

Financial Impact Assessment

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Major Depressive Disorder, or depression, is a significant public health concern due to its increasing prevalence across the globe and also its disease burden (Marasine & Sankhi, 2021). Regarding depression, African American adults have a greater likelihood of experiencing greater chronicity and severity compared to Whites (Flores et al., 2021). Antidepressants are the most widely used and effective medication for depression treatment (Marasine & Sankhi, 2021). Despite their proven efficacy in depression management and treatment, 50 percent of patients receiving care in primary care settings are non-adherent to the antidepressants prescribed by the healthcare provider (Dell'Osso et al., 2020). In a certain study, besides patients who failed to complete the first six months of antidepressant treatment, over 50 percent of the remaining participants who remained in treatments after the six months exhibited poor medication adherence (Dell'Osso et al., 2020). Adherence to antidepressant treatment is vital for attaining the intended outcomes, and non-adherence serves as the main issue in antidepressant treatment (Muhammad et al., 2023) since it is associated with increased risk of relapse, depression recurrence, worsening symptoms, and treatment-non-response (Dell'Osso et al., 2020; Gutiérrez-Abejón et al., 2023; Marasine & Sankhi, 2021; Muhammad et al., 2023). The high rates of antidepressant non-adherence require targeted educational programs addressing the factors contributing to non-compliance.

The project seeks to introduce an educational program to improve medication adherence rates among African American patients with depression. Research evidence shows that patients exhibit increased antidepressant adherence and decreased depression symptoms when introduced to an educational program (Sirey et al., 2017). The EBP change project educational program includes individualized educational sessions that will be delivered in 30-minute meetings within

an 8-week implementation period. Baseline data will be collected and compared to post-intervention data. Medication adherence rates and depression severity are the primary outcomes of the EBP change project. The purpose of this paper is to discuss the clinical and financial benefits of the project and evaluate its cost and benefits, where one can conclude whether there are potential substantial financial gains related to implementing the project.

Types of Benefits

When evaluating the potential impacts of an EBP change project, one should consider the clinical and financial benefits that may result from its implementation. Clinical benefits have favorable effects on patients' health outcomes, including reduced symptoms, severity, and chronicity of the disorder, reduced risk of recurrence and relapse, and great treatment response. On the other hand, financial benefits are financial returns realized following project implementation. Waxman (2018) states that change projects can either be revenue-producing or cost-reduction programs. Most healthcare change projects are inclined toward the cost reduction side. A budget and return on investment show which change project has the most significant financial benefit.

Clinical Benefits

If the healthcare team at the mental facility is unable to improve treatment adherence, the patients will experience relapses and recurrences. Research shows that strict adherence to antidepressant treatment is necessary to thwart the recurrence of MDD (Muhammad et al., 2023). Moreover, non-adherence to treatment leads to reduced quality of life and increased risk of relapse (Marasine & Sankhi, 2021). Antidepressants have been questioned concerning their safety as well as their long-term efficacy in treating depression for thousands of patients.

However, they are helpful for many patients in reducing the likelihood of relapse and decreasing depressive symptoms (Muhammad et al., 2023).

If treatment non-adherence is not addressed, the mental healthcare facility will experience increased healthcare resource utilization (HRU). Research shows that non-adherence to antidepressants in depression treatment is associated with increased healthcare resource utilization (Ta et al., 2021). Studies have demonstrated that antidepressant non-adherence is associated with more emergency room visits and an increased risk of recurrence and relapse, leading to increased HRU (Ta et al., 2021). Moreover, patients with poor medication adherence are prone to relapses (Dell'Osso et al., 2020). Depression patients who have relapsed tend to have a more complex disease profile due to the presence of comorbidities like drug abuse, anxiety, and other depressive disorders that require intensive HRU (Gauthier et al., 2019).

Practices involving antidepressant non-adherence have been associated with other adverse healthcare outcomes for patients with depression. For example, non-adherence to antidepressants is associated with worse disease outcomes (Gutiérrez-Abejón et al., 2023). Moreover, antidepressant non-adherence is linked with increased hospitalization (Solmi et al., 2021). Also, non-adherence to treatment is associated with worsening symptoms and increased vulnerability to suicide (Dell'Osso et al., 2020). Lastly, poor adherence to treatment plays a crucial role in increased morbidity, mortality, comorbidity, and cases of non-response (Dell'Osso et al., 2020). Improving medication adherence in depression treatment through a targeted educational program would help alleviate or eliminate these adverse health effects.

Cost – Benefit Analysis

Waxman (2018) states that a cost–benefit analysis helps individuals, teams, and organizations analyze spending in a project or program and evaluate the benefits that accompany

the spending. A cost-benefit analysis will enable the mental health facility in Laurel, Maryland, to compare the costs and benefits of the educational program in monetary units. The costs include those used to implement the intervention (educational program to improve medication adherence), and the benefits include those from the intervention implementation, such as cost savings, medical costs averted, and the monetized value of health improvements. This section compares the direct costs associated with implementing the EBP change project to the benefits the healthcare facility will realize from its implementation. Consequently, the facility will know whether the potential financial benefits/ gains of the EBP change project exceed the cost of implementation. The section will also calculate the project's Return on Investment (ROI).

Direct Costs

Direct costs are the expenditures that are needed to carry out the educational intervention to improve medication adherence among adult African Americans with depression (Gitlin and Lyons, 2014). The project's direct costs are divided into five categories: personnel, educational materials, technical equipment, food and beverages, and miscellaneous costs. **Appendix A** shows the direct costs of implementing the project.

Personnel

Personnel compensation is part of the direct costs. According to Gitlin & Lyons (2014), one should start with the personnel salaries, describe their roles, and provide a rationale for their allocation when formulating direct project costs. To determine the personnel's compensation, one should decide how many hours they will work on the project (Gitlin & Lyons, 2014). The sole personnel in the project is the Project manager (PM). They will work for 60 hours, dedicating three hours to each participant. The job role of the PM includes conducting individualized educational sessions and collecting pre- and post-intervention data. With an hourly pay of \$50

and working 60 hours for the project implementation period, the PM will be compensated \$3,000 (See Appendix A).

Educational materials

The direct costs will also include educational materials such as posters, pens, booklets, paper rims, and educational pamphlets. Participants will be recruited during usual care encounters, and thus, ten posters will be arranged in the facility to notify patients of the EBP change project. Producing the posters will cost \$5 for each piece, totaling \$50 for making the posters. The educational material also includes pens for filling out the questionnaires (demographic, Brief Medication Questionnaire, and PHQ-9) and books for writing down essential information acquired during the educational sessions. The total price of the pens and books is \$10 (20 pens at \$0.5) each and \$30 (20 books at \$1.5 each), respectively. A rim of paper is needed for printing the pre and post-test questionnaires, which include the self-developed demographic questionnaire, the Brief Medication Questionnaire that explores both patients' medication-taking behavior and adherence challenges, and the PHQ-9 for assessing the severity of depression symptoms. Lastly, educational pamphlets are necessary since they will contain the content of the educational sessions. It will cost \$105 to produce 20 pamphlets at \$5.25 each.

Technical equipment

Technical equipment, including a printer and ink cartridges, will also be part of the direct costs. One printer worth \$200 will be enough for any printing service required, for example, printing demographic questionnaires. High-quality black ink will be used to print on the paper. The choice of ink is HP Black Original Ink. Five ink cartridges will be bought at \$28 per cartridge for a total cost of \$140. (See Appendix A).

Food and beverages

The individual in-person education sessions will take place during patient visits. During each visit, a patient will receive a coffee and burger worth \$7.45, and each patient has four visits. Thus, \$29.8 will be used to give each patient a meal during the four visits. Since 20 participants will partake in the program, the total expenditure to provide each patient with a meal during each visit is \$596 (see Appendix A).

Miscellaneous costs

The miscellaneous costs include \$20 for phone bill when contacting potential participants. Another miscellaneous cost is the fee for securing permission to use the tools. The PHQ-9 is free but will cost \$100 to secure permission to use the Brief Medication Questionnaire. The cost of implementing the EBP change project is realistic and reflects what is needed to initiate, implement, and complete it successfully (see Appendix A). The project will build upon already available resources to keep the cost down (Gitlin & Lyons, 2014); for example, the project will use the PM's computer for Zoom meetings (when participants cannot attend the in-person educational sessions), data analysis, and data storage.

Benefits

One way the project will benefit African Americans with depression is to reduce healthcare costs. Patients' poor adherence to antidepressant treatment is associated with recurrences in the long term and acute relapses (Dell'Osso et al., 2020). Patients with depression who experience relapses and recurrences (R/ R) have higher medical costs than those without. In a study by Gauthier et al. (2019), patients who experience R/R tend to have a more complex disease profile that requires intensive HRU. The increased HRU places an economic burden on this patient population (African American adults with depression) (Gauthier et al., 2019).

Healthcare costs are high in patients with and without relapses and recurrences. However, costs are substantially higher for those with R/ R (\$20,590 per patient per year) compared to \$12,368 per patient per year for those without R/ R (Gauthier et al., 2019). Therefore, improved medication adherence in the patient population reduces the chances of acute relapses and recurrences, saving the patient \$8,222 per year ($\$20,590 - \$12,368 = \$8,222$). If the 20 participants comply with the depression treatment regimen and recurrences and relapses are avoided, \$164,440 ($\$8,222 \times 20$) in cost savings will be realized (see Appendix B).

The EBP change project will also impact reimbursement from the Centers for Medicare and Medicaid Services (CMS). The CMS implemented the VBP Program to reward or penalize American healthcare facilities based on patient-reported experience scores, patient satisfaction, and healthcare outcomes (Chiu et al., 2022; Turner et al., 2020). Hospitals are rewarded for quality care of patients, reduced adverse events, reduced length of hospital stay, and adapting EBP protocols and standards to promote the best patient healthcare outcomes (Centers for Medicare and Medicaid Services, 2021; Kim et al., 2022). As highlighted earlier, antidepressant non-adherence among the population of interest is associated with increased hospitalization and emergency department visits, decreased treatment response, chronicity, and relapse and symptom recurrence (Solmi et al., 2021). In return, this would reduce reimbursements since hospitals are rewarded for improved healthcare outcomes. It is estimated that the mental health facility located in Laurel, Maryland, will be reimbursed 200 dollars per patient by adopting EBP standards (introducing an educational program to improve medication adherence rates) that promote the best patient healthcare outcomes. Improved antidepressant adherence will better the patients' healthcare outcomes – reduced depression symptoms, reduced chances of R/ R, and improved treatment response. The mental health facility will be reimbursed \$4,000 ($\200×20) when

patients comply with the antidepressant regimen and experience positive health outcomes (see Appendix B).

When conducting a cost-benefit analysis, it is crucial to evaluate the Return-On-investment (ROI) of the EBP project. ROI is used to evaluate financial benefits from healthcare projects post-implementation and forecast financial returns from an investment (Thusini et al., 2022). ROI is expressed as a metric, either a ratio or a percentage (Thusini et al., 2022), and in this paper, it will be reported as a ratio. It is apparent that the potential financial gains greatly exceed the investment needed to implement the EBP change project. The educational program to improve medication adherence requires \$4,256 to be implemented successfully, and the benefits total (\$164,440 + \$4,000) \$168,440. The difference/ net benefit is \$164,184 (total benefits (\$168,440) – cost for implementation (\$4,256)). Therefore, the ROI is 38.57 to 1 ROI (see Appendix C). ROI is calculated by dividing the net benefit by the project's total cost. Therefore, one can conclude that there is a potential for substantial financial gains related to implementing the project.

Conclusion

Educating African Americans on depression, managing medication use, depression symptoms, antidepressant regimen and treatment adherence, and addressing barriers to medication adherence while helping them develop an adherence strategy helps the patients comply with advice from physicians regarding taking medication. Implementing the EBP change project in the mental health facility is justifiable based on the clinical outcomes and cost-benefit analysis. Improving medication adherence reduces the risk of relapses and depression recurrence and reduces the chronicity and severity of the disorder. Moreover, financial benefits like cost

savings and increased reimbursements will be realized by implementing the project. Overall, the change project is anticipated to yield a positive ROI of 38.57 to 1.

References

- Centers for Medicare and Medicaid Services. (2021, February 18). *The Hospital Value-Based Purchasing (VBP) Program*. Retrieved July 5, 2021, from <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-AssessmentInstruments/Value-Based-Programs/HVBP/Hospital-Value-Based-Purchasing>
- Dell’Osso, B., Albert, U., Carrà, G., Pompili, M., Nanni, M. G., Pasquini, M., Poloni, N., Raballo, A., Sambataro, F., Serafini, G., Viganò, C., Demyttenaere, K., McIntyre, R. S., & Fiorillo, A. (2020). How to improve adherence to antidepressant treatments in patients with major depression: A psychoeducational consensus checklist. *Annals of General Psychiatry, 19*(1), 1–19. <https://doi.org/10.1186/s12991-020-00306-2>
- Flores, M. W., Sharp, A., Carson, N. J., & Cook, B. L. (2023). Estimates of major depressive disorder and treatment among adolescents by race and ethnicity. *JAMA Pediatrics, 177*(11), 1215-1225. <https://doi.org/10.1001/jamapediatrics.2023.3996>
- Gauthier, G., Mucha, L., Shi, S., & Guerin, A. (2019). Economic burden of relapse/recurrence in patients with major depressive disorder. *Journal of Drug Assessment, 8*(1), 97–103. <https://doi.org/10.1080/21556660.2019.1612410>
- Gitlin, L. N., & Lyons, K. J. (2014). *Successful grant writing: Strategies for health and human service professionals* (4th Ed.). Springer Publishing Company.
- Gutiérrez-Abejón, E., Pedrosa-Naudín, M. A., Fernández-Lázaro, D., & Alvarez, F. J. (2023). Medication economic burden of antidepressant non-adherence in Spain. *Frontiers in Pharmacology, 14*(12), 1–9. <https://doi.org/10.3389/fphar.2023.1266034>
- Kim, H., Mahmood, A., Hammarlund, N. E., & Chang, C. F. (2022). Hospital value-based payment programs and disparity in the United States: A review of current evidence and

future perspectives. *Frontiers in Public Health*, 10(8), 1–13.

<https://doi.org/10.3389/fpubh.2022.882715>

Marasine, N. R., & Sankhi, S. (2021). Factors associated with antidepressant medication non-adherence. *Turkish Journal of Pharmaceutical Sciences*, 18(2), 242–249.

<https://doi.org/10.4274/tjps.galenos.2020.49799>

Muhammad, N., Ullah, S. R., Nagi, T. K., & Yousaf, R. A. (2023). Factors associated with non-adherence to antidepressant medication in adults: A systematic review and meta-analysis.

Cureus, 15(4), 1–9. <https://doi.org/10.7759/cureus.37828>

Solmi, M., Miola, A., Croatto, G., Pigato, G., Favaro, A., Fornaro, M., Berk, M., Smith, L., Quevedo, J., Maes, M., Correll, C. U., & Carvalho, A. F. (2021). How can we improve antidepressant adherence in the management of depression? A targeted review and 10 clinical recommendations. *Brazilian Journal of Psychiatry*, 43(2), 189–202.

<https://doi.org/10.1590/1516-4446-2020-0935>

Ta, J. T., Sullivan, S. D., Tung, A., Oliveri, D., Gillard, P., & Devine, B. (2021). Health Care Resource Utilization and costs associated with non-adherence and non-persistence to antidepressants in major depressive disorder. *Journal of Managed Care & Specialty Pharmacy*, 27(2), 223–239.

<https://doi.org/10.18553/jmcp.2021.27.2.223>

Thusini, S., Milenova, M., Nahabedian, N., Grey, B., Soukup, T., Chua, K.-C., & Henderson, C. (2022). The development of the concept of return-on-investment from large-scale quality improvement programs in Healthcare: An integrative systematic literature review. *BMC Health Services Research*, 22(1), 1492–1509. [https://doi.org/10.1186/s12913-022-08832-](https://doi.org/10.1186/s12913-022-08832-3)

[3](#)

Turner, J. S., Broom, K. D., Johnston, K. J., Howard, S. W., Freeman, S. L., & Englund, T.

(2020). Volatility and persistence of value-based purchasing adjustments: A challenge to integrating population health and community benefits into business operations. *Frontiers in Public Health*, 8(5), 165–177. <https://doi.org/10.3389/fpubh.2020.00165>

Waxman, KT. (2018). *Financial and business management for the doctor of nursing practice* (2nd Ed.). Springer Publisher.

Appendix A

Cost of the project at the mental health facility in Laurel, Maryland.

Item	Number of hours/items needed	Cost per hour/item	Total Cost
<i>Personnel</i>			
Project Manager	60 hours	\$50 per hour	\$3,000
<i>Educational Material</i>			
Posters	10	\$5	\$50
Paper rim	1	\$5	\$5
Pens	20	\$0.5	\$10
Booklets	20	\$1.5	\$30
Educational pamphlets	20	\$5.25	\$105
<i>Technical Equipment</i>			
Print	1	\$200	\$200
Ink cartridges	5	\$28	\$140
<i>Food and Beverages</i>			
Burger and coffee combo	80	\$7.45	\$596
<i>Miscellaneous costs</i>			
Telephone bill		\$20	\$20
Fee for securing permission to use the Brief Medication Questionnaire		\$100	\$100
Total Cost			\$4,256

Appendix B

Benefits of the project

Item	Amount Saved
Savings on recurrences and relapses avoided	\$164,440
Reimbursements	\$4,000
Total benefits	\$168,440

Appendix C**Return on Investment (ROI)**

Benefits	\$168,440
Project cost	\$4,256
Net benefit	\$164,184
Return-on-Investment (ROI)	$\$164,184 / \$4,256 = 38.57$ to 1 ROI