A Hidden Occupational Health Hazard: Environmental Tobacco Smoke (ETS) among Child Welfare Workers

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Background

- ETS consists of smoke emanating from the burnt end of a cigarette and smoke exhaled by the active smoker (CDC, 2011).
- Consequences for exposure to ETS include sudden infant death syndrome (SIDS) for infants, lung infections and asthma exacerbations for children, and heart disease greater rate of ear and lung cancer in non-smokers (CDC, 2011).
- ETS exposure has been restricted or banned in many employment settings; however, child welfare workers who work in the field are not subject to these regulations.

NORA Priority Area

- Healthcare and Social Assistance Sector Council, subsector Social Assistance.
  - Child Welfare Services is categorized as 624110 under NORA.

Specific Aims

- Specific Aim 1: In a cohort of child welfare workers, we will categorize the length and type of exposure to ETS among child welfare workers.

- Specific Aim 2: In a cohort of child welfare workers, we will measure staff's attitudes, knowledge and willingness to counsel and educate on ETS and tobacco use.

- Specific Aim 3: In a cohort of child welfare workers, we will characterize self-reported ETS policies for home and automobile, smoking behavior, and current tobacco consumption for staff.

Research Methods and Study Design

- This study utilized two designs:
  - Cross-sectional survey
    - Administered 1x to child welfare workers
  - Observational-cohort design
    - Administered for 2 weeks to child welfare workers
- Sent via email to employee list-serv of 248 workers
  - Supervisors, case workers, family service workers, and paraprofessionals
- Survey Monkey software and encryption service were utilized for both aspects of the study.
- Compensation was not allowed by agency.
  - Instead, PI provided three free 2 hour workshops at agency with continuing education credits (CEU) on a topic not related to study subject matter to employees.
  - Employees need CEU's for licenses and often pay out of pocket.
  - Approximately 225 employees attended workshops

Research Methods and Study Design

- A content validity index for the surveys was administered to five experts in child welfare in order to assure the sample of items together adequately addressed the research domain of smoking and secondhand smoke exposure in child welfare workers.
- Pilot study with 10 child welfare workers from another county tested survey

Results

- Analyses were conducted using SPSS 22.0
- Response rate from 248 employees
  - Cross-sectional survey (Survey 1)
    - 86 employees (35% response rate)
  - Observational-cohort design (Survey 2)
    - 68 employees (27% response rate)
    - Days responded ranged from 1 to 10, average 2.47 days

Demographics

Variable	(N)%
Gender	(61)
Male	8.2
Female	91.8
Race/Ethnicity	(61)
White	54.1
AA/Black	24.1
Latino	1.6
Age	(58)
Mean (*SD)*	37 *(9.63)*
Education	61
Undergraduate degree	68.9
Graduate degree	31.2

Variable	(N)%
Job Title	(85)
Caseworker	50.6
Family Services Worker	35.3
Paraprofessional	1.2
Supervisor	12.9
Years employed at current position	(65)
Mean (*SD)*	5.84 (*6.97*)
Years worked in child welfare	(76)
Mean (*SD)*	9.27 (*7.68)*
Current Smoking Status	(34)
Current Smokers	29.4

Specific Aim 1: In a cohort of child welfare workers, we will categorize the length and type of exposure to ETS among child welfare workers.

Hypothesis 1.1 — Child welfare workers who are classified as family service workers and paraprofessionals will have greater exposure to ETS at work than other categories of child welfare workers.

- Two Way ANOVA Non-significant result using Survey 1
- One Way ANOVA Non-significant result using Survey 2

Hypothesis 1.2 — Child welfare workers who were exposed to ETS prior to 18 years of age will have greater exposure to present-day ETS.

-Pearson Correlations Non-significant result using Survey 1

Specific Aim 2: In a cohort of child welfare workers, we will measure staff's attitudes, knowledge and willingness to counsel and educate on ETS and tobacco use.

Hypothesis 2.1 — Non-smoking child welfare workers will have a greater knowledge of the hazards of smoking and be more willing to provide information and counseling on tobacco cessation to clients who smoke than those child welfare workers who smoke.

- 2 MANOVA's non-significant (F = 0.625, p = 0.682), (F =0.259, p =0 .902)
- ANOVA non-significant (F = 0.192, P =0.664)

Hypothesis 2.2 — Employees with more education will have a greater knowledge of the hazards of smoking and be more willing to provide information and counseling on tobacco cessation to clients who smoke.

-ANOVA significant result (F =7.503, p =0.008), Pearson correlation (r = -0.328, p =0.008) indicating employees with an undergraduate degree are more likely to agree that nicotine dependence treatment be offered or provided to their clients who smoke as compared to employees with graduate degrees

Specific Aim 3: In a cohort of child welfare workers, we will characterize self-reported ETS policies for home and automobile, smoking behavior, and current tobacco consumption for staff.

Hypothesis 3.1 — Those child welfare workers who smoke but who are interested in stopping will have more restrictive ETS policies at home and in their automobiles, and will be less likely to smoke with clients and around non-smoking employees.

-One way ANOVA's – only one significant result; Pearson's correlation analysis indicated employees who were serious about stopping smoking were more likely to have restrictive policies for smoking in their automobile ($r = -.794$, $p = .0005$).

Other Results

- 85% of participants did not feel they had the required skills to help their clients quit smoking.
- 53% of participants knew resources available to help clients quit smoking in the community.
- Many participants were not familiar with the policies around smoking with clients.
  - 40% percent of staff reported staff are not allowed to smoke with clients
  - 5% reported staff are allowed to smoke with clients
  - 33% reported that there is no policy on smoking with clients
  - 22% reported “other” and specified a policy with majority reporting “unsure”

Statement	N	Never	Occasionally	Often	Very Often	Always
If clients smoke, do you ask them not to smoke around you?	61	37.7%	32.8%	6.6%	8.2%	14.8%
If clients smoke, have you told clients that you have a health condition so they don’t smoke around you?	61	75.4%	14.8%	1.6%	6.6%	1.6%
If clients smoke in their house, do you try to have the meeting elsewhere (such as outside, etc)?	61	52.2%	24.6%	13.1%	4.9%	4.9%
If clients smoke in their house, do you try to limit your time with them?	61	36.1%	23%	18%	14.8%	8.2%
If you have to transport clients, do you allow them to smoke in your car?	60	91.7%	6.7%	1.7%	0%	0%
If you are with another employee who smokes, do you ask them not to smoke around you?	61	44.3%	19.7%	4.9%	6.6%	24.6%
If you are traveling in a car with another employee who smokes, do you ask them not to smoke around you?	62	35.5%	22.6%	3.2%	9.7%	29%

Discussion

- Majority of our hypotheses were not supported and only two analyses provided significant results.
- This could be due to a lower response rate than initially sought in this study.
- There were several factors that could have impacted the response rate.
  - Policy on employee compensation for participation in research changed so that employees were no longer allowed to receive direct compensation.
  - Layoffs of employees occurred right before the seminars were offered, possibly lowering employee morale.
  - The survey could not be sent out right after the seminars due to an email conversion to another system which impacted the email system for approximately one week.

Discussion

- Only a small number of employees take steps to reduce their second-hand smoke exposure on the job.
- Rates of smoking are unknown among those who receive child welfare services; however, this study provides an estimate
  - Nearly 1/2 of the children on their caseload live with someone who smokes, and approximately 1/2 of the families live with someone on their caseloads smoke.
- Educating and training child welfare workers could help reduce the rate of smoking in clients.

Limitations

- Valid scale for some questions quantifying ETS and smoking policies utilized, other questions were locally developed and had not previously demonstrated reliability and validity.
- Participants represented a convenience sample within a specific geographic location in the U.S. and were self-selected, thus not generalizable.
- This study represents a very specific employment setting in an urban area that may not generalize to other child welfare agencies or clients served.
- Finally, biochemical measures of smoking status were not collected to confirm self-reports or quantify ETS exposure in non-smokers.

Next Steps

- Meet with Child Welfare Agency in November to discuss results and future plans
- Pilot study at Cincinnati Children's Hospital Medical Center's Comprehensive Health Evaluations for Cincinnati's Kids (CHECK) Foster Care Clinic.
  - *Survey caregivers of foster care children for their tobacco use and secondhand smoke exposure in order to design an intervention to address tobacco use in caregivers.*

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