

Evidence-Based Journal Article Presentation

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Citation

Intervention impact on depression product appraisal and purchasing behavior by employers: a randomized trial

Kathryn M Rost, Donna Marshall and Stanley Xu
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Article abstract

Abstract

Background: Employers can purchase high quality depression products that provide the type, intensity and duration of depression care management shown to improve work outcomes sufficiently for many employers to achieve a return on investment. The purpose of this randomized controlled trial was to test an intervention to encourage employers to purchase a high quality depression product for their workforce.

Methods: Twenty nine organizations recruited senior health benefit professional members representing public or private employers who had not yet purchased a depression product for all 100+ workers in their company. The research team used randomization blocked by company size to assign eligible employers to: (1) a presentation encouraging employers to purchase a high quality depression product accompanied by a scientifically-derived return on investment estimate, or (2) a presentation encouraging employers to work with their most subscribed health plan to improve depression treatment quality indicators. Two hundred ninety three employers (82.3% of 356) completed baseline data immediately before learning that 140 employers had been randomized to the evidence-based (EB) depression product presentation and 153 had been randomized to the usual care (UC) depression treatment quality indicator presentation. Analysis of 250 (85.3% of 293) employers who completed web-based interviews at 12 and/or 24 months was conducted to determine presentation impact on depression product appraisal and purchasing behavior.

Results: The intervention had no impact on depression product appraisal in 232 subjects ($F = 2.36, p = .07$) or depression product purchasing ($\chi^2 = 1.82, p = .44$) in 250 subjects. Depression product appraisal increased in companies with greater health benefit generosity whose benefit professionals were male. Depression product purchasing behavior increased in small companies compared to large companies, companies who knew a vendor that sold depression products at baseline, companies with greater health benefit risk taking, and companies with less politicalization of health care benefit decision making.

Conclusions: Policy makers need to build innovative bridges to the employer community to convince them to purchase evidence-based benefits, even when benefits offer potential financial savings.

Trial registration: Clinical Trials Registration Number: NCT01013220.

Keywords: Depression care management, Employers, Return on investment, Academic detailing, Implementation science, Randomized trial

Evidence based?

- Fallah et al, Prevalence of Depression in Personnel of Zanzan University of Medical Sciences: 40% of employees were suffering from depression (2011)
- Nabipoor et al, estimated 34.7% of depressed employees. (2014)

Building PICO

- **P**: issues in health of employees and effect on productivity
- **I**: to encourage them to purchase a evidence based benefit package
- **C**: EB package vs. UC package
- **O**: better ROI, better productivity...



Introduction and Background

- Policy analysts have long recognized that five stakeholder groups (**purchasers, plans, practices, providers, and patients**) have to **actively support efforts** to enhance primary care depression treatment for sustainable gains to be realized.

Background (Cont'd)

- little effort focused on purchasers.

- Purchaser support is vital because models that **improve outcomes**, also **increase the direct costs of care**, at least for the first year a depressed individual participates

Background (Cont'd)

- employers as substantial segment of purchasers
- Issues of depression and absenteeism
- Evidences of positive effect of depression management program on work functioning

Objective of the study

- to test an intervention to encourage employers to purchase a high quality depression product for their workforce.



Hypothesis of the study

- employers randomized to the intervention condition would report more positive depression product appraisal and greater depression product purchasing behavior over 24 months than employers randomized to the comparison condition.

Methods: Design

- RCT



Methods: Setting (Cont'd)

- all National Business Coalition on Health (NBCH) coalitions and 12 related professional groups in the United States to participate in the study

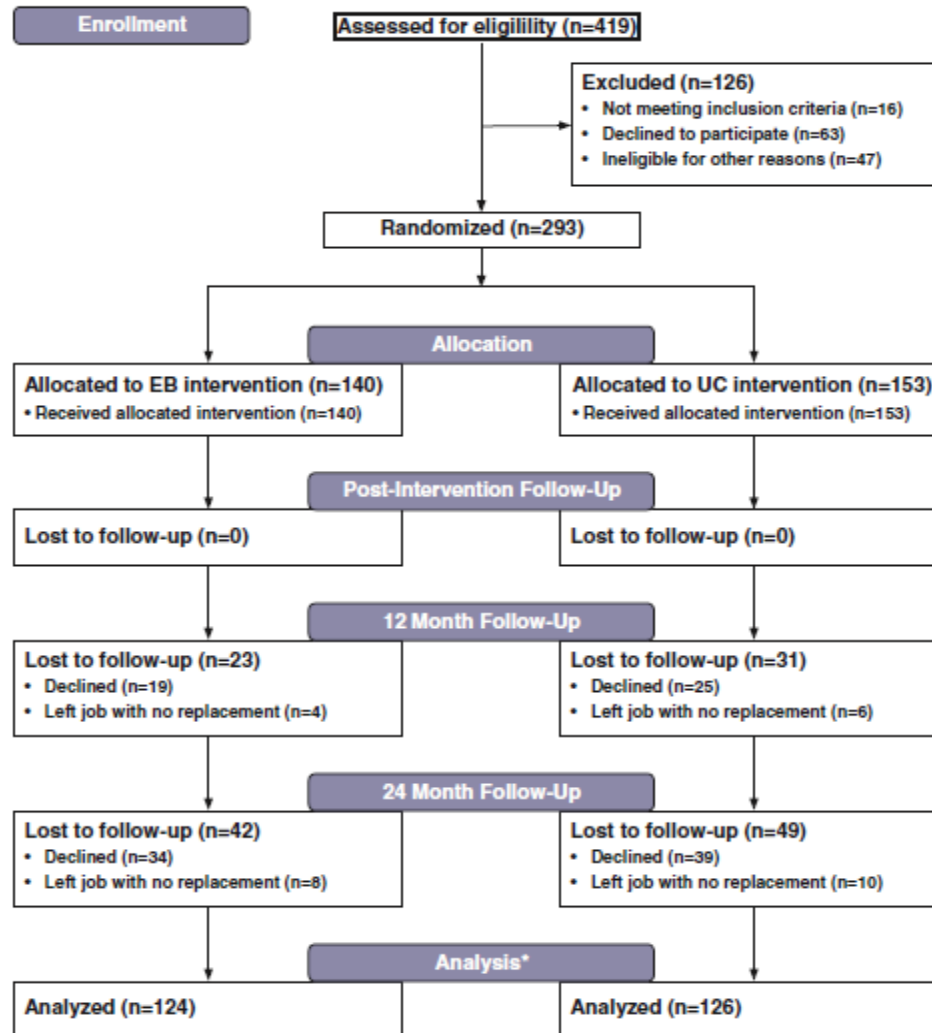
Methods: Subjects

- Eligibility criteria required that interested employers:
 - (a) represent public or private companies employing 100 or more non-unionized employees,
 - (b) their companies intended to remain in the coalition/group for the next two years, and
 - (c) their companies had not already purchased a depression product for all its employees.

Methods: follow up

- Baseline data were collected immediately before employers learned which strategy their presentation addressed.
- Follow-up data were collected immediately after the presentation, at 12 months, and at 24 months

Method (Cont'd)



*requires completion of 12 and/or 24 month follow-up.

Figure 1 Flow diagram.

Method intervention

- Employers randomized to the intervention condition received an evidence-based (EB) presentation, while employers randomized to the comparison condition received an enhanced usual care (UC) presentation.

Method outcomes



- Depression Product Appraisal
- Depression Product Purchasing Behavior
- Wellness Product Purchasing Behavior

Methods: Statistics

- They examined the contribution of baseline measures of organizational characteristics, health benefits characteristics, employer characteristics, and methods characteristics to intervention impact.
- The research team used a **linear mixed model** to test intervention impact on appraisal and a **longitudinal ordinal model** to test intervention impact on purchasing behavior while taking into account the dependence of observations over time and within coalition.

- Depression product appraisal was log transformed to achieve a normal distribution before analysis. Covariates that predicted the dependent variable at $p < .20$ were included in the final models testing intervention impact
- The research team analyzed all available data over 24 months (allowing employers who completed either 12- and/or 24-month follow-up to remain in the analysis), testing intervention impact using two-tailed p values.

- The contamination analysis used the linear mixed models described above to examine the impact of EB colleague appraisal ratings on UC appraisal ratings in enhanced UC subjects only.
- Sensitivity analyses of intervention impact on product appraisal and purchasing behavior were conducted in employers who completed both follow-ups and analyses using last value carried forward.


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- The 250 employers who completed either or both follow-ups provided the study 80% power using two-tailed p values to find a .40 effect size on depression product purchasing behavior with an intraclass correlation as high as 0.02 introduced by the clustering of subjects within coalitions.
 - Exploratory analyses were conducted by examining the frequencies of alternative benefits that employers prioritized in the two years following the presentation.
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Results

Table 2 Baseline characteristics

	Overall (n = 293)	EB Group (n = 140)	Enhanced UC group (n = 153)
Organizational characteristics			
Number of U.S. (SD) sites	234 (114.0)	32.6(156.7)	15.0 (47.2)
Size			
% small (100 to 500 employees)	34.1	30.7	37.3
% medium (501 to 2500 employees)	30.4	30.0	30.7
% large (2501 plus employees)	35.5	39.3	32.0
Type			
% for-profit	57.0	53.6	60.3
% not-for-profit	21.0	23.6	18.5
% public sector	22.0	22.8	21.2
Company age (SD)	75.9 (47.9)	76.8 (50.1)	75.0 (45.0)
% with any absenteeism monitoring	73.2	74.1	72.4
% with any productivity at work monitoring	56.4	53.8	58.7
Mean size of health benefit purchasing group (SD)	7.1 (6.4)	7.2 (6.5)	7.0 (6.4)
% centralized decision making	93.8	95.0	92.8
% local decision making	85.6	89.2	82.3
% purchasing groups with finance representative	80.1	78.5	81.7
% National Business Coalition on Health (NBCH) member	72.7	71.4	73.9
Health benefit characteristics			
Mean depression impact (SD) *	2.4 (0.5)	2.5 (0.5)	2.4 (0.5)
% estimating depression prevalence greater than or equal to 11%	51.8	50.8	52.8
Mean number of health plan carriers (SD)	2.2 (2.5)	2.3 (2.9)	2.1 (2.1)
Insurance risk			
% fully insured	21.5	23.9	19.3
% self-insured	48.3	46.4	50.0
% mixture of full and self-insured	30.2	29.7	30.7
Health benefit generosity	6.3 (3.0)	6.4 (2.9)	6.2 (3.1)
% with any mental health carveout	18.2	20.8	18.7
% with Employee Assistance Program (EAP)	80.4	80.6	80.3
Mean health benefit risk taking (SD) *	2.3 (0.5)	2.3 (0.5)	2.4 (0.5)
Mean new health benefit resources (SD) *	2.5 (0.7)	2.5 (0.7)	2.6 (0.7)
Mean expected % premium increase (SD)	7.4 (5.2)	7.8 (5.1)	6.9 (5.2)
Mean politicalization of health care benefit decision-making (SD)*	1.6 (0.8)	1.6 (0.8)	1.6 (0.9)
Mean estimated return on investment with depression (SD)	2.5 (2.0)	2.5 (2.1)	2.4 (2.0)
% knowledge of any vendor who sells depression products	50.0	51.8	48.3
% previous pursuit of depression product at baseline (SD)	1.4 (0.8)	1.4 (0.8)	1.5 (0.9)
Employer characteristics			
% female	69.8	71.2	67.9
% racial/ethnic minority*	13.6	17.1	9.2
Median age	41-50 years	41-50 years	41-50 years
% moderate to complete influence over benefit decision-making	74.5	76.4	73.2

- Depression Product Appraisal

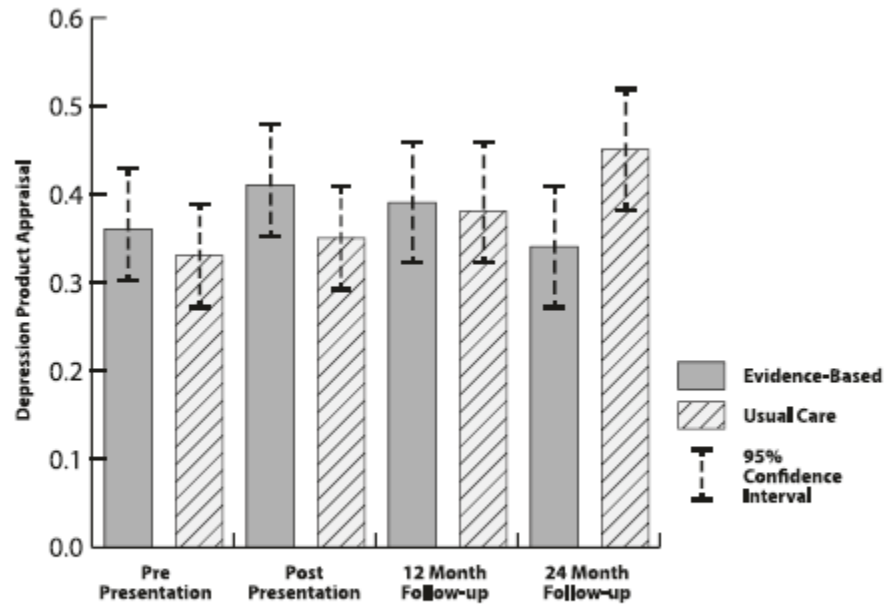


The intervention had no impact on depression product appraisal over 24 months (ES = .03, $F = 2.36$, $p = .07$) in the covariate adjusted model



- In the final appraisal model, increasing depression product appraisal over time was independently predicted by companies whose participants were male (beta = .08, $p = .03$) and by greater benefit generosity (beta = .01, $p = .03$).

- Estimated ROI or its interaction with intervention did not predict change in depression product appraisal over time in bivariate analyses and thus was not included in the final model.
- Sensitivity analyses in employers who completed both follow-ups and analyses using last value carried forward also failed to show significant intervention impact





*adjusted for covariates as described in text

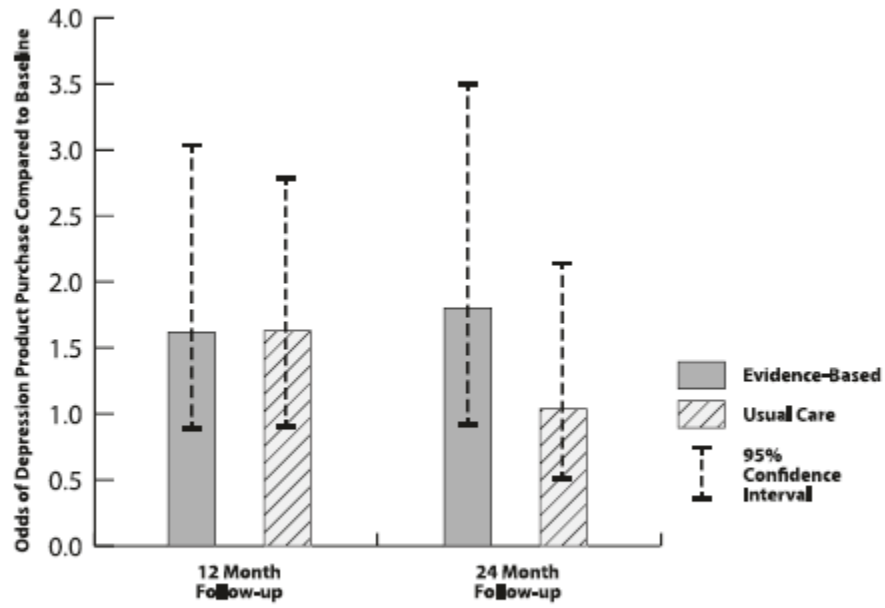
Figure 2 Intervention impact* on (Log) depression product appraisal.

- Depression Product Purchasing Behavior

- The intervention had no impact on depression product purchasing behavior over 24 months (chisquare = 1.82, $p = .44$) in the covariate adjusted model

- In the final depression product purchasing model, greater odds of purchasing behavior were independently predicted by company size (small companies more than large companies, $\beta = -0.58$, $p = .03$), previous knowledge of a vendor that sold depression products ($\beta = 1.23$, $p < .0001$), greater health benefit risk-taking ($\beta = 0.60$, $p = 0.03$), and less politicalization of health care benefit decision making ($\beta = -0.56$, $p = .0004$).

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- Estimated ROI or its interaction with intervention did not predict depression product purchasing behavior over time in the bivariate model and thus was not included in the final model.
 - Sensitivity analyses in employers who completed both follow-ups and analyses using last value carried forward also failed to show significant intervention impact.
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*adjusted for covariates as described in text

Figure 3 Intervention impact* on depression product purchasing behavior.

- Contamination

- The contamination variable was not related to depression product appraisal change over 24 months in enhanced UC employers in bivariate analysis ($F = 1.01$, $p = .46$); thus, multivariate analyses were not undertaken.

- Exploratory Analysis

- Two hundred two of the 250 employers completed the open-ended question about benefits that were given priority at either 12- and/or 24-months, with 41.8% of EB employers reporting that wellness programs were given priority in their companies in the previous year compared to 36.5% of enhanced UC employers (chi square = 0.59, $p = .44$).

- This study demonstrated that brief intervention presenting scientifically derived company-specific ROI estimates associated with purchase of a high quality depression product delivered by a nationally recognized employer coalition director had no impact on employer appraisal or purchasing behavior of depression products over two years.

conclusion

- Ready to be studied rather than ready to be changed
- Policy makers will need to build innovative bridges to employers before these purchasers trust and utilize findings from implementation science, even when the directions the science recommends indicate the potential for financial savings.



WHAT
WE
LEARNED!



obrigado

Dank U

Merci

mahalo

Köszí

спасибо

Grazie

Thank
you

mauruuru

Takk

Gracias

Dziękuję

Děkuju

danke

Kiitos