Comparing the Effects of Different Smoking Cessation Counseling Interventions for Inpatients: A Systematic Review

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Background

- **In the world:**
  - **There are 500 million persons died from tobacco related disease.**
  - **In average, there is one person died from tobacco use every six-seconds.**
- **Result from tobacco use In the U. S. :**
  - **More than 400 thousands of death cause by cardiac vascular disease, respiratory disease, and cancer.**
  - **Smoking during pregnancy, increasing the risk of premature childbirth and intra-uterus development delay of fetus.**
  - **Approximately 1,000 infants death, and 38,000 death attributed to environmental tobacco smoke annually.**

- **(WHO, 2011)**

Background

- **In Taiwan，the smoking rate in 2010:**
  - **All of adults: 19.8%**
  - **Male adults: 35.0%**
  - **Female adults: 4.1%**
- **More than 18,000 persons died result from health problems related to tobacco use, each year.**
- **To compare with the developed countries, the smoking rate of adult in Taiwan, is 1.5 times of the United States, and 1.8 times of Canada.**
- **There is nearly by one person died from tobacco hazard every twenty minutes.**
- **Smoking has become the leading cause of preventable death in the country.（Bureau of Health Promotion, 2011）**

Background

- **Smoking cessation are the benefits of the people of any age smokers to quit smoking before the age of 35 the mortality rate equivalent to those who never smoked.**

(Doll, Peto, Boreham, Sutherland, 2004）

- **Hospitalization is a “teachable moment” for quitting.**

(Gold, 2005; Rigotti, Monafo, & Stead, 2004, 2008)

Hospitalization is a critical period for quitting smoking

- **The patient's illness is serious enough to require hospitalization that is a good time for smoking cessation health education—”teachable moment”.**

（Greene, 2003; Gold, 2005)

- **Individuals may be more open to help at a time of perceived vulnerability, and may find it easier to quit in an environment where smoking is restricted or prohibited.**
- **Hospitalization may present the right opportunity to offer intervention to help the smokers to quit.**

(Rigotti, Monafo, & Stead, 2004 , 2008)

The newest policy of tobacco control in Taiwan

- Since March 2012, the Department of Health launched the implementation of the second generation of smoking cessation treatment pilot project " to train health professionals to provide health consultaion for in-patient smokers to quit smoking.
- Expected subsidies to inpatient smoking consulting fees by trained smoking case managers from July 2012

(Bureau of Health Promotion, Department of Health, 2012).

Smoking cessation counseling

- **Started to patients who were admitted:**
  - **To persuade patients to quit smoking.**
  - **To give brief smoking cessation health education counseling during the hospital stay.**
  - **Increasing the motivation for smoking cessation.**
  - **Referred community smoking cessation resources to patients.**

- **After discharge from hospital:**
  - **To continue tracking the smoking cessation situation.**
  - **To increase the success quit rate of patients .**
  - **To promote the health of the patient.**

The purpose of this study

- **To explore the effects of smoking cessation counseling intervention to patients who are hospitalization by using the method of systematic review.**

Methods-Types of Studies

- **The review considered any randomized controlled trials (RCTs) that evaluate the effectiveness of smoking cessation counseling interventions for inpatients**

Types of participant

Inclusion criteria

- **Inpatient**
- **Cessation behavior change(cognitive, or behavior modification) intervention**
- **≧18 Y/o**
- **Male or female**

Exclusion criteria

- **Children, adolescent**
- **Pregnant women**
- **Mental illness**
- **Substance abuse (alcoholism, drug addiction)**
- **Out-patients**
- **Community smoking cessation classes, community pharmacy, school, workplace, etc..**

Types of intervention

- **This review considered any smoking cessation counseling interventions used for hospitalized patients.**
- **Interventions included: health education for quitting, individual or group consultation, interview by telephone or face-to-face, and so on.**

Types of outcome measures

- **Point-prevalence**
- **Continue-prevalence**

Types of languages

- **English**
- **Chinese**

Search Strategy for identification of studies

- **First of all, the Cochrane Collaboration and The Joanna Briggs Institute library of systematic reviews were searched to ensure that a systematic review on this subject was not being undertaken or already completed.**
- **An initial limited search of Medline, CINAHL and NCL (Chinese) were performed to determine key words for the subsequent exhaustive and systematic database search. Key words were identified through an analysis of text words contained in the title, abstract and MeSH, or descriptor terms of the above database.**
- **A second extensive search was undertaken to use all identified key words and index terms.**

Review methods

- **Two reviewers assessed the reference titles and abstracts identified from the search against the inclusion/ exclusion criteria independently and the full text obtained of relevant reports.**
- **If the title and abstract are inconclusive full text were obtained for further assessment.**
- **A checklist utilized for the verification of study eligibility.**

Assessment of methodological quality

- **The methodological quality of each study to meet the inclusion criteria was assessed independently by two reviewers using a critical appraisal tool based on the Joanna Briggs Institute assessment tools.**
- **Critical appraisal of methodology encompassed: selection bias, performance bias, attrition bias, and detection bias.**

Data extraction

- **Data extraction from the included studies were undertaken and summarized independently by two reviewers using a data extraction tool .**
- **Independent reviewers pilot-tested the data extraction tool prior to use.**
- **Discrepancies were resolved by discussion between the reviewers.**

Data Collection Process

- **Keywords:**
  - **Smoking Cessation or Tobacco Cessation**
  - **Counseling or Consultation**
  - **Inpatient or Hospitalized Patient**
  - **Outcome or Effectiveness**

Results

	Smoking cessation and inpatient and adult	Smoking cessation and hospitalized and adult	repeat	total
Cochrane Library	43	41	14	70
EBSCOhost (CIHNAL)	19	16	8	27
Medline	47	69	9	107
Psych INFO	33	14	19	28
JBI Report	1	0	0	1
repeat	10	0	—	—
total	133	100	—	233
Limited RCT	-	-	-	22

Characteristics of Reviewed Articles

Variable	n	%	No.
Publication Year			
≦ 2000	6	27. 3	17-22
2001-2005	**10**	**45.4**	**5,8-16**
2006-2011	**6**	**27.3**	**1-4,6-7**
Country			
U.S.	**9**	**40.9**	**1,3,7,11-12,19-22**
Canada	**4**	**18.2**	**5-6,9,13**
Australia	**2**	**9.0**	**10,17**
Other(Germany, Netherland, U.K., Sweden, Holland, Norway, Portland)	**7**	**31.9**	**2,4,8,14,15,16,18**
No. of Group			
2 groups(1EG and 1CG)	**20**	**90.1**	**1-8,10-19,21-22**
3 groups(2EG and 1CG)	**2**	**9.9**	**9,20**

Characteristics of the participants

- Total number of participants in all 22 researches: 9558
  - **Male: 5576（58.3%), Female: 3980(41.7%)**
  - **Range of Age : 20-83 y/o**
  - **Diagnoses / Cause of Admitted :**
    - **CVD: N＝12, 55%(No. 3, 6, 7, 9, 11, 13-17, 19, 22）**
    - **Surgery : N＝4, 18%(No.2, 4-5, 21)**
    - **Cancer: N＝2, 9%(No. 10, 12）**
    - **Other :N＝4, 18%(No. 1, 8, 18, 20）**

Smoking Status of Inpatients

- **Age of initial smoking (y/o)**
  - **Range:11.0~43 y/o(N＝8, 36%; No.1, 5, 9-12, 16, 22)**
- **Average year of smoking**
  - **Range: 10.1~97.0 years（N＝9, 41%; No. 4-5, 7, 10-11, 13-14, 21-22）**
- **Amount of daily smoking (no. / day)**
  - **Range: 4.1~70.0 per day（N＝18, 82%; No. 1, 4-8, 10-15,17-22）**

Content of Inpatient Smoking Cessation Counseling-1

Intervention provider	N	%	No.
1. Nurse	12	54.5	2, 4, 5, 9, 11, 13-15, 17, 20-22
2. Physician	3	13.5	6, 12, 19
3. Counselor	2	9.0	3, 7
4. Social worker	1	4.6	1
5. Respirator y therapist	1	4.6	18
6. Psychiatrist	1	4.6	8
7. Nurse and Physician	1	4.6	16
8. Researcher	1	4.6	10
Theoretical Model application			
No	12	54.5	
Yes	10	45.5	
1. TTM	4	18.2	8-9, 18-19
2. 5As	3	13.6	1, 6, 12
3. Social learning theory	2	9.1	20, 22
4. 5As and TTM	1	4.6	2
Health Education Supplementary			
No	5	22.7	4, 8-9, 16, 19
Yes	17	77.3	
1. Booklet	12	54.5	1-3, 5-7, 10-15
2. video-audio materials	1	4.6	18
3. 1 and2	4	18.2	17, 20-22
NRT or medication			
No	7	31.8	1, 8, 15-18, 22
Yes	15	68.2	2, 4-7, 9-14, 19-21

Content of Inpatient Smoking Cessation Counseling-2

Counseling in Hospital	N	%	No.
Type			
1.Individual counseling	19	86.5	1-2, 4-7, 9-20, 22
2.Group counseling	1	4.5	8
3. 1 and 2	1	4.5	21
4.Description unclear	1	4.5	3
Time			
1 Time	12	54.5	1-2, 7, 9, 12-15, 17-20
> 1 Time	6	27.3	4-6, 8, 14, 21
Description unclear	4	18.2	3, 10, 16, 22
Duration each time			
< 15 mins	2	9.1	12-13
≧15mins	11	50.0	1,5,6-9,11,15,19-21
Description unclear	9	40.9	2-4,10,14, 16-18, 22

Content of Inpatient Smoking Cessation Counseling-3

Counseling After Discharge	N	%	No.
No	3	13.6	1, 12, 15
Yes	19	86.4	2-11,13-14, 16-22
Type1			
1.Individual counseling	17	77.3	2-6,8-11, 13-14, 16-22
2.Group counseling	1	4.5	7
3. 1 and 2	1	4.5	3
Type 2			
1.Telephone counseling	12	54.5	5-6, 8-11, 17-22
2.Face to Face counseling	4	13.6	3,4, 7, 16
3. 1 and 2	2	9.1	13-14
4. Description unclear	1	4.5	2
Follow Up Period After discharge			
≦3 months	3	13.6	1,4,16
4-6 months	3	13.6	2,9,10
7-12 months	12	54.6	5-6,8,12-15,17-20,22
≧12 months	4	18.2	3,7,11,21

Outcome measures

Point-prevalence	N	%	No.
No	1	4.5	18
Yes	21	95.5	1-2, 4-22
Period of Follow up			
< 3 months	5	22.7	4, 9, 15, 17, 23
3 months	6	27.3	1, 7, 8, 13, 16, 23
6 months	10	45.5	2, 5-12, 19
12 months	15	68.2	5-8, 11-15, 17-22
>12 months	3	13.6	7, 11, 21
Continue-prevalence			
No	13	59.1	1, 3-6, 8, 11-14, 17-18, 20
Yes	9	40.9	2, 7, 9-10, 15-16, 21-22
Period of Follow up			
< 3 months	2	9.1	9, 15
3 months	2	9.1	7, 16
6 months	5	22.7	2, 7, 9, 10, 19
12 months	5	22.7	7, 15, 19, 21, 22
>12 months	2	9.1	7, 21
Others	7	31.8	3, 4, 7, 21
Complication of operation	1	4.5	4(F/U 4weeks)
Complication of wound	1	4.5	4(F/U 4weeks)
Readmitted rate	1	4.5	7
Mortality rate	2	9.1	7, 21
Bio-chemical Validated	14	63.6	1, 4, 5, 6, 7, 9, 10, 11, 14, 15, 17, 20, 21, 22
Expiratory level of CO	5	22.7	4, 7, 9, 10, 15, 22
Saliva: conitine	5	22.7	1, 11, 15, 20, 21
Urine: conitine	6	27.3	5, 6, 9, 10, 14, 17
Serum: conitine	1	4.5	20
Serum: theocyanale	1	4.5	22

Cessation Strategy and Effectiveness

Model		No. of Apply	No. of Significant (P < 0.05)
1	Counseling + Supplementary materials	1	0
2	Counseling + Continue services after discharge	2	2
3	Counseling + Supplementary materials +NRT	1	0
4	Counseling + Supplementary materials + Referral services	1	0
5	Counseling + Supplementary materials + Continue services after discharge	3	2
6	Counseling + NRT + Continue services after discharge	3	2
7	Counseling + Supplementary materials +NRT+ continue services after discharge	10	4
8	Supplementary materials + Continue services after discharge	1	0
※ NRT = Nicotine Replacement Therapy			
Total		22	10

Discussion-1
Cessation Strategy and Effectiveness

- **The combined use of multiple-counseling intervention strategies (N=10), including providing smoking cessation counseling, health education materials, NRT or medications, and referred other community smoking cessation resources are effective (N=4, P<0.05).**

- **Intensive smoking cessation consulting intervention and continuing care after discharge is important:**
  - **Offering smoking cessation counseling to all hospitalized smokers is effective as long as supportive contacts continue for more than I month after discharge. (Rigotti, et al. 2008)**

Discussion-2

The Various Effects by Difference Professionals

- **Clinical nurses are the most suitable as the role of the health consultation service for inpatient smoking cessation.**
- **Among health professionals in the hospitals, nurses are the most effective service provider of smoking cessation for the inpatients among in 11 articles (58.0%; 11/22).**
- **Thus, we can train nurses who work on the first line in the field of a wide range of clinical care to provide smoking cessation services to those inpatients including smoking cessation knowledge, appropriate resources arrangement, follow those inpatient up after they discharge, and enhancement patients' self-efficacy to coordinate network between family and employee factory.**

(Rice, Stead 2004）

Conclusion

- **Smoking in-patients who have undergone health crisis and require retention of the hospital to treat their diseases that is a good moment for quitting cigarettes.**
- **The combined use of multi- counseling intervention strategies including smoking cessation counseling, health education materials, medications, and referred other community smoking cessation resources are effective.**
- **The number of follow-up interventions is significantly related to the effect of point abstinence rate (P <.05).**
- **Nurses are the most effective service provider of smoking cessation for the inpatients.**