman and Haglight, 2000; Brown et al., 2001; Dawood, 2003; Foreman, 2003; Waterhouse et al, 2003; Silverman and Gendreau, 2009).

While many of the physical challenges flying poses to the human body have been recognised since the mid-1940s, rising numbers of airline passengers combined with a growing elderly and overweight population mean the medical problems associated with immobility, dehydration, and lower atmospheric pressure, are becoming of increased concern to airlines. In addition to causing distress to passengers and crew, in-flight medical emergencies may necessitate costly and time consuming diversions.

Many airlines have installed defibrillators and enhanced air filtration systems in their aircraft, contracted third-party medical providers to supply, via direct radio link, in-flight diagnostic and medical advice to pilots and cabin crew, and have variously promoted certain mitigation measures, including seat-based exercises and the use of compression stockings. In 2000, a report by the UK House of Lords Select Committee recommended that airlines provide passengers with a pre-flight health briefing that is comparable to the safety briefing as well as carry a standardised health information card in the seat pockets of their aircraft (House of Lords, 2000). Such provision, the report suggests, would help address the present situation in which individual airlines are free to offer as much or as little health advice as they wish.

In order to determine the nature and presentation of the existing health advice airlines provide for their passengers, this paper performs a manifest content analysis of single issues of the in-flight magazines of 50 different international airlines. Unlike competing electronic forms of in-flight ‘infotainment’, printed in-flight magazines are produced by virtually every major airline around the world and are accessible to passengers at all times during a flight, either from the seat-pocket in front of them or via the cabin crew. However, despite the ubiquity of these publications and their familiarity to all those who fly, academic studies of in-flight magazines remain rare. Where they have occurred, research has tended to focus on the semiotic branding strategies these magazines employ (see, for example, Thurlow and Jaworski, 2003 and Small et al, 2008) and we are not aware of any research that has examined the ‘infotainment’ sections of these publications or the manifest content of any health advice they contain. This is an unfortunate omission as in-flight magazines represent an important source of passenger information and their contents reflect issues of contemporary interest and concern.

2. Methodology

In order to gain an appreciation of the health advice different airlines offer, single issues of 50 international airlines’ in-flight magazines, published between May 2003 and May 2010, were examined (Table 1). The use of in-flight magazines as a source of empirical data inevitably presents challenges of selection and interpretation and, although the sample was global in scope and incorporated a number of different airline business models, the choice of examples was shaped by the availability of surviving material. A manifest content analysis (MCA) of each individual in-flight magazine was then performed to determine the presence, presentation, and content of any health advice. Manifest content analysis allows for ‘the objective, systematic, and quantitative description of the manifest content of communication’ (Berelson, 1952, 18) and enables the explicit (or surface) content of different types of communication to be evaluated and recorded. A coding frame, containing 29 categories which recorded both the textual content and any illustrative material which accompanied any passenger health advice, was developed as a result of an initial scoping study of 20 randomly selected issues.

Table 1: The airlines and in-flight magazines surveyed for this research

Airline	Region	Magazine title	Date
Air Canada	N America	enroute	September 2007
Air France	Europe	Magazine	December 2007

Air Mauritius	Africa	Islander	January-March 2010
Air New Zealand	Australasia	Magazine	January 2005
Alitalia	Europe	Ulisse	June 2007
All Nippon Airlines	Asia	Wingspan	May 2007
American Airlines	N America	American Way	June 15th 2008
Austrian Airlines	Europe	skylines	May-June 2008
Bangkok Airways	Asia	fahThai	January-February 2008
bmi	Europe	Voyager	January 2007
bmibaby	Europe	Yeah Baby!	June-July 2007
British Airways	Europe	High Life	April 2009
Brussels Airlines	Europe	b there!	December 2007
CAAC (China)	Asia	CAAC	Summer 2006
Cathay Pacific	Asia	Discovery	July 2008
Copa Airlines	C America	Panorama	October 2008
CSA Czech Airlines	Europe	Review	January-February 2008
Cubana	C America	Sol Y Sol	February 2006
Cyprus Airways	Europe	Sunset	January-March 2008
easyJet	Europe	EasyJet Inflight	June 2009
Egyptair	Africa	Horus	March-April 2007
Emirates	M East	Open Skies	November 2007
Etihad	M East	Etihadinflight	June 2008
Finnair	Europe	Blue Wings	May 2008
FlyBE	Europe	uncovered	Winter 2008
Icelandair	Europe	Atlantica	May-June 2007
Jet2	Europe	JetAway	April-May 2010
Kenya Airways	Africa	msafiri	February-April 2005
KLM	Europe	Holland Herald	September 2007
Korean Air	Asia	Morning Calm	October 2006
Lufthansa	Europe	Magazin	December 2008
Malaysia Airlines	Asia	Going Places	May 2004
Malev	Europe	Horizon	October 2006
Norwegian	Europe	Norwegian.no	Summer 2007
Qantas	Australasia	The Australian Way	June 2008
Qatar Airways	M East	Oryx	May 2008
Royal Brunei	Asia	Muhibah	May-June 2004
Ryanair	Europe	Ryanair Magazine	September-October 2008
SAS	Europe	Scanorama	October 2007
Silk Air (Singapore)	Asia	Silkwinds	December 2007
Singapore Airlines	Asia	Silverkriss	November 2007
Sterling	Europe	Sterling	May-June 2008
Swiss	Europe	Magazine	Winter 2008
TAP Air Portugal	Europe	Atlantis	March-April 2007
Thai	Asia	Sawasdee	February 2008
Thomsonfly	Europe	fly	Summer 2007
Turkish Airlines	Europe	Skylife	May 2007
United Airlines	N America	Hemispheres	May 2003
Welcome Air	Europe	Welcome in the air	Winter 2006/07
XL Airways	Europe	Altitude	Winter 2006/07

Of the 50 in-flight magazines that were examined, 36 belonged to ‘legacy’ or full service carriers, eight to low-cost operators, four (including Welcome Air of Austria) to regional airlines, and two (XL and Thomsonfly) to hybrid charter/low-cost operators. In terms of geographic origin, 27 of the airlines originated in Europe, 10 in Asia/Far East, and the remainder from Africa (3), the Middle East (3), North America (3), Australasia (2), and Central/South America (2). Of the 50 magazines, 27 were published in English only, 17 were bilingual (in each case English plus the native language), and five were multi-lingual and published in at least three world languages.

3. Principal findings

Of the 50 magazines surveyed, 17 titles (34%) did not contain any form of in-flight passenger health advice. Of the 33 that did, the physical location, space, content, and presentation of the advice varied considerably. The majority (31 out of 33) positioned the health advice at or near the back of the magazine alongside other passenger information such as details about the in-flight entertainment system, aircraft fleet, route maps, airport diagrams, and customs and immigration requirements. Only two carriers, Cyprus Airways and Kenya Airways, positioned the passenger health information at or near the front of their magazines. While the majority of airlines (18/33) devoted an entire page of their in-flight magazine to passenger health advice, four carriers devoted two full pages, while that of seven operators occupied less than half a page.

In addition to determining the presence, location, and size of any health advice, the MCA also sought to uncover the nature of the health risks different airlines had identified as being potentially problematic. In every case, these ‘risks’ were associated with six particular characteristics of the airborne environment. The dangers posed by immobility and/or poor circulation (conditions which promote the formation of DVT) were the most common category and were explicitly cited in 18 magazines. Health risks associated with dehydration and jetlag were mentioned in 13 and 12 titles respectively, while discomfort resulting from cabin pressurisation, low humidity, airsickness, and cabin air quality were highlighted by relatively few titles (Table 2).

Table 2: Frequency with which particular ‘risks’ were mentioned

Risk	Frequency
Poor circulation/immobility (DVT)	18
Dehydration	13
Jetlag	12
Pressurisation	5
Low Humidity	4
Cabin Air Quality	1

Of the 33 magazines that contained some form of health advice, only 25 explicitly mentioned one or more of these risk factors. The remaining eight made no reference to specific health risks but offered generalised advice on the desirability of ‘taking care’ in the air. Of the 25 magazines that did mention specific risks, 13 discussed only one while the in-flight magazines of two long-haul carriers, Qantas and Cathay Pacific, mentioned all six. It could be argued that these differences reflect an

individual airline’s route network, with carriers who regularly perform long-haul sectors and cross multiple time-zones in the course of a single flight more likely to mention multiple risks than carriers which only perform short-haul services.

Interestingly (and irrespective of whether DVT was explicitly mentioned in the text), 32 of the 33 magazines that contained some form of passenger health advice described, in greater or lesser detail, a series of seated ‘aerobics’ exercises that passengers could perform to increase circulation and lessen the discomfort associated with long periods of immobility. 27 of these were accompanied by illustrations which usually took the form of Computer Generated Images (CGI) of adult (predominately, although not exclusively, female and white) passengers performing shoulder rolls, ankle rotations, and other seated exercises. Several airlines were keen to reassure their passengers that their exercise regimes had been devised or endorsed by a registered medical practitioner and thus were safe, appropriate, and medically beneficial. Two airlines had even obtained ‘sponsorship’ for their in-flight exercise programme from health spas and ‘wellness’ centres.

In addition to identifying specific ‘risk’ factors, many airlines also offered more general advice about wellbeing in the air and made suggestions as to how individual passengers could lessen the physical effects of flying (Table 3). 22 carriers recommended that passengers should keep themselves hydrated with water or fruit juice to combat the relatively low cabin air humidity and 19 suggested that their customers might derive benefit from avoiding caffeinated or alcoholic drinks.

Table 3: Specific advice regarding passenger wellbeing in the air

Advice	Frequency
Keep hydrated	22
Avoid caffeinated/alcoholic drinks	19
Walk around the cabin	14
Eat small quantities of food	11
Wear comfortable clothing	8
Moisturise skin/lips	8
Remove contact lenses	8
Suck sweets (to reduce ear pain)	5
Wear compression stockings	4
Avoid tight clothing	3

14 airlines recommended that passengers should move around the cabin during the flight to avoid cramp and possible DVT and four of these operators advocated the use of compression stockings to promote venous circulation. 11 airlines advised their customers to only eat small quantities of food onboard, while four specifically suggested minimising salt and/or sugar intake. Eight of the 25 carriers who provided some form of passenger health advice suggested that passengers should wear comfortable clothing, regularly moisturise skin and lips and exchange contact lenses for conventional glasses, the latter to reduce the drying effects of low cabin air humidity and ocular discomfort.

While much of the health advice was largely generic, some carriers did offer very specific recommendations. Air Canada and Ethiad, for example, respectively advised their customers to avoid eating fatty foods or dairy products, while Finnair suggested that passengers should consume a minimum of two deci-litres of non-alcoholic drinks every hour. Others airlines advised that, for certain categories of ‘at risk’ traveller, including the elderly and those with poor circulation, the self-administration of some form of pre-flight or in-flight medication might be appropriate. Despite only operating short-haul intra-European services, Sterling, a former Danish low-cost airline, suggested that passengers take 100-125mg of aspirin on the day of travel to reduce the risk of thromboses while Qatar Airways suggested that passengers prone to sinus pain might obtain relief from over-the-counter decongestants. While it could be argued that such variations reflect the prominence each airline gives to the issue of passenger health, this claim must not be overstated. Indeed, the editorial position of the (often third party) publishing companies who edit and produce the magazines and commercial pressure to maximise advertising revenue and minimise the space given to non-revenue generating features are also likely to influence the provision of health advice.

4. Discussion and conclusion

While we appreciate that in-flight magazines are not the only source of health advice available to airline passengers, and that many carriers provide information in alternative formats on their websites and via their in-flight entertainment systems, magazines nevertheless remain one of the primary sources of flight-related information. The manifest content analysis of the health advice contained within single issues of a sample of 50 international airlines’ in-flight magazines revealed considerable variation in the content and presentation of health advice. Nearly one third of the in-flight magazines that were surveyed contained no health advice whatsoever, while the advice in those that did varied from short and generic descriptions of steps that could be taken to help preserve in-flight ‘wellness’ to detailed information on behavioural and nutritional strategies that could be adopted in an attempt to safeguard personal health and wellbeing. Interestingly, we found no clear relationship between an airline’s route network, brand proposition, or nationality and the nature of the in-flight health advice that was (or was not) provided.

References

- Backman, H. and Haglight, F. 2000. Air quality and ocular discomfort aboard commercial aircraft. *Optometry*. 71(10), 653-656.
- Berelson, B. 1952. *Content analysis in communication research*. Glencoe, IL, Free Press.
- Brown, T. P., Shuker, L. K., Rushton, L., Warren, F., and Stevens, J. 2001. The possible effects on health, comfort, and safety of aircraft cabin environments. *The Journal of the Royal Society for the Promotion of Health*. 121(3), 177-184.
- Dawood, R. 2003. Physiology of flying: Effects and consequences of the cabin environment in Bor, R. (Ed.) *Passenger Behaviour* Ashgate, Aldershot pp. 223-231.
- Foreman, E. I. 2003. Just Plane Scared? An Overview of fear of flying in Bor, R. (Ed.) *Passenger Behaviour* Ashgate, Aldershot pp.50-59.

- House of Lords. 2000. Select Committee on Science and Technology. Fifth Report. *Air Travel and Health*. Available online at <http://www.parliament.the-stationery-office.co.uk/pa/ld199900/ldselect/ldsctech/121/12101.htm>.
- Silverman, D. and Gendreau, M. 2009. Medical issues associated with commercial flights. *The Lancet*. June 13 373(9680), 2067-2077.
- Small, J., Harris, C., and Wilson, E. 2008. A Critical Discourse Analysis of In-flight Magazine Advertisements: The 'Social Sorting' of Airline Travellers? *Journal of Tourism and Cultural Change* 6(1), 17-38.
- Thurlow, C. and Jaworski, A. 2003. Communicating a global reach: Inflight magazines as a globalizing genre in tourism *Journal of Sociolinguistics* 7(4), 579-606
- Waterhouse, J., Reilly, T., and Edwards, B. 2003. Long haul flights, Travel fatigue, and Jet Lag in Bor, R. (Ed.) *Passenger Behaviour* Ashgate, Aldershot pp.246-260.

Acknowledgements

We would like to thank the two anonymous reviewers for their helpful comments on an earlier version of this paper.