

LEVELS OF STRESS AND HEALTH PRACTICES OF WIVES OF ALCOHOLICS

Phyllis Montgomery and Dorothy Craig

It is estimated that every alcoholic adversely affects the well-being of five to seven others, including the spouse, other family members, friends and coworkers. (Steinglass, 1981; Wilson-Schaefer, 1986). Jackson (1954, 1962) concluded that the spouses of male alcoholics experienced stress because of living with an alcoholic. This stress may be manifested through a wide variety of physiological, psychological and social symptoms (Jacob, Dunn, Leonard & Davis, 1985; Moos, Finney & Gamble, 1982; Whitfield, 1984).

Stress has been associated with poor health practices such as smoking, alcohol use and increased caffeine consumption (Conway, Vickers, Ward & Rahe, 1981; Lindenthal, Myers & Pepper, 1972). Healthy lifestyle practices have been positively associated with good physical health status (Belloc & Breslow, 1972), lower mortality (Belloc, 1973; Wingard, Berkman & Brand, 1982) and social support (Berkman & Syme, 1979; Gottlieb & Green, 1984). For some individuals, lifestyle practices may reduce the effects of the stress of living with an alcoholic. However, poor health practices, such as smoking, can be stressors in themselves; consequently, the health of the wife of an alcoholic may be affected.

The purpose of this study was to answer the following research questions:

1. What are the perceived levels of stress of the wives of alcoholics?
2. What are the major areas of stress for the wives of alcoholics?
3. What are the health practices of wives of alcoholics?
4. What is the relationship between the perceived levels of stress and the health practices of wives of alcoholics?

Review of the Literature

Early researchers have reported that wives of alcoholics had disturbed personalities (Bullock & Mudd, 1959; Kalashian, 1959; Lewis, 1954; Whalen,

Phyllis Montgomery, R.N., M.Sc.N. is Assistant Professor in the School of Nursing, at Laurentian University, in Sudbury. Dorothy Craig, R.N., M.Sc.N. is Associate Professor in the Faculty of Nursing, at the University of Toronto.

1953). Later studies found that such wives were under stress and, as a consequence, their health was negatively affected. Jackson (1954) described wives of alcoholics as being psychologically stressed as a consequence of the continual need to adjust to the alcoholic's behaviours. The husband's sobriety did not necessarily alleviate this stress for the wife because negative characteristics of the alcoholic, such as depression, were often still evident. Subsequent studies (Bailey, 1967; Haberman, 1964; Kogan & Jackson, 1965; Moos et al., 1982; Paolino, McCrady & Kogan, 1978) have generally supported Jackson's assertion that wives of alcoholics are under stress. Moos et al. (1982) found that spouses of relapsed alcoholics, as compared to spouses of nonalcoholic and recovered alcoholics, consumed more alcohol, but their drinking was not reported as excessive. Spouses of relapsed alcoholics also reported more psychological and physical symptoms, physician visits, negative life events, medical conditions and fewer social activities than spouses of nonalcoholic or recovered alcoholics.

Conceptual Framework

The conceptual framework for the study was an adaptation of Neuman's Systems Model (1982). The alcoholics' wives were viewed as a composite of physiological, psychological, sociocultural, developmental and spiritual variables, as described by Neuman (1989). The wives, in accordance with the model, were subject to the impact of intrapersonal, interpersonal or extrapersonal stressors. Neuman (1982) stated that reaction to stressors was influenced by the individual's lines of defense. The normal line of defense was described as the person's usual state and was the result of coping patterns, health practices and developmental stage. The flexible line of defense, also a result of the person's coping patterns, health practices and developmental stage, was described as providing a buffer against stressors. The flexible line of defense was dynamic, changing rapidly in crisis or altered physical states. Neuman (1982) posited that both were affected by health practices. In this study health practices, either healthy or unhealthy, were included because either could strengthen or weaken the lines of defense against stressors.

Method and Procedures

This descriptive, correlational study was conducted in three alcohol treatment centers, in a large metropolitan area. A convenience sample of 33 wives of alcoholics was selected from the target population of wives whose husbands were admitted to an alcohol treatment program. Informed consent was obtained from the 30 wives who participated in the study. The subjects were interviewed once; all but three were interviewed in their homes. Data were collected using a Demographic Profile, the Perceived Stress Level tool and the FANTASTIC Lifestyle Checklist.

Instruments

Demographic variables were measured with the 11-item Demographic Profile developed by the investigators, for this study. Item content was based on both the review of the literature and Neuman's (1982) description of an individual which included the interrelationship of the five variables; physiological, psychological, sociocultural, developmental and spiritual. The profile included questions about developmental variables (age and education); sociocultural variables (number and age of children, how many children at home, employment status, income, length of time living with an alcoholic husband and length of time husband's drinking was considered to have been a problem); spiritual beliefs (if present and if a source of strength); and perceived health status within the past month. Perceived health status was measured by three items. Wives rated their perceived physical health and psychological health on two separate seven-point Likert scales ranging from "very poor" (1) to "excellent" (7). To allow the wives to share their perceptions of their health problems, they were also asked to respond to one open-ended question: "Tell me about health problems you may be currently experiencing." Verbatim notes of their responses to this question were documented.

The Perceived Stress Level tool was also designed by the investigators to measure the wives' stress levels and stressors. The first question consisted of a 100mm vertical visual analogue scale, to measure the perceived stress level of each subject. The bottom anchor of the analogue represented "no stress at all", and the top anchor represented "stress as great as you can imagine". Each subject was asked to place a mark on the line that best indicated her level of stress. The level of stress was scored by measuring the number of millimetres from the low end of the scale to the subject's mark.

Visual analogue scales (VAS) have been used to measure a variety of subjective experiences with reported reliability, validity and sensitivity (Gift, 1989). Test-retest reliability of the VAS has been reported as .95 for women in labour (Revill, Robinson, Rosen & Hogg, 1976). Little and McPhail (1973) used the Beck Depression Inventory to establish concurrent validity of the VAS as a measure of depression ($r=.76, p<.001$).

After the analogue was administered an open-ended question was used to allow the subjects to share information regarding their stressors. Subsequently, the subjects were asked to rank their stressors. Verbatim notes of their responses were made. The stressors were categorized according to Neuman's (1982) definitions of intrapersonal, interpersonal and extrapersonal stressors. Interrater reliability of the coding was established at 97 percent. No pilot study was done to test the instrument.

Health practices were measured with the FANTASTIC Lifestyle Checklist (Wilson & Ciliska, 1984; Wilson et al., 1983). The checklist consists of 25 lifestyle items which are grouped into the following nine subscales of positive and negative health practices: family and friends; activity; nutrition; tobacco and toxins; alcohol; sleep, seat belts and stress; type of personality; insight; and career. Subjects rated the frequency with which they engaged in each of the practices described in the 25 items using a five-point scale, ranging from four to zero. The possible range of the total lifestyle score is 0 to 100, with high scores indicating more positive health practices.

Test-retest reliability of the total FANTASTIC scale has been reported as 0.603 (Kason & Ylanko, 1984). In this study, Cronbach's alpha for the total FANTASTIC scale was .625, with inter-item correlations ranging from -.253 to .576. The intercorrelation value for the item "my average alcohol intake per week" yielded no numeric correlation value. This result may be attributed to the fact that 100% of the sample responded in the category of "0-7 drinks/week". Cronbach's alpha was low; as such, items were removed according to their negative or low item scale correlation values. This resulted in the removal of two complete subscales, "activity" and "career" which represented three items as well as ten items from the remaining seven subscales. The modified lifestyle tool then consisted of 12 items. The resultant alpha for the modified lifestyle tool was .764, with inter-item correlations ranging from .304 to .581. A total health practice score was calculated by adding the scores of the 12-items, with a possible range of scores from 0 to 48. These total scores for the revised health practice tool were used for statistical analyses.

Data were analyzed using descriptive statistics, Kendall's tau for rank-order data and the Pearson Product Moment Correlation. An alpha of .05 was used.

Results

Sample

Select data from the demographic profile of the sample is presented in Table 1. Other demographic data were also of interest. Only four (13%) of the subjects had not achieved a high school diploma. The children's ages varied from six months to over 30 years. Twenty-five (83%) of the 30 subjects were employed outside the home with clerical work being the most frequently reported ($n=16$, 53%) occupation. The median family income was between \$40,000 and \$49,000 per year and approximately one-third ($n=11$) of the sample reported an income of \$50,000 or greater. Twenty-three (77%) of the sample reported having spiritual beliefs, with the majority ($n=20$) perceiving these beliefs as a source of strength.

Table 1***Demographic Profile of Sample (N=30)***

Variable	Range	Mean	SD
<i>Developmental:</i> Age	23-63	43.0	10.2
<i>Sociocultural:</i> Number of children	0-6	2.0	1.3
Children residing at home	0-3	1.4	0.8
Years living with husband	0.5-36	15.7	10.5
Years perceived husband's drinking as a problem	0-31	9.0	8.1

The subjects reported their perceived physical health ($Md=5$) to be better than their perceived mental health ($Md=4$). In response to the open-ended question about their perceived health problems, the majority of the subjects ($n=19$; 63%) reported that they were not experiencing personal health concerns at the time of the study. The remaining 11 (37%) subjects reported a total of 21 health problems. They indicated from one to three health problems each, the most frequently reported being fatigue ($n=5$).

Perceived levels of stress

Although the subjects' perceived levels of stress scores ranged from 10 to 94mm ($M=67.4$; $SD=21.5$), almost two-thirds ($n=19$) of the sample perceived their stress as high, with scores greater than 70. Those subjects ($n=4$, 13%) who had low perceived stress levels (10 to 40mm) qualified their responses by reporting that their levels of stress had decreased when their husbands had become involved in treatment programs.

The 30 subjects reported a total of 147 stressors. There were 100 (68%) interpersonal stressors, 30 (20%) extrapersonal stressors and 17 (12%) intrapersonal stressors. All the wives reported one or more interpersonal stressors. The one most frequently reported was a poor relationship with their husband. The extrapersonal stressors included finances and occupational concerns. The sample ranked their occupational concerns as more stressful than their financial concerns.

One of the sample's lowest-ranked stressors was perceived health status (intrapersonal stressor). Only five of the subjects were concerned about their mental health. Subjects reported that their health was important to them because it provided them with strength to cope with their situations and to care for their children's well-being. For example, one wife stated, "If I have my health, I can cope with anything."

Health practices

The total scores obtained on the modified 12-item lifestyle tool ranged from 17 to 45 ($M=35$; $SD=6.65$; $MD=36$). Medians for each of the 12 health-practice items are presented in Table 2. The higher values indicated more positive lifestyle practices. One-hundred percent of the sample reported zero to minimal alcohol consumption. Approximately two-thirds of the wives reported having someone with whom they could talk about their problems. Responses to an open-ended question revealed that many of the wives did not engage in many social activities, and preferred small social gatherings.

Sixty percent ($n=14$) of the wives were not smoking at the time of the interview. Subjects reported being angry ($n=10$; 33%), tense ($n=11$, 37%) and sad ($n=5$, 17%) almost always or fairly often.

Table 2

Median Scores of the 12-Item Lifestyle Tool (N=30)

Description of question asked	Median*
Give/receive affection	4 (almost always)
Eat balanced diet	4 (almost always)
Smoke tobacco	2 (quit > 1 year)
Cigarettes per day	4 (none)
Medication abuse	4 (never)
Amount drink per occasion	4 (never)
Sleep/rest	3 (often)
Use seat belt	4 (almost always)
Relax	3 (often)
Feel angry	2 (some of the time)
Feel tense	2 (some of the time)
Feel sad	2 (some of the time)

*Possible range of scores was 0-4.

Relationships between study variables

The Pearson coefficients were computed to determine the relationships between certain demographic variables, perceived stress levels and total health practices scores. The demographic variables, age, number of years of living with their husbands and length of time that drinking was perceived to be a problem, were not significantly related to perceived stress or health

practices. There was a moderately significant negative relationship between the total health practices score and the perceived level of stress ($r = -0.393$, $p < .03$).

Using Kendall's tau, perceived mental health status was negatively correlated to total stress levels ($\tau = -0.412$, $p < .003$).

Discussion

In this study of wives of alcoholics, perceived level of stress had a weak negative relationship to health practices. Those wives who perceived their levels of stress to be high reported engaging in fewer healthy lifestyle practices. This negative relationship is consistent with findings from previous studies (Conway et al., 1981; Lindenthal et al., 1972; Ruderman, 1983). Approximately two-thirds of the wives reported engaging in positive health practices. Health practices such as good nutrition, seat belt use and not smoking have been associated with perceived good health status (Belloc et al., 1972; Norman, 1986). In this study, zero to minimal alcohol consumption is consistent with the findings of Moos et al. (1982) in which spouses of recovered alcoholics were found to be non-drinkers.

Approximately two-thirds of the wives' also reported that they engaged in the healthy lifestyle practice of talking with someone about their problems, being able to give and receive affection or both. The wives reported few and only selective social activities. This may have allowed them to conceal their husband's drinking, and may possibly have protected them from potential interpersonal stressors (Neuman, 1982, 1989). Gorman & Rooney (1979) have stated that, as a means of coping, the wives of alcoholics limited the couple's social activities.

The investigators suspect that a possible motivation for some wives for engaging in healthy practices was the importance the women placed on their own well-being. Several wives perceived their health as a resource to help them cope with their stressful environment. Additionally, other wives explained that their health was important because they were primarily responsible for the well-being of their children. Similarly Hibbard and Pope (1987) found that the women's roles of caring for and protecting family members' health were associated with a greater interest in personal health.

Neuman (1982) postulated that energy is used when the individual is in a state of disequilibrium. Thus, the wives who reported symptoms of fatigue may have been experiencing a generalized response to stress, over a period of time. This fatigue may have increased their susceptibility to other stressors as it weakened their flexible lines of defense. However, the wives ranked their personal health as one of their lowest stressors. In the absence of

a control group, the finding concerning fatigue must be viewed with caution: women with family and career responsibilities may have similar levels of fatigue.

Limitations

The FANTASTIC questionnaire was originally developed as a self- assessment tool for patients, and as a memory aid for physicians. Although the tool provided important information, it also had limitations. The tool was designed to measure lifestyle practices that positively or negatively influence health. However, along with these practices it seemed to measure feelings (tension, sadness, anger) and stressors (job satisfaction). Feelings and stressors may, in turn, influence health practices. However, this relationship is not acknowledged by the tool's developers.

Another limitation of the FANTASTIC tool for research purposes was that the subscales grouped unrelated items together. For example, there was no apparent theoretical basis for the subscale combination of items "sleep/seat belt/stress".

The present study's finding must be viewed with caution because of the small non-random sample and the lack of pilot testing of the modified health practices tool and Perceived Stress Level questionnaire. Also, perception of stress was measured only at one point in time.

Implications for research

The results of this study generated suggestions for further research. Despite acknowledged limitations, the FANTASTIC Lifestyle Checklist provided some valuable information about health practices; however, the development and testing of a lifestyle assessment tool is needed. Using a reliable and valid lifestyle assessment tool, a longitudinal study to identify the perceived levels of stress and the health practices of the wives of alcoholics could provide more comprehensive data about their perceived stress, and about the relationship of their stress to their health practices. A future study should compare the perceived levels of stress and health practices of wives of alcoholics with a control group of women from the general population.

Clinical implications

Although further research is required, some recommendations for clinical practice were indicated by this study. The wives in this study perceived their environments to be stressful. Health care workers who are working with wives of alcoholics should assess the level of stress perceived by these women and the stressors that they are experiencing. This will enable the

workers to plan strategies, with these wives, to eliminate stressors or to deal with them as effectively as possible. When spouses enter a treatment program, a program should be offered to wives that addresses their specific needs. It should not be assumed by health care workers that the spouse's entrance into a treatment program eliminates stress for the wife.

Although the majority of the wives reported engaging in good health practices, some of the wives reported health practices that may compromise their health. The health care worker should assess the wife's health practices and the relationship of these health practices to her stress. This could assist her to attain or maintain a good health status. Good health was important to the wives in this study - they felt that it was important to being able to cope and care for their families.

Conclusion

The wives of alcoholics reported high levels of stress. The stressors reported most frequently by wives were a poor relationship with their husband, financial or occupational concerns and fatigue. The majority of wives reported engaging in good health practices; however, a small group of wives reported health practices that could endanger their health. Health was perceived as an important resource by some of the wives in this study who felt it enabled them to care for their families.

REFERENCES

- Bailey, M. B. (1967). Psychophysiological impairment in wives of alcoholics as related to their husband's drinking and sobriety. In R. Fox (Ed.), *Alcoholism: Behavioral research and therapeutic approaches* (pp. 134-144). New York: Springer.
- Belloc, N. B. (1973). Relationship of health practices and mortality. *Preventive Medicine*, 2, 67-81.
- Belloc, N. B. & Breslow, L. (1972). Relationship of physical health status and health practices. *Preventive Medicine*, 1, 409-421.
- Berkman, L. F. & Syme, S. L. (1979). Social networks, host resistance, and mortality: A nine-year follow-up study of Alameda County residents. *American Journal of Epidemiology*, 109, 186-204.
- Bullock, S. C. & Mudd, E. H. (1959). The interaction of alcoholic husbands and their non-alcoholic wives during counselling. *American Journal of Orthopsychiatry*, 29, 519-527.
- Conway, T., Vickers, R., Ward, H. & Rahe, R. (1981). Occupational stress and variation in cigarette, coffee and alcohol consumption. *Journal of Health and Social Behavior*, 22, 155-161.
- Gift, A. G. (1989). Visual Analogue Scales: Measurement of subjective phenomena. *Nursing Research*, 38, 266-268.
- Gorman, J. M. & Rooney, J. F. (1979). The influence of Al-Anon on the coping behavior of wives of alcoholics. *Journal of Studies on Alcohol*, 40, 1030-1038.
- Gottlieb, N. H. & Green, L. W. (1984). Life events, social network, lifestyle, and health: An analysis of the 1979 national survey of personal health practices and consequences. *Health Education Quarterly*, 11(1), 91-105.
- Haberman, P. W. (1964). Psychological test score changes for wives of alcoholics during periods of drinking and sobriety. *Journal of Clinical Psychology*, 20, 230-232.
- Hibbard, J. H. & Pope, C. R. (1987). Women's roles, interest in health, and health behavior. *Women and Health*, 12(2), 67-84.
- Jackson, J. K. (1954). The adjustments of the family to the crisis of alcoholism. *Journal of Studies on Alcohol*, 15, 562-586.
- Jackson, J. K. (1962). Alcoholism and the family. In D. J. Pittman & C. R. Snyder (Eds.), *Culture and drinking patterns* (pp. 472-492). New York: Wiley and Sons.
- Jacob, T., Dunn, N. J., Leonard, K. & Davis, (1985). Alcohol related impairments in male alcoholics and the psychiatric symptoms of their spouses: An attempt to replicate. *American Journal of Drug and Alcohol Abuse*, 11, 55-67.
- Kalashian, M. M. (1959). Working with the wives of alcoholics in an out-patient clinic setting. *Marriage and Family*, 21, 130-133.
- Kason, Y. & Ylanko, V. J. (1984). FANTASTIC Assessment: Part 5, measuring lifestyle in family practice. *Canadian Family Physician*, 30, 2379-2383.
- Kogan, K. L. & Jackson, J. K. (1965). Stress, personality and emotional disturbance on wives of alcoholics. *Journal of Studies on Alcohol*, 26, 486-495.
- Lewis, M. L. (1954). The initial contact with wives of alcoholics. *Social Casework*, 35, 8-14.
- Lindenthal, J. J., Myers, J. K. & Pepper, M. (1972). Smoking, psychological status and stress. *Social Science and Medicine*, 6, 583-591.
- Little, J. C. & McPhail, N. I. (1973). Measures of depressive mood at monthly intervals. *British Journal of Psychiatry*, 122, 447-452.
- Moos, R., Finney, J. W. & Gamble, W. (1982). The process of recovery from alcoholism: II. Comparing spouses of alcoholic patients and matched community controls. *Journal of Studies on Alcohol*, 43, 888-909.
- Neuman, B. (1982). *The Neuman Systems Model: Application to nursing education and practice*. Norwalk, Connecticut: Appleton-Century-Crofts.
- Neuman, B. (1989). *The Neuman Systems Model (2nd ed.)*. Norwalk, Connecticut: Appleton & Lange.

- Norman, R. (1986). *The nature and correlates of health behavior*. Ottawa, Ontario: Health and Welfare Canada.
- Paolino, T. J., McCrady, B. S. & Kogan, K. B. (1978). Alcoholic marriages: A longitudinal empirical assessment of alternative theories. *British Journal of Addiction*, 73, 129-138.
- Revill, S. I., Robinson, J. O., Rosen, M. & Hogg, M. I. J. (1976). The reliability of a linear analogue for evaluating pain. *Anesthesia*, 31, 1191-1198.
- Ruderman, A. J. (1983). Obesity, anxiety, and food consumption. *Addictive Behaviors*, 8, 235-242.
- Steinglass, P. (1981). The impact of alcoholism on the family: Relationship between degree of alcoholism and psychiatric symptomatology. *Journal of Studies on Alcohol*, 42, 288-303.
- Whalen, T. (1953). Wives of alcoholics: Four types observed in a family service agency. *Journal of Studies on Alcohol*, 14, 632-641.
- Whitfield, C.L. (1984). Co-alcoholism: Recognizing a treatable illness. *Community Health*, 9, 16-27.
- Wilson, D. M. C. & Ciliska, D. (1984). Lifestyle assessment: Development and use of the FANTASTIC Checklist. *Canadian Family Physician*, 30, 1527-1532.
- Wilson, D., Evans, C. E., Marshall, J., Ciliska, D., Delmore, B., Lawson, D., McMurray, L. & Wilson, L. (1983). The FANTASTIC Lifestyle Questionnaire: Development and Preliminary Evaluation. In F. Landry (Ed.) *Health risk estimation, risk reduction and health promotion* (pp. 665 -670). Ottawa: Canadian Public Health Association.
- Wilson-Schaefer, A. (1986). *Co-dependence: Misunderstood - mistreated*. San Francisco: Harper & Row, 1986.
- Wingard, D. L., Berkman, L. F. & Brand, R. J. (1982). A multivariate analysis of health-related practices: A nine-year mortality follow-up of the Alameda County study. *American Journal of Epidemiology*, 116, 765-775.

RÉSUMÉ

Niveaux de stress et facteurs affectant la santé chez les femmes d'alcooliques

Une étude descriptive et corrélationnelle a été réalisée pour étudier les niveaux perçus de stress et le mode de vie de femmes d'alcooliques en traitement, ainsi que le lien entre ces deux variables. Un échantillon de commodité de 30 femmes d'alcooliques a pris part à l'étude. Les résultats ont fait ressortir une faible relation négative entre les niveaux perçus de stress et le mode de vie. La plupart des femmes disaient être soumises à un stress élevé; la majorité d'entre elles avaient un régime de vie sain.

COMING EVENTS

SECOND INTERNATIONAL SYMPOSIUM ON PEDIATRIC PAIN

Montreal, Quebec
April 23-27, 1991

For further information:

Pain Secretariat
3450 University Street, Montreal, Quebec, H3A 2A7
Tel: (514) 398 3770 Fax: (514) 398 4854
Telex: 05-268510 E-Mail: PAIN@CO.LAN.MCGILL.CA

Third Management of Nursing Practice Research Conference *"Changing Tides"*

Sponsored by the Nursing Division, Victoria General Hospital,
Halifax, Nova Scotia.

The conference will be held January 24 & 25, 1991 at the Chateau
Halifax. Keynote speaker will be Dr. Joy Calkin, R.N., Ph.D. (Health
Services Administration), Vice-President, University of Calgary.

For further information:

Dawn Miller, R.N., B.N.
Room 341, Bethune Building, Victoria General Hospital
1278 Tower Road, Halifax, Nova Scotia, B3H 2Y9

Qualitative Health Research Conference

An international, interdisciplinary conference to explore issues in
qualitative methods and latest qualitative health research will be held
at:

West Edmonton Mall, Edmonton, Alberta, Canada
February 22-23, 1991

For further information:

Dr. J. Morse, Conference Convener
Faculty of Nursing, University of Alberta
Third Floor Clinical Sciences Building
Edmonton, Alberta, T6G 2G3

CALL FOR PAPERS AND POSTERS

Canadian Association for the History of Nursing (CAHN)
Association canadienne pour l'histoire du nursing (ACHN)

Fourth Annual Conference - Kingston, Ontario

June 7-9, 1991

Abstracts of papers and poster presentations related to the history of nursing are requested. Abstracts should include identification of the purposes of the study, rationale and significance of the study, description of method, identification of primary and secondary sources, findings and conclusion. Four copies of the abstract, to be received by February 4, 1991, should be submitted to:

Joyce MacQueen
220 Ste. Anne Road
Sudbury, Ontario, P3C 5M3

International Conference on Primary Obstetrics Care and Perinatal Health 21-22 March, 1990

Place: 's Hertogenbosch, The Netherlands

Organized by: The Netherlands Institute for Primary Health Care
as WHO collaborating Centre for Primary Health Care

Information: NIVEL, L.Hingstman, Ph.D.

P.O. Box 1568, 3500 BN, Utrecht, The Netherlands

Telephone: ..-31-30-319946; ..-31-30-319290