

An Observation Survey on Family Gas Safety Check Behavior through Home Visit and Behavior Aid Tool with the Chinese New Year Custom

Part One: Background

- Gas leak is one of the leading causes of fire in winter season, especially during the Chinese New Year (CNY). 2009 in Beijing, from Nov. 2009 to early 2010, there were 87 deaths from gas leakage; 2009 in Shanghai, from December 2008 to February 2009, there were 25 deaths accounting for 76% of the total deaths from gas leakage of the whole year.
- Home visit is proven to be effective for injury prevention.
- People believe that getting red envelop during CNY brings good luck
- Survey community partner: Huamu Community, located in Pudong area, Shanghai, is one of Safe Kids China's community coalitions since year 2006. Huamu community is also one of the International Safe Community designated by the Karolinska Institute, the WHO Collaborating Centre on Community Safety Promotion. Safe Kids@ Home program sponsored by Honeywell has been introduced to Huamu community in 2010. The whole community was outreached through the program poster posted in residential buildings through the support by Huamu community, covering 230,000 residents.
- The survey project working committee is composed of community safety officers, residential officers and Safe Kids staffs.

Part Two: Objectives

- To enhance the impact of the home visit on behavior change for gas safety, the study focuses on safety information delivery with behavior aid tools which are wrapped into a red envelop with the Chinese New Year Custom.

Part Three: Methods and Instruments

1. Control-panel study: 76 families in 12 residential buildings were identified, 6 buildings as an intervention group while the other 6 as a control group.
 2. Home visit: The intervention group received home visit by trained staff and received behaviour aid tools in a red envelop (safety checklist, emergency contacts; magnet as behaviour aid reminder), while the control group received home visit by trained staff with oral education.
 3. Behaviour observation: Three gas safety behaviours (having gas safety checklist, writing down gas leak emergency contacts and making family escape plan) were set for observation during the home visit. The behaviours were observed one week before CNY and one week after CNY.
 4. Pre & Post awareness evaluation: a questionnaire survey was conducted through the home visit among intervention group together with the behaviour observation before CNY and one week after CNY.
- Gas Safety Behavior Aid Tools: to promote the family behavior change on the three gas safety behaviors (gas safety checklist, gas leak emergency contacts and family escape plan), four tool cards were developed with key messages on gas safety behaviors, distributed with magnets as behavior aid tools for easy attaching to the refrigerator or other surface as a daily reminder. The tool kit was packaged in a red envelop distributed before CNY through home visit with oral instructions on the use, as people believe that getting the red envelop during CNY brings good luck.



Part Four: Major Results

Demographics: 76 families in 12 residential buildings were identified as for the survey.

(1) Gender: Male vs. Female rate was 1:38 : 1 among interviewee.

Gender	n	%
Male	44	58%
Female	31	42%
Total	76	100%

(2) Age : The interviewee were mainly aged from 30 to 60, accounting 70% of all interviewee.

Age	n	%
≤20	2	3%
>20≤30	5	7%
>30≤40	22	29%
>40≤50	14	18%
>50≤60	17	22%
>60	16	21%
Total	76	100%

(3) Education: 50% of the interviewees were bachelor degree

Education	n	%
Primary School	2	3%
Middle School	16	21%
High School	18	24%
Bachelor	38	50%
Master and above	2	3%
Total	76	100%

(4) Number of family members: 51% of the families have 3 family members.

Number of family members	n	%
1 family member	1	2%
2 family members	12	16%
3 family members	38	51%
4 family members	11	14%
5 family members	10	13%
6 family members	4	5%
Total	76	100%

(5) Children in the family:

- 50% of the families have children aged 14 and under.
- 69% of the families have children aged from 3 to 12. 16% were kindergarten students and 53% were in primary school students.

	n	%
Under 3y	8	21%
3y-6y	6	16%
7y-12y	12	53%
13y-16y	4	11%
17y and above	0	0%
Total	38	100%

Gas Safety Behavior Change:

1. The intervention group has 93% families positive reporting on the three gas safety behaviors, among which 64% families used the magnet.
2. The control group has 29% families positive reporting on the three gas safety behaviors.

Gas Safety Behavior Index Observed	Positive Behavior Reporting Rate	
	<u>Control Group</u> (n=38)	<u>Intervention Group</u> (n=38)
		Way of use: A. Attach on refrigerator with magnet B. Put under the table
Gas Safety Checklist	35%	97% (A. 83%+B. 17%)
Gas leak emergency contacts	46%	100% (A. 69%+B. 31%)
Family escape plan	5%	82% (A. 41%+ B. 59%)
Average of the three gas safety behavior	29%	93% (A. 64%+B. 36%)



Distributing the red envelop with gas safety tools cards



Children attached the gas safety tools card with magnet on the refrigerator



Gas safety tools card as a daily reminder

Awareness change:

Awareness related to the three key gas safety behaviors (Gas Safety Checklist, Gas Safety Emergency Contact and Family Escape Plan) were also evaluated through questionnaires before and after the intervention.

Awareness on Gas Safety Checklist:

Awareness on gas safety checklist	Intervention Group			Control Group		
	Pre (%)	Post (%)	+/- (%)	Pre (%)	Post (%)	+/- (%)
Close the general gas valve before sleep	47	67	+20	45	55	+10
Change the gas tube every 18 months	39	63	+24	38	48	+10
Safe cooking flame is blue	89	97	+8	85	90	+5
Gas lead alarm definitely helps saving life	80	86	+6	78	78	+0
Ave. awareness on gas safety checklist	64	78	+15	62	68	+6

Awareness on Gas leak emergency contacts:

Awareness on gas leak emergency contacts	Intervention Group			Control Group		
	Pre (%)	Post (%)	+/- (%)	Pre (%)	Post (%)	+/- (%)
I know the contact of gas emergency call center	80	89	+9	65	72	+7
I know the contact for water heater maintenance	69	95	+26	40	42	+2
I know the contact of hospitals nearby for gas leak rescue	67	92	+25	30	32	+2
Ave. awareness on gas leak emergency contacts	72	92	+20	45	49	+4

Awareness on Family Escape Plan:

Awareness on family escape Plan	Intervention Group			Control Group		
	Pre (%)	Post (%)	+/- (%)	Pre (%)	Post (%)	+/- (%)
I'm clear about the 4 step for gas leak emergency escape including						
- open the window, close the general gas valve						
- cut all fires and flames	72	88	+17	60	65	+5
- leave home to a safety place and call for gas center						
- back home when safe						
I'm clear about the home escape plan key point including						
- two escaping routes for each room	41	61	+20	35	36	+1
- a family gathering place outside home						
- regular practice and adjust the home escape plan						
I know the right gesture for home escaping as "Lower the body, walk quickly"	71	98	+27	67	79	+12
Ave. awareness on family escape plan	61	82	+21	54	60	+6

Part Five: Conclusion:

1. Home visit with behaviour aid tools promotes family's behaviour on gas safety compared with oral instructions.
2. Intervention to be linked with the Chinese custom with behaviour aid tools through home visit promotes family's gas behaviour change for safety.
3. Observation for behaviour change by the use of the safety tools could help indicate behaviour change.

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