Efficacy of Cognitive Behavioral Therapy to Support Postpartum Mental Health and Family Planning in Ethiopia

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PROJECT BRIEF

Summary

The impact of mental health on family planning (FP) is a complex issue that affects various aspects of reproductive health and family dynamics. Women with mental illness are particularly vulnerable to unplanned pregnancy, mental health relapse during childbearing, and psychological and economic burdens associated with unplanned pregnancies.[1]

In addition, postpartum depression can have a significant influence on FP intentions, impacting the health and well-being of new mothers, their infants, and their families.[2] While depression and anxiety symptoms are associated with increased unmet need for FP and low contraceptive use postpartum, solutions promoting the integration of mental health services in FP settings are scarce and often not prioritized.

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This brief will provide an overview of a study conducted to quantitatively examine the immediate and longer-term impact of participation in a cognitive behavioral therapy (CBT) intervention called Mothers Time on:

1. Symptoms of depression and anxiety.
2. Use of a modern FP method.
3. Behaviors and enablers related to FP among postpartum women in Ethiopia.

Building from lessons learned during a feasibility study,[21] this larger study employed a cluster randomized control design, with structured interviews delivered before (baseline), immediately following (endline), and four months after implementation (follow up) of the Mothers Time intervention.

In comparison to control groups who received standard of care, intervention clusters showed significantly greater reductions in symptoms for both depression and anxiety from baseline to follow up compared to the control group. Modern FP use also increased significantly more in intervention clusters as compared to control clusters from baseline to follow-up. Significantly increased communication with a partner and reproductive agency* were observed in the intervention clusters as compared to the control clusters from baseline to endline, but these changes were not sustained to follow-up.

These results suggest that more holistic FP services that consider postpartum mental health can both reduce postpartum depression and anxiety while supporting women in fulfilling their reproductive intentions.

Mothers Time

Each year, millions of pregnancies are unintended, and many women experience an unmet need between their reproductive intentions and contraceptive behavior.[1,3] Postpartum FP needs are dynamic and can shift over time as fertility desires and contraceptive preferences change.[1]

Furthermore, having a child is a significant life event, bringing on major hormonal changes for a woman's body, and many women experience a mix of depressive and anxiety symptoms during this time which can impact their health behaviors, including those related to FP.[3,4]

Substantial evidence sheds light on the negative impact of mental health challenges on a range of health behaviors, including unmet need for FP.[5–15] However, access to services that accommodate these intersecting, evolving needs is lacking, especially for postpartum women.[1,15]

In 2021, drawing from WHO's Thinking Healthy[16–21] and other evidence-based CBT tools,[21–23] Breakthrough ACTION, working in consultation with a local mental health expert, developed an intervention guide, called Mothers Time for Ethiopian community health workers (Health Extension Workers (HEWs**)) to use with postpartum women experiencing mild to moderate symptoms of depression or anxiety.

Following the design of the intervention, a pilot study was conducted to test the feasibility and acceptability of Mothers Time.[21] More detail on the intervention

*Reproductive agency is defined as the proportion of respondents indicating they discussed preventing pregnancy with their partner and had the final say over whether to use FP.
**The term HEWs refers to community health workers in Ethiopia; these terms may be used interchangeably.

design and findings from the feasibility and acceptability study can be found in a related case study.[21]

After the pilot study was completed, a human-centered design workshop was conducted in Ethiopia with national and regional stakeholders, including mothers from the community, to enhance relatability of the content and capture the unique social and cultural norms that postpartum mothers face in the Amhara region.

The intervention materials were adapted to clarify the stories and messages, language around mental health symptoms were changed to reduce stigma (e.g., using words like "stress" as opposed to "anxiety"), examples and activities were updated to be more contextually relevant, and an additional session was added to support further understanding and application of concepts.

The updated guide includes four sessions (outlined in Figure 1), each approximately 60–90 minutes, delivered in small groups of four to six women.

Figure 1: Updated Mothers Time Sessions

Session 1: Healthy thinking on care seeking	**Session 2:** Thinking about the future
Session 3: Family planning	**Session 4:** Thinking about your family

Much of the intervention content focuses on fictional stories of a new mother, a character named Birhan, who is struggling with sad and anxious thoughts as she navigates life with a new baby, relationships, and FP decision-making.

Each story about Birhan is designed to provoke discussion on specific examples of anxious or depressive thoughts that may be important for FP decision-making. The intervention also includes homework worksheets that prompt mothers to record their moods for each day and make time for activities that make them feel good, such as visiting friends or resting.

In subsequent intervention sessions, mothers will revisit the homework, and discuss the types of activities that are helpful for their own wellbeing and health. English and Amharic versions of the Mothers Time tool are publicly available on the Breakthrough ACTION website.

Birhan, an animated character designed by a local artist to illustrate concepts in Mothers Time.

Cluster Randomized Control Trial

Study Objectives

The specific aims of the study were to examine the immediate (post-intervention) and longer-term (four-month post-intervention) impact of participation in Mothers Time on:

1. Symptoms of depression and anxiety.
2. Use of a modern FP method.
3. Behaviors and enablers related to FP, such as reproductive agency, partner communication, and FP intentions.

The study employed a cluster randomized control trial design with quantitative, structured interviews delivered before, immediately after, and four months after implementation of Mothers Time. For this study, clusters were defined as health centers. Ten clusters were randomly assigned to either the intervention or control arm. In the intervention arm, HEWs were trained to deliver the four Mothers Time sessions in a group setting of approximately six to eight women over the span of one month.

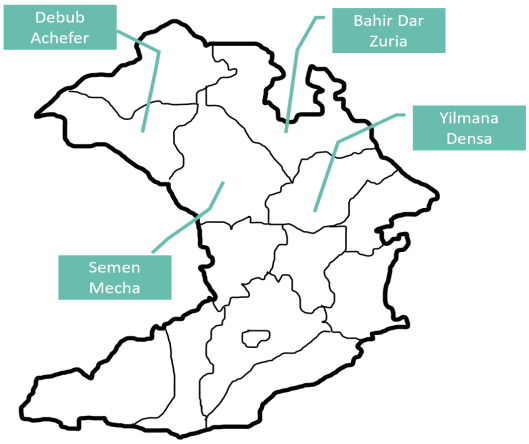
In the control arm, participants received the standard of care that postpartum mothers in Ethiopia typically receive. Standard of care for postpartum mothers includes multiple touchpoints that correspond with postpartum care as well as routine infant immunization.[25]

Sample and Recruitment

This study was implemented in West Gojjam, a zone located in Amhara region. Four woredas (similar to a district) in West Gojjam were selected using purposive sampling based on the following criteria: a) accessibility (e.g., distance from West Gojjam capital city or issues due to rainy season), b) postpartum family planning need, c) rural/peri-urban status, and d) Woreda Health Office interest in testing the intervention.

Within each woreda, eligible health centers/clusters were enumerated. Within each health center/cluster, there were approximately five (range: 3–7) kebeles (similar to wards or neighborhoods) with two HEWs who were responsible for implementing the intervention or maintenance of standard of care during the study period. HEWs also supported the study team in recruiting postpartum women who met the following criteria: a) aged 16–24, b) had a birth within the past year, c) were not using a modern contraceptive* method, and d) had mild to moderate anxiety and/or depressive symptoms.

Figure 2: Selected Woredas



*Defined as intrauterine devices, injectables, implants, pills, condoms, emergency contraception, Standard Days Method, and lactational amenorrhea method.

To determine women experiencing moderate anxiety and/or depressive symptoms, a locally validated version of the standardized patient health questionnaire (PHQ-9) and generalized anxiety questionnaire (GAD-7) were used to screen participants for symptoms during recruitment. Participants who scored greater than 5 and less than 14 on either the PHQ-9 or GAD-7 were determined as having mild to moderate symptoms of anxiety or depression and were included for participation in the study.

Participants who indicated death ideation, or who scored 15 and above on the PHQ-9 or GAD-7 were offered a stipend for travel to the nearest health center for further support and referral to psychiatric facility, as well as a phone credit stipend. If the woman declined the referral, the data collector offered to follow up with her in one week's time, in case she changed her mind. During the screening and throughout the intervention, three women met the criteria for severe symptoms and followed the above protocol.

Data Collection and Analysis Approach

The intervention was delivered between May and June 2023. Baseline data collection occurred in early May 2023, endline data collection occurred in early June 2023 and follow-up data collection occurred in mid-October 2023. Following endline data analysis, Mothers Time was determined to be effective compared to the control arm (standard of care), so participants in the control group received the opportunity to participate in the intervention following completion of the study.

Primary Outcomes: The key outcomes of interest for mental health symptoms were whether intervention participants exhibited a reduction in depression or anxiety symptom severity. This was assessed by delivering the PHQ-9 and GAD-7 questionnaires at baseline, endline, and follow-up.

The key outcome of interest for FP was whether intervention participants began using a modern method of FP post intervention. Those using the following methods were categorized as using modern FP: IUD, injectables, implants, the pill, condoms, emergency contraception, the Standard Days Method, or lactational amenorrhea method.

Secondary Outcomes: Other FP behaviors and enablers, specifically reproductive agency, engagement with one's social network, FP intentions, and partner communication were examined as secondary outcomes to test hypotheses in the project's theory of change.

Partner communication was defined as the proportion of women indicating that they spoke to a partner about FP in the last month (endline) or four months (follow-up). Reproductive agency was defined as the proportion of women who discussed FP with their partner and had the final say over whether to use FP. FP intentions were defined as the proportion of respondents who plan to use an FP method in the future.

Primary and secondary outcomes are summarized in Figure 3.

Figure 3: Mothers Time Overview of Outcomes

Mothers Time Intervention

- Fictional stories
- Peer interactions
- Journaling exercises
- Linkages to community health system

Primary Outcomes

- Decreased symptoms of anxiety and depression
- Increased use of modern FP methods

Secondary Outcomes

- Support seeking with one's social network
- Increased communication with partner regarding pregnancy prevention
- Increased reproductive agency
- Increased intent to use Family Planning

Two approaches were used to analyze the data: a cluster-level analysis and an individual level analysis.[26,27] Both approaches yielded similar findings and the presented results are from the cluster analysis.

The cluster analysis examined changes in primary and secondary outcomes over time in intervention and control arms at the cluster level. That is cluster means or proportions were averaged and compared by study arm and time point.

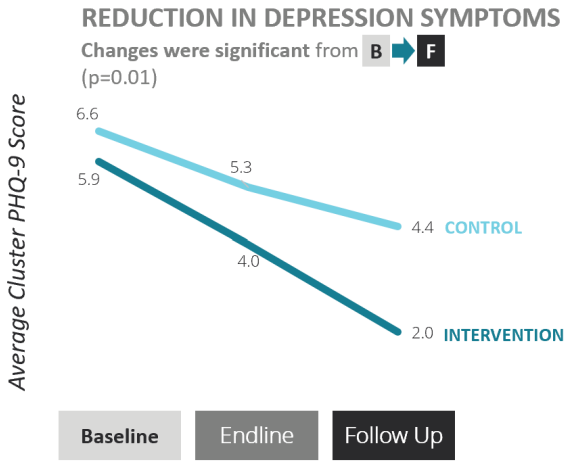
Then, changes from baseline to endline to follow-up were explored comparing the intervention group to the control group. A cluster-level regression analysis using cclan[27] was fit to adjust cluster-level findings for key individual-level characteristics at baseline, including age, education, ownership of a bank account, parity, and ever use of a modern FP method.

Key Findings

Mental Health Outcomes

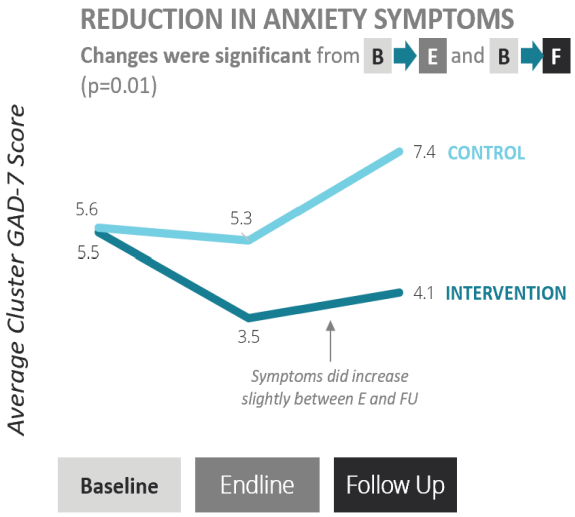
Overall, the Mothers Time intervention demonstrated significant reductions in depression and anxiety symptoms over time as compared to the control group

Compared to the control group, the intervention group had significantly greater reductions in depression from baseline to follow-up.

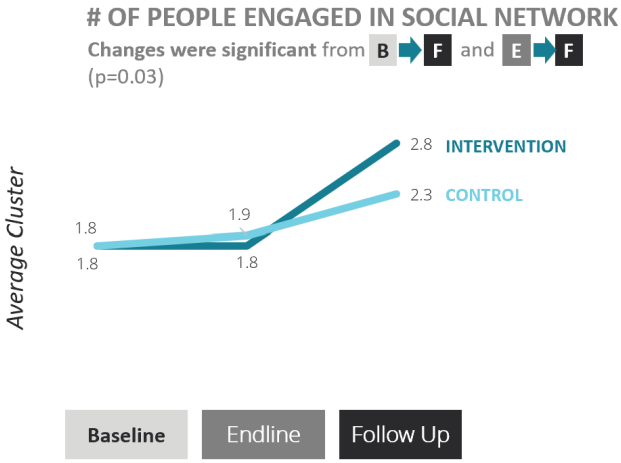


For anxiety, as compared to the control group, the intervention group had significantly greater reductions from baseline to endline as well as from baseline to follow up. While symptoms of anxiety were lower at both endline and follow-up

than at baseline for the intervention group, symptoms did not continue to improve from endline to follow-up, suggesting that periodic exposure mental health services may be needed to see continuous reductions in symptom severity over time.



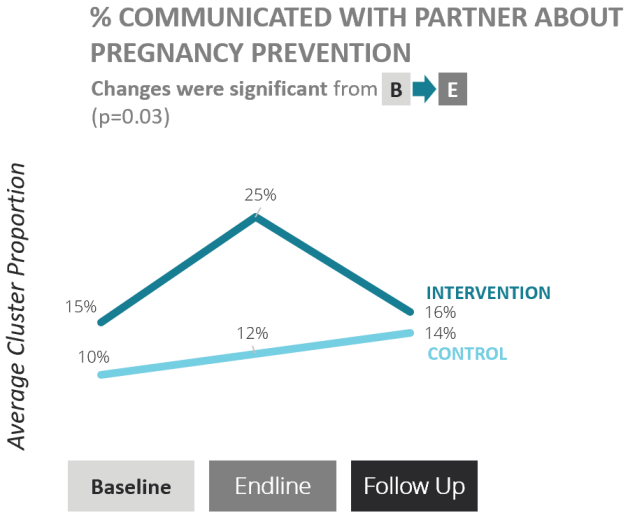
With regards to engagement with their social network,* the intervention group showed a significantly greater increase in engagement from baseline to follow up as compared to the control group.



While previous studies have explored the application of CBT across a variety of formats and health service delivery channels[16–24] these results further demonstrate that community health systems can be an acceptable and effective delivery mechanism. This is aligned with global recommendations[4, 29–30] and Ethiopia's National Mental Health Strategy,[25] which recommend the delivery of basic mental health screening, diagnosis, and treatment via primary care systems or non-specialist health care providers (such as community health workers).

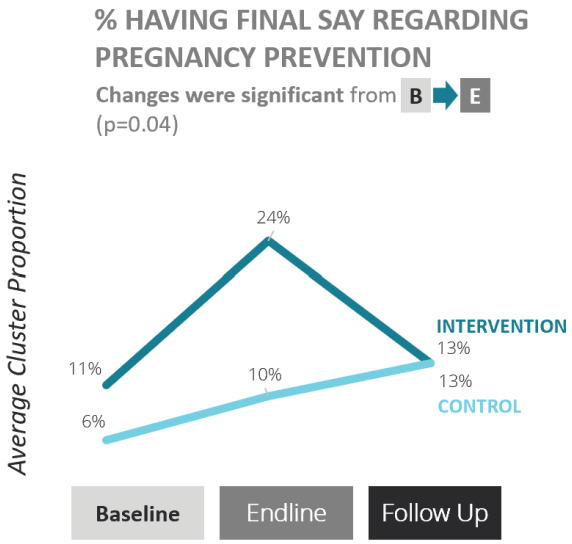
Family Planning Outcomes

In terms of FP, the intervention had a significant impact on all outcomes of interest except for FP intentions. Compared to the control group, the intervention group showed a significantly greater increase in communication with one's partner about pregnancy prevention from baseline to endline, although this increase was not sustained at follow-up.

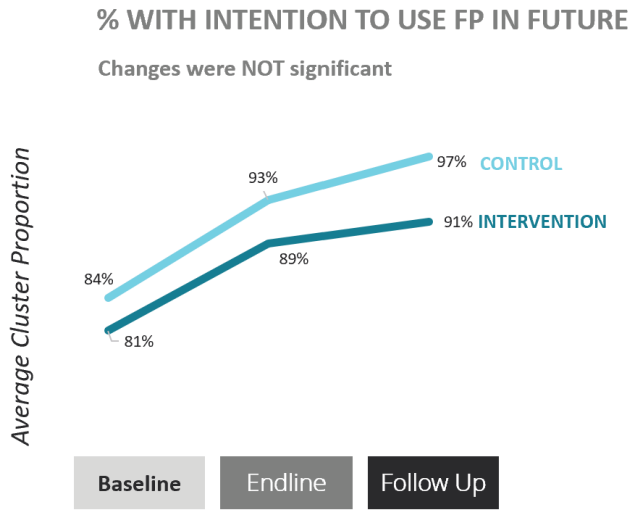


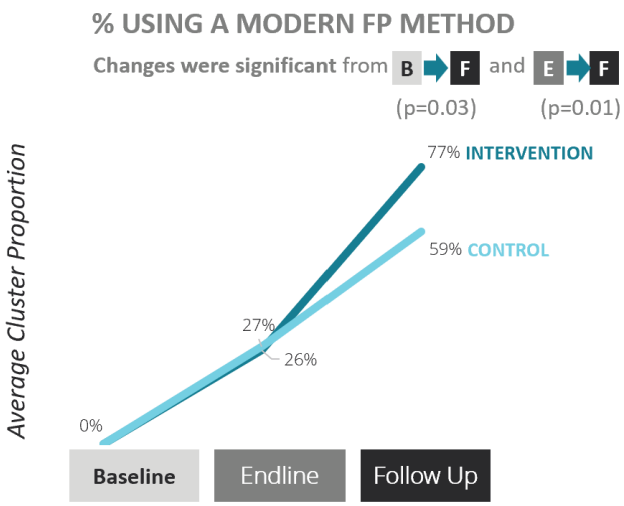
*Engagement with social network is defined as the number of people who are identified as providing emotional support.

This same trend was observed for reproductive agency.



While the intervention group did not show any association between intervention exposure and intentions to use FP, uptake of modern FP use increased significantly in the intervention group as compared to the control group from baseline to follow-up.





This study is one of the first to demonstrate that FP services that consider postpartum mental health can support women in fulfilling their reproductive intentions. The results demonstrate the importance of women's mental health as it impacts their ability to connect socially for support, engage in important discussions with their partners, and make informed decisions regarding their fertility preferences.

Summary and Recommendations

Recommendation 1: Include Mental Health in Community Health Programs and Health Systems Strengthening Efforts

Given the insufficient access to mental health interventions and lack of professional health-seeking relative to the prevalence of depression and anxiety among pregnant and postpartum women,[3,4] simple solutions like CBT which can be easily integrated within existing FP or maternal health services provide an opportunity to close mental health treatment gaps, and improve awareness of mental health issues.[4, 28–32]

Ethiopia has a robust community health infrastructure and national mental health strategy. The Ministry of Health, in collaboration with the WHO, has prioritized utilization of the Mental Health Gap Action Programme (mhGAP) to train primary health care workers on various mental health services.[41] This provides a very supportive environment for scaling interventions such as Mothers Time.[25]

However, to effectively integrate mental health services at the community level, future work will need to leverage a health systems strengthening approach to maintain balance in community health worker workload and address access or capacity gaps in the primary health care environments connected to them.[31–33]

Several health systems strengthening efforts are already underway globally and in Ethiopia which involve establishing community-based systems for mental health provision combined with the policies, structures, and processes to sustain access to those services.[4, 31–33] Continued attention and resourcing for such initiatives can complement community-level interventions like Mothers Time that reach those most vulnerable by strengthening the basic building blocks of the health care system and enabling a supportive environment for integrated, sustained mental health care.[4, 31-33]

Recommendation 2: Explore Pathways for Integrating Mental Health into FP and Maternal Health Programming

Growing evidence suggests that interventions which integrate mental health care into routine maternal care can be effective in lower- and middle-income countries, though adoption of policies that support this approach remain scarce.[34–37] Globally, 85% of women receive antenatal care (ANC) at least once, which provides an opportunity to offer comprehensive and holistic maternity care that includes a mental health assessment and management during and after pregnancy.[34–37]

During this study, research assistants were trained to use a simple PHQ-9 and GAD-7 screening tool to identify women experiencing mental illness. Future iterations of this intervention could explore the potential for training HEWs to administer such tools during their routine ANC care,[34–37] mother's postpartum wellness visits, and child health visits, as this would enable HEWs to both detect mothers experiencing mental illness postpartum in addition to treating their symptoms.

Similar opportunities exist within the FP space, but implementation research on integration of mental health into FP care is limited.[1-4] Established postpartum family planning policies could benefit greatly from the integration of CBT into pre-service training as well as other curricula so that it might become a standard component of care.

Furthermore, integration of CBT interventions within community-based FP counseling or education beyond the postpartum period could provide opportunities to address normative barrier to FP use,[38–40] raise awareness around mental health conditions, and support decision-making around FP intentions throughout a woman's reproductive lifecycle.[1–4]

Recommendation 3: Explore Intersections Between Mental Health and Sexual and Reproductive Health Behaviors and Norms

Globally, several programs have determined successful approaches for effectively adapting social and behavior change programming to address locally specific, normative factors affecting health behavior. However, few efforts have been explored at the intersection of mental health and FP.[22,23,24]

Future work should consider exploring norms and behaviors that affect multiple health areas (e.g., HIV and maternal health), in addition to FP and mental health, to address a broader range of women's health needs. For instance, religion is an example of a salient normative factor in Ethiopia that often impacts mental health, FP use, and other health outcomes,[44,45] so engaging faith leaders and other community agents could be one avenue for identifying and tailoring CBT programs to meet unique community needs.

Furthermore, while postpartum women represent a critical group requiring FP and mental health assistance, future studies should continue exploring how CBT can influence FP behavior among a broader population. In Ethiopia specifically, people affected or displaced by conflict (over 24 million people), remain a priority population for the Ministry of Health as they experience regular disruptions to essential health services (like FP and maternal, newborn, and child health care) and higher rates of depression and anxiety.[39,40,41] Under the WHO's mhGAP program, the Ministry of Health has been able to integrate mental health into routine essential health services within conflict areas by training health workers in affected regions on the use of various psychosocial support tools.[42]

Given the recent (2023) state of emergency declared in Amhara region[43] and the increased rates of depression and anxiety observed in the control group, there is a present opportunity to integrate CBT within ongoing humanitarian response efforts to bridge gaps in mental health services as a result of the conflict.

Recommendation 4: Identify Mechanisms for Tailoring and Scaling CBT, potentially via Digital Media Platforms

These results demonstrate that use of story-based CBT interventions can help facilitate understanding of how women act on their own FP intentions and/or mental health struggles, ultimately facilitating behavior change.

More recent work in this space has explored the application of entertainment education via widely accessible and frequently used digital tools, such as smartphones and social media platforms.[43–45] Most recently, the WHO Thinking Healthy program developed a protocol for testing a technology-assisted version of the program to determine if such delivery channels are feasible and cost-effective at scale (findings not yet available).[46–47]

While integration of CBT into FP, maternal health, or community health systems provides a sustainable option for scaling mental health services to reach vulnerable populations, future work should also explore the potential for digital adaptations of Mothers Time to reach a wider audience, particularly in urban areas where such technologies are readily accessible.

In conclusion, this study provides promising evidence on the use of CBT tools to improve postpartum mental health and support women in low resource setting to realize their reproductive health intentions. Future research should continue exploring the use of CBT to address social, normative, and behavioral barriers within maternal health services, of which postpartum FP is an essential component, and consider integrating and scaling mental health interventions digitally and/or within the FP and maternal, newborn, and child health primary care services offered within community health systems.

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