



SOJNR

SOUTHERN ONLINE JOURNAL OF NURSING RESEARCH

Volume 10 – Number 3

www.snrs.org

***TESTING A COMMUNITY DERIVED INTERVENTION TO PROMOTE
WOMEN'S HEALTH: PRELIMINARY RESULTS OF A 3-ARM RANDOMIZED
CONTROLLED TRIAL IN KARACHI, PAKISTAN***

Saima Shams Hirani, MS, RN
Senior Instructor, The Aga Khan University, Karachi

Rozina Karmaliani, PhD, RN
Associate Professor, The Aga Khan University, Karachi

Judith McFarlane, Dr.PH., RN
Professor, Texas Woman's University, Houston, Texas

Nargis Asad, PhD
Assistant Professor, The Aga Khan University, Karachi, Pakistan

Farhana Madhani, MS, RN
Assistant Professor, The Aga Khan University, Karachi

Shireen Shehzad, BScN
Instructor/Research Coordinator, The Aga Khan University, Karachi

Acknowledgements

The researchers gratefully acknowledge the community members, key informants, and focus group participants of Bilal Colony in Karachi, Pakistan for their participation. We thank the Sindh Education Foundation for their partnership toward adult literacy for women. This research is funded through a grant from The Aga Khan University Research Council. The researchers thank Dr. Yasmin Amarsi, Dean, The Aga Khan University School of Nursing, East Africa for funding the preparatory field work for this research, and Dr. Linda Wright, Director of the Global Network for Women's and Children's Health Research for challenging us to the task.

Abstract

Depression and domestic abuse are serious problems for women throughout the world. There is some evidence that skills in economic independence may empower women in developing countries. There is a need to determine if such skill-building may help women to improve mental health and decrease victimization by domestic violence. A 3-arm randomized controlled trial tested the differential effectiveness of an 8-week community-derived intervention of Economic Skill Building (ESB), developed through community based participatory methods, and an empirically tested 8-week counseling model. Cluster random assignment was used to assign urban economically disadvantaged women in Pakistan to ESB, counseling, and control groups. Outcome measures included depression, measured by the Beck II, self-reports of abuse, self efficacy as measured on the General Self-Efficacy Scale, and self-reported employment status. Twenty four women completed signed informed consent and completed outcome measures. Women in ESB (n=9) reported statistically significantly higher ($p<.05$) self efficacy scores, as compared to counseling (n=7) and control group women (n=8) and more employment. Depression and abuse were also lowest among women who received the ESB intervention, though differences were not statistically significant. The results indicate ESB is a potentially effective intervention to improve mental health and decrease violence among urban poor women.

Keywords: women, mental health, randomized controlled trial, community-based intervention, economic skill building

TESTING A COMMUNITY DERIVED INTERVENTION TO PROMOTE WOMEN'S HEALTH: PRELIMINARY RESULTS OF A 3-ARM RANDOMIZED CONTROLLED TRIAL IN KARACHI, PAKISTAN

Background and Purpose

The World Health Organization's proposition of "No health without mental health" has recognized mental health as a significant component of overall health.¹ The epidemic burden of mental illness is drawing the attention of health care providers worldwide for evidence-based interventions to promote mental health. The global health burden of mental disorders is enormous with women twice as likely to experience depression as men.² Depression is the most frequently encountered women's mental health problem, and ranks as the most important women's health problem worldwide.^{3,4} Statistics from Pakistan confirm the presence of depression among Pakistani women and indicate the need for effective interventions to reduce the incidence and prevalence.⁵⁻⁷

Depression and partner violence coexist for many women.⁸⁻¹¹ Depression and partner violence not only affect women but also have negative intra-generational effects. Children of depressed mothers have been observed with a variety of developmental, behavioral, and mental health problems when compared with children whose mothers are not depressed.^{12,13} Similarly, children who witness

partner violence or whose mothers are victimized by violence have major problems with social skills, learning, depression, and aggression.^{14,15}

A strong inverse relationship also exists between social position and mental health outcomes. Adverse health outcomes are two to two and one-half times higher among persons in the most disadvantaged social position compared to persons in the highest social strata.¹⁶ The link between mental health and low income among urban women in developing countries is well documented.^{17,18} Further, women from low socioeconomic strata, who have little or no formal education depend almost exclusively on their male family members. This financial dependence is frequently associated with helplessness, fear and insecurity, and position the women at more vulnerable for poor mental health. Several reports from the United Nations, World Health Organization, and World Bank note that worldwide 70% of women live in poverty and earn only 10% of the world's total income.¹⁹ The Millennium Development Goals (MDGs) set for 2015 clearly connect women's empowerment with the achievement of global health for all. The key to women's autonomy is considered education and employment.²⁰

The most recent world health report, *Make Every Mother and Child Count*, stresses an urgent need for community outreach programs that deal effectively with the changing spectrum of problems that determine health.²¹ To derive community-based programs for better health, community-based participatory research (CBPR) is posited as a collaborative approach effective to enhance community empowerment.²² The process of CBPR actively engages community residents, utilizes their understanding of health problems to bring a sustainable social change to positively impacting the health problems.²³ Despite the many advantages of CBPR we identified no prior research that applied CBPR to address MDGs, especially the empowerment of women for better mental health and improved child functioning in Pakistan.

The purpose of this research is to provide an evidence based intervention to address the primary health problems confronting women in Pakistan and worldwide: depression and violence. Specifically, we tested the differential effectiveness of a community-derived intervention of Economic Skill Building (ESB), developed through community based participatory methods^{24,25} against an evidence-based empirically tested counseling model.²⁶

Null Hypothesis

The null hypothesis for the study was, "There is no difference in the level of depression, domestic violence, self-efficacy, and employment among women in adult literacy programs who receive a Community Health Worker (CHW) delivered 8-week counseling program compared to women who receive a CHW delivered 8-week economic skill building program, compared to women who do not receive an intervention."

Methods

The study was conducted in an inner-city slum area of Karachi, Pakistan, a sprawling metropolis of 18 million residents located on the Arabian Sea. The community was selected for economic skill-building intervention testing due to the availability of nearby factories and employment opportunities for women following the economic skill-building.

The community was eager to participate in the intervention testing, and three Adult Literacy Centres (ALCs) were established in each of the randomly selected cluster areas. Maintaining the principles of CBPR and community partnerships with shared responsibilities,²⁷ the community participated in the decision making process regarding placement of ALCs as well as days and time when the interventions were offered. The participant women were recruited from the three ALCs with one centre devoted to the counseling intervention, one to economic skill-building, and one to the control group.

With a large diverse population, a three-arm randomized controlled trial with cluster randomization sampling was followed, whereby blocks of similar ethnic, language, and cultural affiliated families were randomized to an intervention. The cluster randomized control trial is increasingly acknowledged in the area of public health research.²⁸ A large number of studies support the premise that for behavioral interventions, though the outcome will be measured at the individual level, individual randomization may lead to high rates of contamination. However, cluster randomized trials can often prevent contamination between intervention and control groups.²⁹⁻³¹ Since our study was conducted in a densely populated urban community, randomization at the individual level could result in women randomly assigned to different intervention groups living next door. Therefore, intra-class sampling was followed to maximize homogeneity and decrease the variance in the data. For intra-class sampling, the community was divided into eighteen clusters. Each cluster was defined according to residents with a similar socio-economic status, ethnicity, education, and income level. Three sets of two adjacent similar clusters were randomly assigned to the interventions of economic skill-building, counseling and control group. Each cluster had several hundred adult women. The randomization took place maintaining the community based participatory approach and the internal validity of the research remained strong.

Interventions

The interventions of economic skill-building and counseling were delivered through the trained community health workers for 8 weeks, one session per week at the adult literacy centres randomly selected for these interventions. The economic skill-building intervention was developed with the help of key informants from the community and a thorough literature review. The economic skill-building intervention included skills for employment attainment and retention

such as, effective communication, balancing personal and work life and time management, conflict resolution, dealing with abuse and harassment, enhancing self efficacy, effective parenting, and personal hygiene and grooming.²⁵

Group counseling comprised the second intervention. The empirically tested counseling module was delivered weekly for eight weeks.²⁶ The key components of the module included stress and anger management, effective communication, active listening and supportive problem-solving.

For both the interventions, the training of the community health workers was conducted by the research team for a period of twenty one hours which included skill-building on components of the intervention as well as research ethics of privacy and confidentiality. The control group received no intervention.

Instruments

A demographic survey³² included the woman's age, educational and employment status, number of household members and monthly income.

Depression was measured with the Beck Depression Inventory, II (BDI-II),³³ which is a 21 item self-report measure of depressive symptomatology within the last 14 days. Total score can range from 0 to 63; higher scores indicate a greater number of depressive symptoms. When the recommended cut score for depression of 14 is used, a sensitivity of 83 and specificity of 88³⁴ results in a U.S. population and an equally high sensitivity and specificity with a non-US population.³⁵

Partner violence was measured with an instrument developed by World Health Organization guidelines and modified based on the Pakistani national gender indicators list for violence against women.³² The questionnaire addresses the frequency of verbal, physical, and sexual violence within the last six months. Partner violence is reported as the percentages of positive responses for any type of violence by each group.

Self-efficacy was measured with the General Self-Efficacy Scale (GSE).³⁶ This 10-item instrument assesses a general sense of perceived self-efficacy with the aim to predict coping and adaptation after stressful life events. The possible range of scores is 10 to 40. Criterion-related validity is documented in numerous correlation studies and in samples from 23 countries, Cronbach's alphas ranged from .76 to .90, with the majority in the high .80s.³⁶

Procedures

Following Institutional Review Board approval, women in adult literacy programs in each of the randomly chosen clusters were recruited into the study. Following the signing of informed consent, women received 8 weeks of counseling or

economic skill-building. Women received the outcome instruments two weeks following the final intervention class. Analysis consisted of one-way Analysis of variance (ANOVA) to test the differences between means scores on the Beck I and General Self-Efficacy Scale. A chi square tested the difference between the number of women in each group reporting partner violence.

Results

Twenty four women began and completed the first 8-week intervention sessions and outcome measures, specifically 7 women received counseling, 9 women received economic skill- building, and 8 women were in the control group. No significant differences existed in demographic characteristics between the groups. Most of the women were between 25 and 35 years of age. Most women reported less than 4 years of formal education and most women were not employed. Household size was between 6 and 10 persons for most women and monthly household income averaged \$55.00 dollars US.

Table 1 presents the employment data before and after the interventions and Table 2 presents the depression and self efficacy mean scores and standard deviations by group as well as percentage of women reporting any type of partner violence. Among the first 24 women who completed the intervention, women who received economic skill-building reported lower depression scores and less partner violence, although the differences were not statistically significant. Women in the economic skill-building group reported significantly higher ($p < .05$) self efficacy and more employment following the intervention as compared to the counseling and the control group women.

Conclusion

This study documents improved self efficacy and employment for women enrolled in economic skill-building compared to general counseling. Though less depression and abuse were recorded among women in economic skill-building compared to counseling, the differences were not statistically significant. Although preliminary results are based on a small sample and presented with caution, findings are encouraging. Women who received economic skill-building reported a 22% gain in employment and significantly higher ($p < .05$) self-efficacy.

To promote global women's mental health and interrupt violence, culturally sensitive community derived evidence based interventions are required. The community based participatory approach used in this study facilitated the community's involvement in establishing ALCs and developing the intervention of economic skill-building. The methodology of cluster randomization maintained the internal validity of the research by preventing the contamination of interventions among the study groups.

References

1. World Health Organization. (2007 a). *Mental health: Strengthening mental health promotion*. Retrieved April 21, 2009, from <http://www.who.int/mediacentre/factsheets/fs220/en/index.html>.
2. World Health Report. (2000). *Women's mental health: An evidence based review*. Geneva. Switzerland: World Health Organization.
3. World Health Report. (2001). *Mental health: New understanding, new hope*. Retrieved May 20, 2009, from http://www.who.int/whr/2001/en/whr01_en.pdf.
4. World Health Organization. (2008). *The global burden of diseases*. Retrieved April 14, 2009, from http://www.searo.who.int/LinkFiles/Reports_GBD_report_2004update_full.pdf.
5. Mumford, D. B., Minhas, F. A., Akhtar, I., Akhter, S., & Mubbashar, M. H. (2000). Stress and psychiatric disorder in urban Rawalpindi. Community survey. *British Journal of Psychiatry*, 177, 557-562.
6. Mirza, I., & Jenkins, R. (2004). Risk factors, prevalence, and treatment of anxiety and depressive disorders in Pakistan: Systematic review. *British Medical Journal*, 328, 1-5.
7. Hussain, N., Gater, R., Tomenson, B., & Creed, F. (2004). Social factors associated with chronic depression among a population based sample of women in rural Pakistan. *Social Psychiatry Psychiatric Epidemiology*, 39, 618-624.
8. Nixon, R. D., Resick, P. A., & Nishith, P. (2004). An exploration of comorbid depression among female victims of intimate partner violence with posttraumatic stress disorder. *Journal of Affective Disorders*, 82, 315-320.
9. Stein, M. B., & Kennedy, C. (2001). Major depressive and post-traumatic stress disorder comorbidity in female victims of intimate partner violence. *Journal of Affective Disorder*, 66, 133-138.
10. Hegarty, K., Gunn, J., Chondros, P., & Small, R. (2004). Association between depression and abuse by partners of women attending general practice: Descriptive, cross sectional survey. *British Medical Journal*, 328, 621-624.
11. McFarlane, J. M., Malecha, A., Watson, K., Gist, J., Batten, E., Hall, I., & Smith, S. (2005). Intimate partner sexual assault against women: frequency, health consequences, and treatment outcomes. *Obstetrics & Gynecology*, 105, 99-108.
12. Herwig, J. E, Wirtz, M., & Bengel, J. (2004). Depression, partnership, social support, and parenting: interaction of maternal factors with behavioral problems of the child. *Journal of Affective Disorders*, 80, 199-208.
13. Kim-Cohen, J., Mofftt, T. E., Taylor, A., Pawlby, S. J., & Caspi, A. (2005). Maternal depression and children's antisocial behavior: nature and nurture effects. *Archives of General Psychiatry*, 62, 173-81.
14. Hurt, H., Malmund, E., Brodsky, N. L., & Giannetta, J. (2001). Exposure to violence: psychological and academic correlates in child witnesses. *Archives of Pediatric & Adolescent Medicine*, 155, 1351-56.

15. McFarlane, J. M, Groff, J. Y., O'Brien, J. A, & Watson, K. (2003). Behaviors of children who are exposed and not exposed to intimate partner violence: an analysis of 330 black, white, and Hispanic children. *Pediatrics*, 112(3), 202-7.
16. Bartley, M., & Owen, C. (1996). Relation between socioeconomic status, employment and health during economic change. *British Medical Journal*, 313, 445-449.
17. Thara, R., & Patel, V. (2006). Women's mental health: a public health concern. *Regional Health Forum WHO South-East Asia Region*, 5(1). Retrieved April 15, 2009, from http://www.searo.who.int/LinkFiles/Regional_Health_Forum_Volume_5_No.-1.pdf.
18. Patel, V., & Kleinman, A. (2003). Poverty and common mental disorders in developing countries. *Bulletin of the World Health Organization*, 81, 609-615.
19. Care, D. M. (2005). *Women empowerment*. Retrieved January, 2009, from http://www.care.org/newsroom/publications/whitepapers/woman_and_empowerment.pdf.
20. World Health Organization. (2005 a). *Addressing violence against women and achieving the Millennium Development Goals*. Retrieved May 19, 2008 from http://whqlibdoc.who.int/hq/2005/WHO_FCH_GWH_05.1.pdf.
21. World Health Report. (2006). *Make every child and mother count*. Retrieved May 12, 2009, from http://www.who.int/whr/2005/whr2005_en.pdf.
22. Downey, L. H., Castellanos, D. C., Yadrick, K., Avis-Williams, A., Graham-Kresge, S., & Bogle, M. (2010). Perceptions of community based participatory research in the delta nutrition intervention research initiative: an academic perspective. *Health Promotion Practice*. Retrieved June 15, 2010, from <http://hpp.sagepub.com/cgi/rapidpdf/1524839909353743v1.pdf>.
23. Faridi, Z., Grunaum, J.A., Gray, S., Franks, A., & Simoes, E. (2007). Community based participatory research: Necessary next steps. *Preventing Chronic Disease Public Health Research, Practice & Policy*, 4, A70.
24. Karmaliani, R., McFarlane, J., Asad, N., Madhani, F., Hirani, S., Shehzad, S., & Ali, N. A. (2009). Applying community based participatory research methods to improve maternal and child health in Karachi, Pakistan. *Nursing Outlook*, 57, 204-209.
25. Hirani, S. S., Karmaliani, R., McFarlane, J., Asad, N., Madhani, F., Shehzad, S., et al. (2010). Development of an economic skill building intervention to promote women's safety and child development in Karachi, Pakistan. *Issues in Mental Health Nursing*, 31, 82-88.
26. Ali, S. B., Rahbar, M. H., Naeem, S., Gul, A., Mubeen, S., & Iqbal, A. (2003). The effectiveness of counseling on anxiety and depression by minimally trained counselors: A randomized control trial. *American Journal of Psychotherapy*, 57(3), 324-336.
27. Macaulay, A. C., Commanda, L.E., Freeman, W. L., Gison, N., McCae, M. L., Robbins, C. M., & Twolhig, P. L. (1999). Participatory research

- maximizes community and lay involvement. *British Medical Journal*, 319, 774-778.
28. Donner, A., & Klar, N. (2004). Pitfalls of and controversies in cluster randomization trials. *American Journal of Public Health*, 94, 416-422.
 29. Campbell, M. K., Mollison, J., Steen, N., Grimshaw, J. M., & Eccles, M. (2000). Analysis of cluster randomized trials in primary care: a practical approach. *Family Practice*, 17(2), 192-196.
 30. Torgerson, D., J. (2001). Contamination in trials: is cluster randomisation the answer? *British Medical Journal*, 322, 355-357.
 31. Elley, C. R., Chondros, P., & Kerse, N. M. (2004). Randomised trials-cluster versus individual randomisation. *Australian Family Physician*, 33(9), 759-763.
 32. Karmaliani, R., Irfan, F., Bann, C. M., McClure, E. M., Moss, N., Pasha, O., & Goldenbert, R. L. (2008). Domestic violence prior to and during pregnancy among Pakistani women. *Acta Obstetrica et Gynecologica Scandinavica*, 87(11), 1194-1201.
 33. Beck, A. T., Steer, R. A., & Brown, G. K. (1996). *Beck depression inventory*. Retrieved March 4, 2009, from <http://www.cps.nova.edu/~cpphelp/BDI2.html>.
 34. Low, G.D., & Hubley, A.M. (2006). Screening for depression after cardiac events using the Beck depression inventory-II and the geriatric depression scale. *Social Indicators Research*, 82:527-543.
 35. Kapci, E. G., Uslu, R., Turkcapar, M. D., & Karaoglan, A. (2007). Beck Depression Inventory II: Evaluation of the psychometric properties and cut off points in a Turkish adult population. *Depression and Anxiety*, 25(10), E104-110.
 36. Schwarzer, R., & Jerusalem, M. (1995). Generalized self-efficacy scale. In J. Weinman, S. Wright, M. Johnston. (Eds.). *Measures in health psychology: A user's portfolio. Causal and control beliefs* (pp. 35-37). Windsor, UK: NFER-NELSON.

Table 1. Employment Before and After an 8-Week Intervention

Employment Status	Economic Skills-Building (n=9)	Counseling (n=7)	Control (n=8)
	n (%)	n (%)	n (%)
Before Intervention	1 (11%)	3 (33%)	1
After Intervention	3 (33%)	2 (22%)	(12%)

			1 (12%)
--	--	--	------------

Table 2. Statistics for Depression, Self-Efficacy, and Partner Violence following an 8-Week Intervention

Outcomes	Economic Skills-Building (n=9)	Counseling (n=7)	Control (n=8)	F
	Mean (SD)	Mean (SD)	Mean (SD)	
Depression Score	20.1(11.3)	24.71(10.9)	27.63(9.1)	1.087
Self efficacy Score	28.7(6.2)	19.00(9.3)	21.63(3.8)	4.65*
	%	%	%	Chi - Square
Percent Reporting any Violence	33.33%	57.1%	66.66%	1.643