The Need for Gender Specific Tobacco Control Strategies
KAP Survey Findings on Environmental Tobacco Smoke Exposure among Women in the Reproductive Age Group

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ABSTRACT

Objective: *The study was done to assess knowledge, attitudes and practices of women within the child bearing age with regard to smoking and exposure to environmental tobacco smoke (ETS) on children's health.*

Subjects and Methods: *A cross-sectional study with quantitative and qualitative components was designed to collect data from women in the child-bearing age. The sample comprised of persons from the two largest combined family planning and antenatal clinics in Kingston, Jamaica.*

Results: *The women surveyed had a fair level of knowledge about ETS health risks, negative attitudes to smoking in general, and most supported a ban on smoking in public places. Significant knowledge differences existed between young and older women and between smokers and non-smokers.*

Conclusion: *Women with the highest level of knowledge were the non-smokers: of the low knowledge score group (current smokers), 50% were in the 15−24-year age range. There is a need for more public education on smoking and the consequences of environmental tobacco smoke exposure on children's health.*

Keywords: Environmental tobacco smoke, gender specific strategies, reproductive age group, risks to health

Necesidad de Estrategias de Control del Tabaco Específicas por Género
Hallazgos de la Encuesta CAP Acerca de la Exposición al Humo del Tabaco Ambiental Entre Mujeres en el Grupo de Edad Reproductiva

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RESUMEN

Objetivo: *El estudio fue realizado para evaluar los conocimientos, actitudes y prácticas de las mujeres en edad de procrear, en relación con el hábito de fumar y la exposición al humo de tabaco ambiental (HTA) sobre la salud de los niños.*

Sujetos y Métodos: *Se diseñó un estudio transversal con componentes cuantitativos y cualitativos con el propósito de recopilar datos de las mujeres en edad fértil. La muestra abarcó personas de las dos clínicas más grandes en Kingston, que combinan la atención prenatal con la planificación familiar.*

Resultados: *Las mujeres encuestadas tenían un nivel razonable de conocimientos acerca de los riesgos del HTA para la salud, actitudes negativas hacia el hábito de fumar en general, y la mayoría apoyaban la prohibición de fumar en lugares públicos. Se hallaron diferencias significativas en el conocimiento existente entre las mujeres jóvenes y mayores, así como entre las fumadoras y no fumadoras.*

Conclusión: *Las mujeres con el más alto nivel de conocimientos fueron las no fumadoras. Del grupo de bajo puntaje de conocimiento (actuales fumadoras), el 50% estaban en el rango de edad de 15−24 años. Existe una necesidad de mayor educación pública acerca del hábito de fumar y las consecuencias de la exposición al humo de tabaco ambiental sobre la salud de los niños.*

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Palabras claves: humo de tabaco ambiental, estrategias específicas por género, grupo de edad reproductiva, riesgos de salud

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INTRODUCTION

Environmental Tobacco Smoke, Second Hand Smoke or Passive Smoking may be defined as emission from a tobacco product by another individual. It is a complex mixture of chemical substances including irritants and systemic toxicants such as hydrogen cyanide, sulphur dioxide and mutagens with at least fifty human carcinogens and six as developmental or reproductive toxicants (1, 2).

Environmental Tobacco Smoke has been classified as Group A carcinogen under the United States Environmental Protection Agency (EPA) carcinogen assessment guidelines (3).

Children's vulnerability to second-hand smoke is a particular concern for both medical and ethical reasons. With smaller lungs, greater respiratory rates and less well developed immune systems, they are more likely to develop respiratory and middle-ear related illnesses (2).

Death rates for smokers are two to three times higher than for non-smokers at all ages. If the current pattern of smoking persists, over five million people younger than 18 years will die prematurely from tobacco related diseases and 500 million people alive today will eventually die of tobacco use (4).

This globalization of the tobacco epidemic, facilitated by global marketing, transnational media advertising, entertainment, promotion and sponsorship among other factors, led to the development of the World Health Organization Framework Convention on Tobacco Control (5).

The Convention highlighted inter alia that exposure to tobacco smoke causes adverse health and developmental conditions for children: further the increase in smoking and other forms of tobacco consumption by women and young girls worldwide required gender specific tobacco control strategies (5).

The smoking practices of family and friends in the home is also an important environment within which exposure to second-hand smoke occurs and such house rules are important where conscious efforts are being made to keep the home environment free.

Eal-Whan Park *et al* (6) in their review of the role of partner support to enhance effort to achieve smoking cessation found that such interventions showed promise when implemented with live-in, married and other cohabiting arrangements – especially when focussed on enhancing supportive behaviours while minimizing behaviours critical of smoking (6).

In Jamaica, the cost of treating tobacco-related illness in private and public health facilities since 1980 has been estimated at approximately US$ 4.38 billion (7).

The Global Youth Tobacco Survey (2001) conducted in Jamaica showed that approximately 36% of the 1742 students in the survey reported smoking their first whole cigarette before the age of 10 years. This is in keeping with the global trend of smoking at a increasingly early age (8). From the Global Youth Tobacco Survey (8), an average of 48.9% of students reported that they were exposed to second-hand smoke from others in their homes; this figure compared with 30.7% for Jamaican students.

The impact of environmental tobacco smoke exposure on the paediatric population can be classified as long term since children are more sensitive to the toxic effects than are adult smokers.

Hypothesis

The deleterious health effects from environmental tobacco exposure for young women and their newborns will worsen unless appropriate legislation and public education programmes are implemented in a sustainable manner.

Objectives

The Objectives of the study were:

* To assess knowledge of the consequences of environmental tobacco smoke exposure on children's health in women attending antenatal clinics.
* To evaluate respondents' attitudes to interventions aimed at encouraging/producing smoke-free environments.
* To find out what are the present smoking practices of parents/friends/family members within the home environment of the respondents.

MATERIAL AND METHODS

A cross-sectional study with quantitative (interviewer administered questionnaire) and qualitative components (focus group interviews) was designed to collect data from women in the child-bearing age range.

These instruments assessed knowledge of the consequences of environmental tobacco smoke exposure on health; attitudes to interventions aimed at encouraging smoke-free environments as well as present smoking practices of family members and visitors within the home environment.

For the quantitative component of the study, a systematic sampling technique was utilized in which every third woman attending two selected combined family planning and antenatal clinics was selected to participate in the study.

Pregnant and recently delivered women represent an at risk group for the effects of environmental tobacco smoke exposure to themselves and their unborn children.

The Optimum sample size required based on estimated prevalence of 50% of persons seeing environmental tobacco smoke as a problem is 384 (95% confidence interval, 5% level of significance). *[www.raosoft.com/samplesize.html]* Four hundred and thirty (430) participants were surveyed. The variables to be examined were knowledge, attitudes and practices related to smoking and non-smoking women in the reproductive age range 15−35 years.

The sample comprised of persons from the two largest combined family planning and antenatal clinics in Kingston, Jamaica.

The qualitative component of the study comprised two sets of focus group interviews. The two groups were selected in concert with site staff. Selectees included both smokers and non-smokers across socio-economic groups and ages attending these health facilities.

The semi-structured interviews included the following themes: the definition of the term environmental tobacco smoke exposure, consequences of exposure to environmental tobacco smoke on young women and children, attitudes to the ban of tobacco smoking in public places and house rules concerning smoking by both residents and visitors.

Analysis of the qualitative data was done using the Framework Approach. This is case-based, in contrast to a variable-based, approach− the latter used in analysis of quantitative data. The Frame Work Approach allows for the individual to be observed and studied as a complete entity to obtain a holistic understanding of social realities.

Quantitative data were analysed using the Statistical Package for Social Sciences (SPSS) Version 12 Package.

RESULTS

QUANTITATIVE

Table 1 displays the study population demographics and highlights the fact that most of the participants were young single women who had attained a secondary level education and had children previously. Fifty-four per cent were employed while just under 75% lived in their "own space", *ie*, rented or owned homes.

Table 2 shows that women with the highest level of knowledge of the consequences of environmental tobacco smoke exposure on children's health are the ones who never smoked, while those with the lowest scores are those currently smoking. Fifty per cent of the "low knowledge" score groups were in the 15−24-year age range.

Table 3 shows a fairly uniform response across clinic locations to the question whether government was doing enough to counter ETS, except in the "don't know" category where a greater than two-fold proportion of women receiving services from the Victoria Jubilee Hospital were uncertain on whether the government was doing enough.

Table 4 shows that only 9.2% of respondents aged 25 years or more compared to 28% of those in the 24-year or less age group felt that the government was doing enough by way of legislation and enforcing bans to curtail smoking in public places.

Table 1: Study population demographic

Variables	Socio-demographic characteristics Frequency	Percentage
Age Groups		
15−24	171	39.9
25−34	170	39.9
≥ 35	88	20.2
Educational Status		
Primary	36	8.4
Secondary	314	73.2
Tertiary	79	18.4
Union Status		
Married	84	19.5
Previously Married	48	11.2
Single (including visiting + Commom Law)	298	69.3
Perceived Health Status		
Excellent	97	22.6
Very Good	122	28.4
Good	135	31.4
Fair	64	14.9
Poor	10	2.3
Parity		
Nulliparus	150	34.9
Parus	280	65.1
Employment Status		
Employed	232	54
Unemployed	181	42.1
	15	3.5
Homemakers		
Pay Rent	168	39.1
Own Home	143	33.3
Stay with Friends	9	4.4
Live with Mother	57	13.3
Other (squatters)*	41	9.6

*Squatters own their homes but not the land on which it is built.

Table 5 looks at whether employment status, smoking status or clinic location in any way influenced home rules on smoking. Here the chi-square and *p*-values demonstrate that the employed were more likely to forbid smoking in the home while current smokers are unlikely to have any rules concerning smoking in the home.

QUALITATIVE

Knowledge concerning negative health effects of environmental tobacco smoke (or with the more familiar term, second-hand smoke) was fair with reference to its harmful effects.

There were divided opinions about smoke-free environments, in particular, private spaces *versus* public spaces in the context of individual's rights, *ie* the "smoker" who often seemed to forget the rights of others.

Table 2: Knowledge score cross-tabulated with Demographic Variables

Demographic Variable	Knowledge Score			
	Low (≤ 4 pt)	Medium (5−6)	High (7−8 pt)	
Smoking Status				
Never	72.3% (68)	73.1% (193)	78.9% (56)	χ^2 -11.4
Past Smoker	14.9% (14)	22.7% (60)	15.5% (11)	Df:4
Present Smokers	12.8% (16)	4.2% (11)	5.6% (4)	$p = 0.02$
Total	100% (98)	100% (264)	100% (71)	
Clinic				
VJH	25.8% (78)	57% (172)	17.2% (52)	χ^2 -11.21
UHWI	12.5% (16)	72.7% (93)	14.8% (19)	
				df:2
				$p = 0.004$
Age Group				
15−24	50% (47)	39.8% (105)	26.8% (19)	χ^2 -10.09
25−34	36.2% (34)	39% (103)	46.5% (33)	
≥ 35	13.8% (13)	21.2% (56)	26.8% (19)	df:4
				$p = 0.51$
Total	100% (94)	100% (264)	100% (71)	
Educational Achievement				
Primary	33.3% (12)	50% (18)	16.7% (6)	χ^2 -3.230
Secondary	20.0% (66)	62.7% (197)	16.2% (51)	
Tertiary	20.3%	62.0% (49)	17.7% (14)	df:4
				$p = 0.51$
Employment Status				
Employed	20.3% (47)	62.1% (144)	12.7% (41)	χ^2 -1.4
Unemployed	23.8% (43)	61.9% (112)	14.4% (26)	
Homemaker	20% (3)	60% (9)	20% (3)	df:4
				$p = 0.842$

Table 3: Perception by socio-economic status of the Governments' role in countering ETS

Respondents	Is the Government Doing Enough to Counter ETS			
	Yes	No	Don't Know	
Clinics				χ^2 + 7.65
VJH	18.9% (57)	71.1% (214)	10% (30)	
				df:2
UHWI	11.7% (15)	83.6% (107)	4.7% (6)	
				p + 022
				n = 429
Total	**16.8% (72)**	**74.8% (321)**	**8.4% (36)**	**100% (429)**

Some participants felt, "it was unreasonable to ask a man to go outside his home to smoke".

This attitude carried over into the practices domain where once again there were equally strong advocates for both the smoking and non-smoking groups. It was felt, "if smokers had to foot the medical bills they would be willing to smoke outside, or in designated smoking rooms and areas not accessible to children". A perceived barrier to avoidance of smoking in the house was expressed thus, "men will fear that their friends will consider them "sops"/spineless if they allowed themselves to be persuaded by others to stop smoking".

Table 4: Perception by age-group of the Governments' role in countering ETS

Respondents Age Group	Is the Government Doing Enough to Counter ETS			
	Yes	No	Total	
≤ 24	22.8% (39)	77.2% (132)	100% (171)	$\chi^2 = 8.53$
25−34	14.7% (25)	85.3% (145)	100% (170)	
				df:2
≥ 35	9.2% (8)	90.8% (79)	100% (87)	
Total	**16.8% (72)**	**83.2% (356)**	**100% (428)**	$p = 014$
				n = (428)

Table 5: Home-rules on smoking by employment status, smoking status and clnics

Respondents	Home-rules on smoking			
	Not allowed	Allowed	Total	
Employment Status				χ^2 -7.02
				df:2
Employed	67% (152)	33% (75)	100% (227)	
Unemployed	54.4% (98)	45.6% (82)	100% (180)	p + 0.03
Homemakers	53.3% (8)	46.7% (7)	100% (15)	
				n = (422)
Smoking Status				χ^2 -33.11
Never Smoke	67.5% (212)	32.5% (102)	100% (314)	
				df:2
Past Smoker	51.2% (42)	48.8% (40)	100% (82)	
Present Smokers	14.8% (4)	85.2 % (23)	100% (27)	***p* = 0.0001**
Clinics				χ^2 ¯3.09
VJH	58.1% (172)	41.9% (124)	**100% (296)**	
				df: 1
UHWI	67.2% (86)	32.8% (42)	**100% (128)**	
				$p = 0.084$
				n = (424)

DISCUSSION

Passive smoking has harmful effects on the respiratory health of persons so exposed, but more so on young children (9, 10). The evidence suggests that children exposed to environmental tobacco smoke have higher rates of lower respiratory illness during the first year of life, higher rates of middle ear effusion and higher rates of Sudden Infant Death Syndrome.

In addition, children with asthma and parents who smoke have more severe symptoms and more frequent exacerbations. Infants whose mothers smoked were 38% more likely to be admitted for bronchitis and pneumonia; thus admission rate increased with the number of cigarettes smoked by the infant's mothers (11).

The issue of cigarette smoking among all classes and age groups globally has been positively impacted since smoking in general was recognized and targeted as a significant health risk. Although the tobacco companies have come under increasing attack in terms of bans on advertising and sponsorship of events popular among young people, their marketing strategies continue to target young persons especially in developing countries (12, 13).

This is of note since it is well known that the cigarette companies tend to target young females in marketing and promotion strategies, capitalizing on Western images of independence, equality with men, glamour and sophistication to break down the traditional taboos against female smoking (14).

The Global Youth Tobacco Survey in 2001 (among Jamaican teenagers) showed that 14% of female teenagers were smokers. When the survey was repeated in 2006, this figure had risen to 18% which was of major concern for senior personnel at the National Counsel on Drug Abuse (Jamaica). There is a marketing programme which the local Tobacco company said is not directed to underage girls but directed towards adults who have taken a decision to smoke.

This study revealed that women with the highest level of knowledge are those who never smoked while those with the lowest scores are more likely to be current smokers. Of the low knowledge score group, 50% fell in the 15−24-year age range.

In the 15−24-year age group, in response to the question whether cigarette companies were lying through their advertisement, only 31% in comparison to 85.2% of all the participants 36 years or more felt that the companies were not lying.

This suggests some vulnerability among these younger women who seem more accepting of these advertisements without scrutinizing the content and recognizing any deceptive intent.

Although the Jamaica Government is party to the Convention of the Rights of the Child which was adopted by the United Nations General Assembly in November, 1989, in recognition of the Rights of the Children to enjoy the highest attainable standard of health, this survey showed that only 16% of the respondents felt that Government was doing enough by way of legislation and enforcement of bans on smoking in public places.

Almost two-thirds of those who felt that the Government was doing enough attended the hospital facility serving patients of a lower socio-economic status. When this response was looked at across age groups, it was found that 22.8% of the 15−24-year age group thought that the Government was doing enough compared to only 9.2% in the greater than 36-year old participants.

This suggests a possible disparity in knowledge or opinion on what the Government might have done or is doing to address the problem of environmental Tobacco Smoking (ETS) exposure in public and private places.

From the qualitative information component of the study, it was clear that very few persons knew that the Government had increased taxes on tobacco products and had targeted 1 billion dollars annually as a contribution to the National Health Fund to assist persons with chronic illnesses to procure medications. This measure is consistent with the World Health Organization's Framework Convention on Tobacco Control (FCTC), Article 6, which recognizes that price and tax measures are effective means of reducing tobacco consumption by various segments of the population, in particular young persons.

Women who were current smokers accounted for 6.3% of the respondents with only 2.4% smoking on a daily basis. This is somewhat less than the 11% prevalence reported among the 15−49-year old females in the 1993 Risk Behaviour Survey and certainly far less than the 28.9% of female students who initiated smoking before the age of 10 years (Global Youth Tobacco Survey–2000). This would imply that less than one fifth of the females who initiate smoking early continue into adulthood as evidenced by the fact that 73.7% of the respondents within the Global Youth Tobacco Survey–2000 wanted to stop smoking.

Women who were employed seemed able to set rules about smoking in the home. This probably reflects the power that employment affords these women in the decision-making process in the home. The smoking status of the respondents also reflected the willingness or otherwise to allow smoking in the home. Over two-thirds (67.5%) of the respondents who did not allow smoking in the home had never smoked while 85.2% of those allowing smoking in the home were smokers. It is also interesting to note that approximately half (48.8%) of previous smokers were willing to allow smoking in their homes. This could be related to the influence of smoking peers, friends and family members that they continue to host an even after they had stopped smoking themselves.

This practice however continues to put them and their children at risk even though they had discontinued the practice themselves.

Findings from the Focus Group Discussion reflect to a similar extent the general character of the quantitative survey.

As a summary comment, there was awareness of "second-hand smoke" and its ill effects, however, this awareness was broad, generalised and wanting in terms of risks to children.

Attitudes and practices were linked in that there was support for the rights of both smokers and non-smokers in both private and public places. This highlights the need for more public education in general on both the issues of

smoking *per se* and the consequences of environmental tobacco smoke exposure on children's health in particular. There is the need for concerted, continued national, regional and global research and surveillance programme for monitoring the magnitude, determinants and consequences of environmental tobacco smoke on health with a view of implementing appropriate programmes and evaluating their outcomes on preventing the initiating of smoking and the extent to which cessation of smoking is achieved among established smokers.

The reality, however, is this, the potential for change rest not only on attitudes, but on other variables such as housing (particularly in "tenement yards" and homes of extended families), income and dependence on a partner in a visiting relationship who smokes. In addition, tobacco consumption is inversely related to the socio-economic status and increases as the standard of living decreases.

Although it is clear that the protection of children from environmental tobacco smoke exposure in house as well as in public environments should be a priority for programme and policy development, it is also clear that the issues are diverse, complex and multi-faceted demanding further research, surveillance, communication of information and inter-governmental collaboration.

Priority areas for further research must include: the attitudes of children, parents, health professionals and policy-makers concerning environmental tobacco smoke control in homes and public buildings: the assessment of the public and community support for regulatory changes and the assessment of control options under proposed legislation.

This study clearly demonstrates support for the ban on smoking in homes and public settings including daycare centres, schools, doctor's waiting room and restaurants.

To the extent that these facilities currently allow smoking is testimony that they are operating against the will of Jamaican women of child-bearing age.

There is a need for national and international collaboration and cooperation in promoting the transfer of technical, scientific and legal expertise and technology to establish and strengthen national tobacco control strategies, plans and programmes aimed at prevention of initiating smoking: promotion of smoking cessation and most importantly protection from exposure to tobacco smoke.

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