Abstract Number	**P-2-09-32**
Presenter	Astrid Schilmann*, Horacio Riojas Rodríguez, Rogelio Pérez-Padilla, Isabelle Romieu, Rosario Fernández Plata, Brenda Carolina Romero Orellana, Víctor M Berrueta
Exposure	household air pollution
Health domains	respiratory disease
Type of research	cohort study

Women´s lung function decline after eight years of an efficient stove intervention

Background. A randomized controlled trial was conducted in the Central Mexican state of Michoacán to evaluate the health impact of the introduction of an efficient biomass stove Patsari in young Mexican women during 2005 and 2006. Actual use of the Patsari stove was associated with a lower FEV1 decline (31 mL) compared to the open fire use (62 mL) over 1 year of follow up. Aims. The aim of this study is to perform a longitudinal assessment of the lung function decline in women after eight years of the introduction of efficient biomass stoves in highland Michoacán, Mexico. Methods. We are performing a longitudinal study on the women cohort established during the previous study in the Purepecha region in the state of Michoacán, Mexico. Biomass smoke exposure is estimated by a questionnaire recalling open fire and stove use since 2005. Following the same standardized procedure as in the previous study, spirometry is conducted using portable battery-operated ultrasonic spirometer in accordance with the ATS/ERS recommendations. The longitudinal FEV1 regression slope is calculated with SPIROLA V3.0 software. The association between lung function decline by reported stove use is analyzed using linear regression models. Results. In a subsample of 37 women from Quinceo, the mean group slope is -19mL/year with an absolute within-person variation of 110 mL. Women mainly using an open fire have an excess lung function decline of -14 mL/year compared to those women mainly using the efficient stove (p=0.104) adjusting for height, FEV1 and age at baseline. Conclusions. This is the first study reporting the longitudinal assessment of the lung function decline (more than seven years of follow up) for women using fuelwood for cooking. These results for a subsample suggest the mid-term positive effect of the intervention.

Abstract Number	**P-2-12-01**
Presenter	Reuy-Lung Hwang*, Chen Chen-Peng, Feng-Yi Lin, Wen-Mei Shih, Kuo-Tsang Huang
Exposure	others
Health domains	no health domain
Type of research	others

Applicability of ASHRAE Standard 55 and EN 15251 Adaptive Thermal Comfort Models in Hot-and-Humid Climate

Background: The inclusion of adaptive thermal comfort model in the ASHRAE Standard 55 and EN 15251 exemplifies the increasing effort of improving indoor environmental quality in naturally ventilated buildings. However the applicability of these models in areas of hot-and-humid climate such as Taiwan has been only insufficiently validated. Aims: This study examined the boundaries of thermal comfort zones as predicted by the ASHRAE and EN models to those established by a field study conducted in Taiwan to examine the discrepancies between these models as well as between the model projection and field observation so to evaluate the models' local applicability. Methods: A field study was conducted to investigate the adaptive thermal comfort in 113 naturally ventilated classrooms of 14 schools in central Taiwan. For a total period of five months consisting of summer, autumn and winter conditions, questionnaire survey were performed to observe the actual thermal sensation of the students in relation to the thermal status in the ambient environment when the school was in session. The observed thermal acceptability was analyzed against those projected by the ASHRAE and EN models using local meteorological data. Results: Both the ASHRAE and EN models significantly underestimated the thermal acceptability of Taiwanese when the ambient temperature fell outside the range of approximately 20 to 30oC. When the upper limit of the comfort zones projected by these models was compared, the predictability of the ASHRAE model appeared to be less than that of the EN model in the warm condition. The EN comfort zones Category I and II were more consistent to field observations than the ASHRAE comfort zones 90 and 80%. Conclusions: When applied to specific regions the ASHRAE and EN adaptive comfort models should be first assessed for applicability and calibrated to accommodate regional differences in climate and in patterns of thermal adaptation.

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Basel, Switzerland 19-23 August 2013

Abstract Number : 3442 | ID : P-2-12-01

Applicability of ASHRAE Standard 55 and EN 15251 Adaptive Thermal Comfort Models in Hot-and-Humid Climate

Reuy-Lung, Hwang, National United University, Taiwan; Chen, Chen-Peng, China Medical University, Taiwan; Feng-Yi, Lin, National United University, Taiwan; Wen-Mei, Shih, National United University, Taiwan; Kuo-Tsang, Huang, National Taiwan University, Taiwan

Background: The inclusion of adaptive thermal comfort model in the ASHRAE Standard 55 and EN 15251 exemplifies the increasing effort of improving indoor environmental quality in naturally ventilated buildings. However the applicability of these models in areas of hot-and-humid climate such as Taiwan has been only insufficiently validated.

Aims: This study examined the boundaries of thermal comfort zones as predicted by the ASHRAE and EN models to those established by a field study conducted in Taiwan to examine the discrepancies between these models as well as between the model projection and field observation so to evaluate the models' local applicability.

Methods: A field study was conducted to investigate the adaptive thermal comfort in 113 naturally ventilated classrooms of 14 schools in central Taiwan. For a total period of five months consisting of summer, autumn and winter conditions, questionnaire survey were performed to observe the actual thermal sensation of the students in relation to the thermal status in the ambient environment when the school was in session. The observed thermal acceptability was analyzed against those projected by the ASHRAE and EN models using local meteorological data. Results: Both the ASHRAE and EN models significantly underestimated the thermal acceptability of Taiwanese when the ambient temperature fell outside the range of approximately 20 to 30oC. When the upper limit of the comfort zones projected by these models was compared, the predictability of the ASHRAE model appeared to be less than that of the EN model in the warm condition. The EN comfort zones Category I and II were more consistent to field observations than the ASHRAE comfort zones 90 and 80%.

Conclusions

: When applied to specific regions the ASHRAE and EN adaptive comfort models should be first assessed for applicability and calibrated to accommodate regional differences in climate and in patterns of thermal adaptation.

Environment and Health Basel, Switzerland 19-23 August 2013 Bridging South, North, East and West (http://ehp.niehs.nih.gov/ehbasel13)

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Environment and Health
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EHP is pleased to present the abstracts from the 2013 conference Environment and Health—Bridging South, North, East and West, held 19–23 August 2013 in Basel, Switzerland, and hosted by the Swiss Tropical and Public Health Institute. The conference was a joint meeting of the International Society for Environmental Epidemiology (ISEE) (http://www.iseepi.org/), the International Society of Exposure Science (ISES) (http://www.isesweb.org/), and the International Society of Indoor Air Quality and Climate (ISIAQ) (http://www.isiaq.org/). More than 1,700 participants from all continents and over 70 countries attended.

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Read how the organizers reduced the environmental footprint of the conference in "The Vision of a Green(er) Scientific Conference (http://ehp.niehs.nih.gov/1307302/)," an editorial in the August issue of *EHP* by Nino Künzli and Martin Röösli, conference chairs, and Martina S. Ragettli, chair of the local organizing committee "green club." For more information on the conference, be sure to check out the press release (http://www.swisstph.ch/news-archive/news/news/stimulating-and-successful-environment-and-health-conference-in-basel.html) and photos (http://www.flickr.com/photos/100678739@N07/sets/72157635192765479/) from the Swiss Tropical and Public Health Institute.

A complete catalog of all 1,975 abstracts is available as a 10.9 MB PDF file (http://ehp.niehs.nih.gov/ehbasel13/wp-content/uploads/2013/09/EHB13-Abstracts.pdf).

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