



UNIVERSITI PUTRA MALAYSIA

**EFFECTS OF EDUCATIONAL INTERVENTION PERTAINING TO
KNOWLEDGE, BELIEFS, BARRIERS AND PRACTICES ON BREAST
CANCER SCREENING BEHAVIORS AMONG TEACHERS IN
SELANGOR, MALAYSIA**

PARISA PARSA

FPSK(P) 2008 3



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SELANGOR, MALAYSIA.**

By

PARISA PARSA

**Thesis Submitted to the School of Graduate Studies, Universiti Putra
Malaysia, in Fulfilment of the Requirements for the Degree of Doctor
Philosophy**

FEBRUARY 2008



DEDICATIONS

This thesis is dedicated to:

My parents, Mr. Seyed Mohamadali Parsa and Mrs. Zahra Mehraban for their continuous support with love and kindness. They always inspired me to be a successful and educated person.

All teachers who had participated in this project for their support, cooperation and courage making my ambition and dreams come true.

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Doctor of Philosophy

EFFECTS OF EDUCATIONAL INTERVENTION PERTAINING TO KNOWLEDGE, BELIEFS, BARRIERS AND PRACTICES ON BREAST CANCER SCREENING BEHAVIORS AMONG TEACHERS IN SELANGOR, MALAYSIA.

By

PARISA PARSA

February 2008

Chairman: Associate Professor Mirnalini Kandiah, PhD

Faculty: Medicine and Health Sciences

Breast cancer (BC) is the leading cause of cancer death among Malaysian women. Early detection of breast cancer can play an important role in reducing cancer morbidity and mortality. However participation of women in breast cancer screening (BCS) is low in Malaysia. Studies have shown greater risk of breast cancer among women teachers compared to other occupations. The objective of this randomised controlled trial study was to develop and evaluate the effect of an educational intervention to improve knowledge, beliefs, barriers and practices on breast cancer screening among female secondary school teachers in Selangor, Malaysia. A multi-stage random sampling was used for selection of secondary schools in Selangor (4 control schools and 4 intervention schools). All female teachers in the selected schools were invited to participate in the study with informed consent form. Baseline data were collected from 237 (52%) teachers on socio-demographic background, knowledge, beliefs and practices on breast cancer screening. A translated, reliable and valid tool adapted from Champion's Health Belief Model was used to determine women's perceptions on BC and BCS. An



educational intervention of four months duration comprised a one day seminar supported by an educational model, presentations, brochures, telephone follow-up motivation sessions, and practical demonstration on breast self examination (BSE) and clinical breast examination (CBE) techniques. The control group received all of the informational material after the completion of the study. To evaluate the effect of the intervention data were collected at baseline, immediately, one month and four months after intervention for both groups. Descriptive and multivariate statistics were used for analysing the data using SPSS version 14. The mean age of participants was 37.8 years (SD=7.2) and majority of them were Malay (84%), married (88%) with tertiary education (90%). After intervention, there was a significant increase in the mean score of knowledge (20.7-28.3, $p<0.001$), beliefs (215.2-225.1, $p<0.001$) and proportion of BSE (53.4%-87%, $p<0.001$), CBE (23.3%-37%, $p<0.01$) and mammography practices (3.4%-10.3% $p<0.01$,) over the four months follow up in the intervention group. Lack of knowledge (45%-15%, $p<0.001$), being busy (37%-28%, $p<0.01$) and not interested (7%-2%, $p<0.01$) were the most common barriers to BCS before intervention but these decreased significantly after intervention. Grounded Health Belief Model (HBM) constructs significantly increased for perceived susceptibility, seriousness, confidence and benefits of mammography and decreased in barriers for BSE and mammography was observed in the intervention group but HBM did not predict the BCS behaviours. The logistic regression model showed that change in knowledge score was the predictor of the uptake of BCS practices. The change in knowledge score on risk factors of BC (OR=1.663), screening methods (OR=1.145) and symptoms of BC (OR=1.729) were predictors of BSE, CBE and mammography utilization, respectively. With the exception of a significant

change in BSE practice (58.7%-77.9%, $p < 0.001$) the control group showed no significant improvement in all other aspects. These results provide evidence for the effectiveness an educational intervention using a multi-component approaches in promoting breast cancer screening knowledge, beliefs and practices within an educated group as tteachers represent a large portion of educated women in Malaysia. This study suggests that women's knowledge on BCS can improve breast cancer screening behaviors. In addition availability and affordability of screening services and their cost need to be addressed for promoting breast cancer screening behaviors in Malaysian women.

Abstrak tesis yang dikemukakan kepada senat Universiti Putra Malaysia untuk memenuhi syarat mendapatkan ijazah Doktor Falsafah.

**KESAN PROGRAM INTERVENSI PENDIDIKAN MERANGKUMI
PENGETAHUAN, KEPERCAYAAN, HALANGAN DAN AMALAN
TERHADAP PENYARINGAN KANSER PAYUDARA DI KALANGAN
GURU-GURU PEREMPUAN DI SELANGOR, MALAYSIA.**

Oleh

PARISA PARSA

Februari 2008

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Kanser payudara (KP) merupakan penyebab utama kematian akibat kanser di kalangan wanita Malaysia. Pengesanan awal kanser payudara memainkan peranan penting dalam penurunan kadar morbiditi dan mortaliti disebabkan kanser. Walau bagaimanapun, penglibatan golongan wanita dalam penyaringan kanser payudara (PKP) adalah rendah di Malaysia. Banyak kajian telah menunjukkan risiko kanser payudara lebih tinggi di kalangan guru perempuan berbanding jenis pekerjaan yang lain. Oleh itu, objektif kajian kawalan rawak (*randomised controlled trials*) ini adalah untuk membentuk dan menilai kesan intervensi pendidikan untuk meningkatkan tahap pengetahuan, kepercayaan, halangan dan amalan terhadap penyaringan kanser payudara di kalangan guru-guru perempuan sekolah menengah di Selangor, Malaysia. Kaedah persampelan rawak berperingkat telah digunakan untuk mengenalpasti sekolah-sekolah menengah di Selangor (4 sekolah kawalan, 4 sekolah intervensi). Semua guru perempuan di sekolah yang terpilih telah dijemput untuk menyertai kajian ini dengan dengan persetujuan. Data peringkat awal (*baseline*) telah dikumpulkan daripada 237 (52%) orang guru berkenaan latar-belakang sosio-demografi, tahap pengetahuan, kepercayaan dan amalan terhadap

penyaringan kanser payudara. Alat bantuan yang telah diterjemahkan, boleh dipercayai dan disahkan, yang diadaptasi daripada *Champion's Health Belief Model*, telah digunakan untuk menentukan persepsi golongan wanita terhadap KP dan PKP. Satu intervensi pendidikan telah dijalankan selama empat bulan yang terdiri daripada seminar satu hari, dibantu oleh model pendidikan, pembentangan *Powerpoint*, risalah, motivasi susulan melalui telefon, demonstrasi pemeriksaan sendiri payudara (PSP) dan teknik-teknik pemeriksaan klinikal payudara (PKLP). Kumpulan kawalan hanya menerima semua maklumat pengetahuan selepas kajian dijalankan. Untuk menilai kesan intervensi, data telah dikumpulkan pada peringkat awal (*baseline*), sebaik sahaja selepas kajian dijalankan, satu bulan dan seterusnya empat bulan selepas program intervensi bagi kedua-dua kumpulan. Analisis statistik dan multivariat telah digunakan dalam analisis data menggunakan perisian SPSS versi 14. Min umur responden adalah 37.8 tahun ($SD=7.2$) dan majoritinya berbangsa Melayu (84%), telah berkahwin (88%) dan mempunyai pendidikan tertier (90%). Selepas intervensi dijalankan, terdapat peningkatan yang signifikan terhadap purata skor pengetahuan (20.7 – 28.3, $p<0.001$), kepercayaan (215.2 – 225.1, $p<0.001$) dan proporsi PSP (53.4% - 87%, $p<0.001$), PKLP (23.3% - 37%, $p<0.01$) dan amalan mammografi (3.4% - 10.3%) di kalangan kumpulan intervensi, empat bulan selepas kajian dijalankan. Kurang pengetahuan (45% - 15%, $p<0.001$), sibuk (37% - 28%, $p<0.01$) dan tidak berminat (7% - 2%, $p<0.01$) merupakan halangan-halangan kepada penyaringan kanser payudara sebelum intervensi dijalankan tetapi mengalami penurunan yang signifikan selepas program intervensi tamat. Binaan-binaan asas bagi *Health Belief Model (HBM)* (Grounded Health Belief Model (HBM) construct) bagi kesedaran, keseriusan, keyakinan dan kepentingan mammografi mengalami peningkatan yang signifikan manakala

halangan-halangan kepada PSP dan mammografi pula mengalami penurunan di kalangan kumpulan intervensi, namun HBM tidak dapat menentukan tingkah laku PKP. Model *logistic regression* menunjukkan bahawa perubahan skor pengetahuan merupakan penentu kepada amalan PKP. Perubahan skor pengetahuan terhadap faktor risiko KP (OR=1.663), kaedah-kaedah penyaringan (OR=1.145) dan simptom-simptom KP (OR=1.729) merupakan penentu-penentu PSP, PKLP dan amalan mammografi masing-masing. Kumpulan kawalan tidak menunjukkan peningkatan yang signifikan dalam pelbagai aspek lain kecuali dalam amalan PSP (58.7%-77.9%, $p < 0.001$). Hasil kajian ini menunjukkan keberkesanan program intervensi pendidikan menggunakan pendekatan pelbagai komponen untuk meningkatkan tahap pengetahuan, kepercayaan dan amalan penyaringan kanser payudara di kalangan golongan terpelajar, kerana guru mewakili sebahagian besar golongan wanita terpelajar di Malaysia. Kajian ini mencadangkan bahawa pengetahuan golongan wanita terhadap PKP dapat memperbaiki tingkah-laku penyaringan kanser payudara. Selain itu, keboleh-dapatan dan kemampuan untuk mendapatkan perkhidmatan-perkhidmatan penyaringan dan kosnya perlu diberi perhatian untuk mempromosikan tingkah-laku penyaringan kanser payudara di kalangan wanita di Malaysia.

ACKNOWLEDGEMENTS

First and foremost, all praises to Allah the Almighty for giving me the strength and utmost courage to complete this thesis. It is by his wish that this humble work has been completed.

I would like to sincerely express my greatest gratitude to my supervisor, Associate Professor Dr. Mirnalini Kandiah for her assistance, guidance, encouragement and endless support throughout this research. I would also like to express my deepest appreciation to my co-supervisors Dr. Mohd Nasir Mohd Taib, Dr. Hejar bte. Abdul Rahman and Dr. Nor Afiah bte. Mohd Zulkefli for their valuable advice and guidance that gave me impetus to complete this thesis on time.

My thanks also go to the Dean and Deputy Dean of Research of Graduate Studies, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia for all their support to do this study. My sincere thanks also go to all coordinators and teachers in the selected secondary schools for their co-operation through the study.

I wish to express my deepest gratitude to Hamedan University of Medicine and Health Sciences, Iran for giving me this opportunity to pursue my study. Besides, I would like to thank my colleagues for their kind assistances and supports.

Finally, I would like to offer my warmest thanks to my parents and siblings for their constant encouragement, understanding and support throughout my life and this study.

I certify that an Examination Committee met on **1st February 2008** to conduct the final examination of **Parisa Parsa** on her Doctor of Philosophy thesis entitled **“Effects of educational intervention pertaining to knowledge, beliefs, barriers, and practices on breast cancer screening behaviors among teachers in Selangor, Malaysia”** in accordance with Universiti Pertanian Malaysia (Higher Degree) Act 1980 and Universiti Putra Malaysia (Higher Degree) Regulation 1981. The committee recommends that the candidate be awarded the relevant degree. Members of the Examination Committee are as follows:

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DECLARATION

I declare that this thesis is my original work except or quotations and citation which have been duly acknowledged. I also declare that it has not been previously, and is not concurrently, submitted for any other degree at Universiti Putra Malaysia or at any other institution.

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Date: 24 March 2008



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LIST OF ABBRIVATIONS

ASR	Age-standardized Incidence Rate
BC	Breast Cancer
BCS	Breast Cancer Screening
BSE	Breast Self Examination
CBE	Clinical Breast Examination
CHBMS	Champion's Health Belief Model Scale
CI	Confidence Interval
CR	Crude Incidence Rate
HBM	Health Belief Model
HHS	Health Human Services
IACR	International Association of Cancer Registry
IARC	International Agency for Cancer Research
NCR	National Cancer Research
NBSS	National Breast Screening Study
OR	Odds Ratio
RR	Relative Ratio
WHO	World Health Organization



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Faculty: Medicine and Health Sciences

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constructs significantly increased for perceived susceptibility, seriousness, confidence and benefits of mammography and decreased in barriers for BSE and mammography was observed in the intervention group but HBM did not predict the BCS behaviours. The logistic regression model showed that change in knowledge score was the predictor of the uptake of BCS practices. The change in knowledge score on risk factors of BC (OR=1.663), screening methods (OR=1.145) and symptoms of BC (OR=1.729) were predictors of BSE, CBE and mammography utilization, respectively. With the exception of a significant change in BSE practice (58.7%-77.9%, $p < 0.001$) the control group showed no significant improvement in all other aspects. These results provide evidence for the effectiveness an educational intervention using a multi-component approaches in promoting breast cancer screening knowledge, beliefs and practices within an educated group as teachers represent a large portion of educated women in Malaysia. This study suggests that women's knowledge on BCS can improve breast cancer screening behaviors. In addition availability and affordability of screening services and their cost need to be addressed for promoting breast cancer screening behaviors in Malaysian women.

