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Developing and evaluating an integrated mental health intervention for female sex workers in Bangladesh

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Background

Female Sex Workers (FSW) in Bangladesh constitute a marginalised population group vulnerable to poor mental health due to systemic stigma, legal interference and harassment, structural violence, financial instability, and high rates of adverse childhood experiences and gender-based violence (Hengartner et al., 2015; Macias-Konstantopoulos et al., 2025; Beksinska et al., 2021). This ongoing exposure to chronic trauma is associated with a high mental health burden among FSW at the global, regional, and local levels. Globally, meta-analytic estimates suggest that 44% of FSW experience depression, 29% PTSD, 27% suicidal ideation, and 20% suicidal attempts, with anxiety reported in 8.0% to 61.4% of the sampled population (Millán-Alanís et al., 2021). In low- and middle-income countries, pooled prevalence estimates remain high at 41.8% for depression, 21.0% for anxiety, 19.7% for PTSD, 40.8% for psychological distress, 22.8% for recent suicidal ideation, and 6.3% for recent suicide attempts (Beattie et al., 2020). Despite this psychological burden, target-specific mental health resources remain scarce, fragmented, and largely ignored across national healthcare frameworks, especially amongst marginalized populations. Existing support programs are traditionally siloed around HIV and sexually transmitted infection (STI) prevention, leaving the psychological aspects unaddressed. Furthermore, standard therapeutic interventions are rarely tailored to handle the distinct socio-occupational landscape and compounding structural vulnerabilities that these women experience, especially for FSW.

To systematically dismantle this care deficit, interventions must go beyond the sexual health framework. There is a pressing necessity for culturally appropriate, trauma-informed psychosocial frameworks that actively strengthen their emotional regulation, coping self-efficacy, and social support networks. Generating rigorous evidence on these integrated approaches is vital for establishing sustainable, scalable mental health solutions for this population.

Objective

To evaluate the effectiveness of a culturally adapted, five-session psychological intervention in improving mental health outcomes, coping, social support, and psychosocial well-being among female sex workers in Bangladesh

Intervention and Method

This study employed a multi-phase, mixed-methods, pre-post quasi-experimental design to build, test, and evaluate an integrated mental health framework. Jashore was selected as the intervention site, while Faridpur served as the comparison (control) site where participants received as-usual care, i.e., existing HIV prevention services. Both regions were selected due to ease of access to various types of FSW (i.e., street, hotel, residence, and brothel-based) and matching socio-demographic traits.

The study spanned a structured chronological timeline:

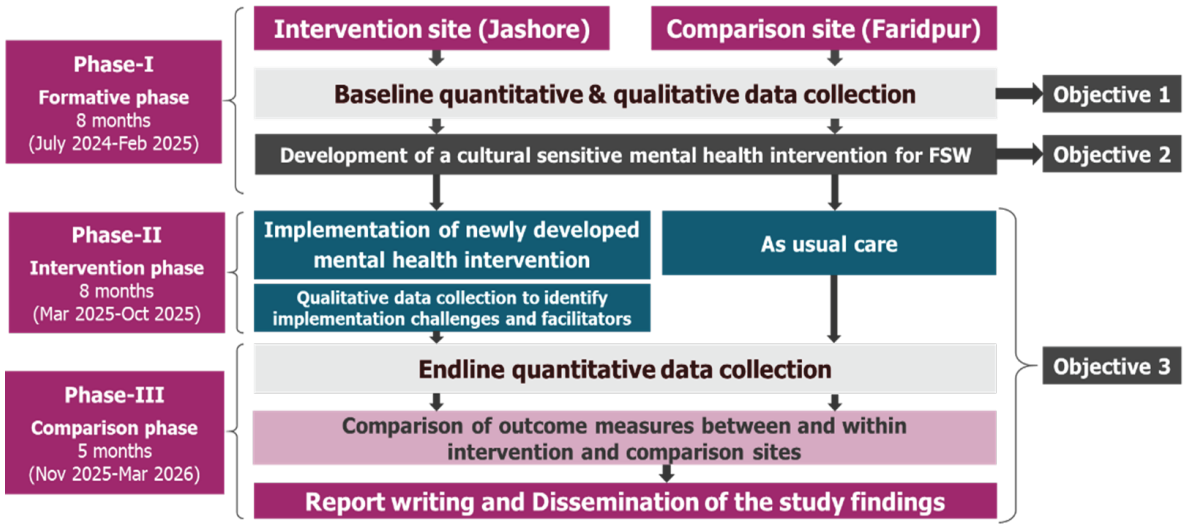


Figure 1: Study design and implementation framework

Phase 1
Formative Phase

Focused on:

- Mixed-methods baseline assessments,
- Mental health needs discovery,
- Cultural intervention modelling.

Phase 2
Intervention Phase

Dedicated to:

- Active treatment implementation,
- Real-time qualitative barrier tracking.

Phase 3
Comparison Phase

Covering:

- Endline data evaluation (quantitative and qualitative),
- Comparative analysis,
- Research dissemination.

A total of 215 eligible FSW (aged 18 and above with recent sex work history) were randomly sampled from the service register ('mother list') at each site during baseline. It is worth mentioning that since June 2022, an SRHR surveillance of FSW was being established by icddr,b in Jashore (Reza et. al., 2023).

As an ethical obligation, all FSW who were included in the SRHR surveillance received SRHR services from the study team of icddr,b.

FSW who received services were enlisted at the SRHR surveillance office of icddr,b in Jashore. In Faridpur, a local NGO that provides HIV prevention

services to FSW also has a list of intervention participants. In both sites, stratified random sampling techniques were adopted to ensure proportionate representativeness of four groups of FSW (hotel, street, residence, and brothel) at both baseline and endline (Chaudhary & Singh, 2013). Severe psychoses, advanced pregnancies, or acute physical illnesses served as exclusion criteria. The endline assessment presented high retention rates, with 209 participants tracked in Jashore and 212 in Faridpur.

The psychological intervention was characterised by a brief, low-intensity treatment delivered individually via a one-on-one, face-to-face format. Each participant underwent 5 consecutive sessions, with each session lasting 45-60 minutes. The program culturally synthesised elements of Cognitive Behavioural Therapy (CBT) and Dialectical Behaviour Therapy (DBT), i.e., emotion regulation and distress tolerance; components of trauma-informed care; acceptance-based strategies derived from Acceptance and Commitment Therapy (ACT); and problem-solving and resource building. All components were deliberately selected and adapted to directly address the specific mental health needs of FSW arising from their psychological distress. For example, CBT techniques reframe the negative self-appraisals and hopelessness that frequently arise from occupational stigma and violence, while emotion-regulation and distress-tolerance skills drawn from DBT equip participants to manage intense affect and crises without resorting to harmful coping strategies. All equip the FSW with skills to address practical barriers, thereby linking psychological coping with tangible improvements in daily functioning and well-being.

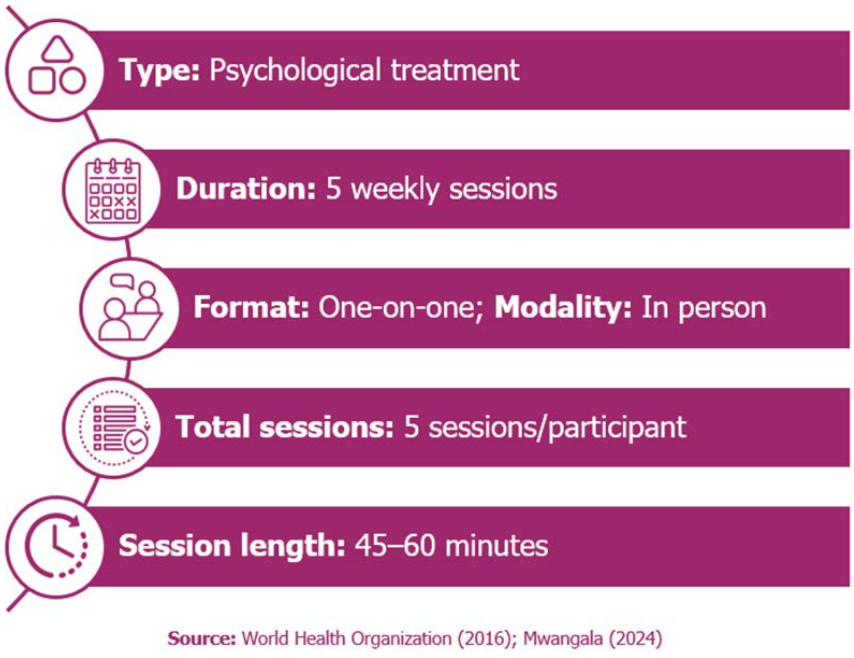


Figure 2: Intervention structure

To measure the impact of the interventions, a set of outcome variables was selected using validated psychometric scales, i.e., depression (last 14 days), anxiety (last 14 days), stress (last 30 days), PTSD (last 7 days), self-harm (last 30 days), suicidal ideation (last 30 days), suicide attempt (last 30 days), poor wellbeing (last 14 days), and poor quality of life (last 14 days). Concurrently, qualitative data consisting of 22 in-depth interviews (IDIs), 8 key informant interviews (KIIs), and 1 focus group discussion (FGD) were collected to explore the mental health needs, challenges, and risk factors they face. True intervention effects were mathematically isolated via Difference-in-Differences (DiD) regression modeling (Bilinski A. et.al., 2026) alongside paired within-site comparisons (Sundjaja, J. H., et.al., 2020).







Key Findings

Baseline quantitative and qualitative data revealed the vulnerabilities they faced, resulting in mental health needs. Baseline assessment confirmed a high lifetime trauma burden across both cohorts.

Experience of Childhood Adversities (ACEs)

Over 80% of all participants reported four or more distinct categories of adverse childhood experiences (ACEs). To express their childhood adversities, two FSW mentioned their sufferings experienced in their life.

> *During childhood, I never received any love from my family. It was like this: if I worked, I would get rice; if I didn't work, there was no rice. My parents would only give me food if they saw that I was working; otherwise, they wouldn't provide it."*
>
> - *(Residence FSW; Age-42)*

> *My father passed away when I was 7 years old, and since then, the struggle in my life began. I have been fighting since I was 7. I have seen the pain of hunger up close. I couldn't even eat a full meal."*
>
> - *(Street FSW; Age-39)*

Experience of physical violence and abuse

Apart from childhood adversities, central risk factors for making them vulnerable are high stress and trauma exposure due to violence and abuse they faced. FSW in Jashore faced much higher baseline rates of intimate partner violence (76.3%, N=80 vs. 13.6%, N=66; p<0.001), and lower rates of physical abuse by clients (6.3%, N=80 vs. 18.2%, N=66; p=0.037) compared to Faridpur. Two FSW had expressed these experiences, reflecting their intense emotional suffering.

> *There is nowhere where I can go; I silently endure the torture. I have to bear the pain; I have to live with the beatings. At times, I feel like leaving the house for good and running away in any direction. I feel like leaving this marriage. Nothing feels good anymore. I have no place to go, nowhere in front, behind, or on either side."*
>
> - *(Street FSW; Age-40)*

> *Those who work in this line (sex trade) face various situations... sometimes they(customers) come in a drunken state, force themselves into physical relations, and when we demand money, they refuse to pay properly and beat us. They beat us but don't give the money as agreed."*
>
> - *(Street FSW; Age-25)*

Maladaptive coping to manage psychological distress

Ongoing exposure to trauma further leads them to rely on maladaptive coping strategies. FSW in Jashore who reported coping during self-reported psychological distress spent time alone (40.2%, N=174 vs. 57.8%, N=187; p=0.001) and took drugs (8.6%, N=174 vs. 23.5%, N=187; p<0.001) were less reported in Jashore than in Faridpur. FSW shared their very own coping strategies in their own language:

> *If feelings and experiences are shared with anyone, then they will be interested in finding faults, gossiping about them, and laughing at me. Then why would I share my inner feelings with anybody?"*
>
> - *(Brothel FSW; Age-35)*

> *I am not addicted to drugs; I drink alcohol very occasionally, not on a regular basis. When I drink, my painful thoughts and never-ending tensions fly away."*
>
> - *(Buothel FSW; Age-29)*

Changes in Mental Health Outcomes

Following implementation of the 5-session psychological program, the intervention group in Jashore experienced statistically significant improvements across nearly all primary mental health indicators ($p < 0.05$), whereas the Faridpur control site showed stagnant or worsening outcomes. After successful completion of the intervention for eight months, changes in outcome variables are shown in Figure 3. The data show that significant improvements were observed in 8 out of 9 outcome indicators in Jashore compared to Faridpur.

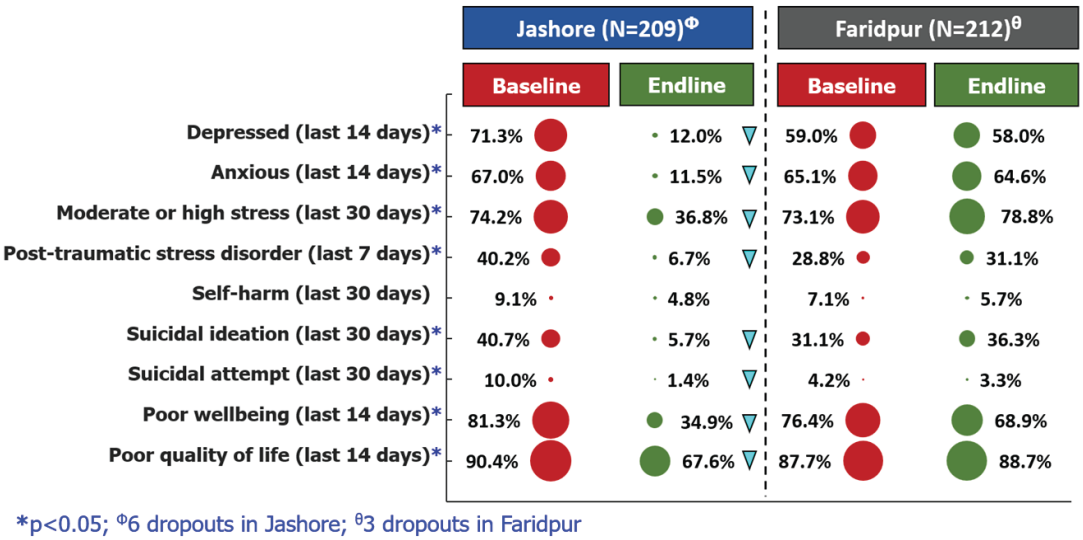


Figure 3: Changes in the mental health outcomes (Statistically significant intervention effect was confirmed via Difference-in-Differences analysis).

Difference-in-Differences (DiD) analysis (Ye et al., 2025) also confirmed that, in addition to the selected outcome indicators, some additional improvements were observed in Jashore. Perceived social support rose from 26.8% to 39.2% ($p<0.001$), and low self-esteem dropped from 16.3% to 8.6% ($p=0.018$).

Qualitative exploration behind the changes in the outcome variables

The usefulness of the intervention sessions was expressed by the participants in ways that reflected their positive changes and acquired skills from the intervention.

Relief from psychological distress

> *…. I feel so much lighter when I come here. I had so many negative thoughts in my head, and always felt heavy in my chest. Now, after practicing the breathing exercise that I learned here, I feel much better."*
>
> - *(Residence FSW, Age 22)*

Positive behavioral change

> *…before I used to argue a lot with peers and use bad language. But after coming here, I have learned many things... Now I don't get into arguments with peers anymore… rather, I have built good relations with everyone."*
>
> - *(Street FSW, Age 30)*

Emotional sharing as a pathway to healing

> *I have never told anyone these things in my life. For some reason, I felt like telling you. Now I try to take care of myself and be happy."*
>
> - *(Brothel FSW, Age 25, who was reluctant at the beginning of the sessions)*

Renewed happiness and social connectedness through intervention

> *…I had forgotten how to smile, and I would even rarely talk to anyone. Now, the people I work with say I've changed- they say I look very happy now!"*
>
> - *(Hotel FSW, Age 42)*

Implications and Recommendations

Programmatic Relevance	The study provides an operational blueprint showing that a brief, low-intensity individual psychosocial model (Dawson, 2015; Mwangala, 2024) can be successfully introduced directly within community-based service platforms. However, high-risk individuals showing intense maladaptive coping (i.e., self-harm tendencies) must be systematically routed toward specialised management, including psychiatric tracking.
Policy Implications	National health ministries must expand support strategies beyond narrow HIV/STI prevention models, especially for key populations. Mental healthcare must be classified as an essential right within comprehensive care frameworks for key populations, incorporating provider capacity building, routine screening, and ensuring services/referrals.
Scale-Up & Integration Potential	Given its minimal resource requirements and high feasibility, this intervention possesses major replication potential. Immediate efforts should focus on integrating these five core sessions directly into established drop-in centers (DICs) and community outreach initiatives, creating an accessible path to long-term health and social inclusion.

The intervention demonstrated strong effectiveness in improving mental health, such as depression, anxiety, stress, and suicidal ideation, alongside meaningful improvements in wellbeing and functioning among FSW. Given the evidence of successful implementation of this five-session individual psychological intervention, it is recommended for national scale-up among FSW in Bangladesh.

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