

Study on the Effectiveness of Integrating Religious Approaches in Health Interventions for Transgender Individuals in Malaysia

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ABSTRACT

INTRODUCTION: Transgender women (mak nyahs) are biological males who self-identify as females and often face discrimination in education, employment, and healthcare. Economic marginalisation frequently pushes them into sex work, heightening risks of HIV infection, depression, anxiety, and substance abuse. While interventions for Muslim transgender communities exist, their effectiveness is underexplored. This study evaluated a health program integrating Islamic elements to reduce HIV-related risk behaviours among mak nyahs. **MATERIALS AND METHOD:** A cross-sectional study was conducted among 50 participants recruited via respondent-driven sampling. A validated, self-administered questionnaire assessed religiosity and HIV-related risk behaviours. The intervention, delivered in a 3-day, 2-night motivational camp (Mukhayyam), incorporated Islamic talks, tazkirah (religious reminders), songs, videos, slides, and quizzes. Participants completed questionnaires at baseline (Day 1) and post-intervention (Day 3). **RESULTS:** The mean age of respondents was 39.9 years (SD=9.46). One-fifth reported sex work, and only one-third reported no HIV-related sexual risk behaviours. The intervention significantly improved knowledge and attitudes related to ibadah ($z=-2.317$, $p=0.021$) and akhlak ($z=-2.900$, $p=0.004$), with an overall increase in Islamic religiosity scores ($z=-3.038$, $p=0.002$). Health knowledge also improved, particularly on the negative effects of cosmetic procedures ($z=-2.848$, $p=0.004$). **CONCLUSION:** The Mukhayyam-based intervention incorporating Islamic teachings enhanced religious knowledge and showed potential in reducing HIV-related risks among Muslim transgender women. Longitudinal studies and controlled trials are warranted to evaluate sustainability and scalability.

Keywords:

Male-to-Female Transgender, HIV, Sex Worker, Religion, Mukhayyam

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INTRODUCTION

According to the fifth edition of Diagnostic and Statistical Manual of Mental Disorders, transgenders are individuals who transiently or persistently identify with a gender different from their natal or anatomical gender. In local language, a male-to-female transgender is known as a mak nyah. The Joint United Nations Programme on HIV/AIDS (UNAIDS) reported that transgender women are disproportionately affected by HIV where new HIV infections increased annually by 3% from 2010 to 2022.2 The relative risk of acquiring HIV was 20 times higher for transgender women than for people in the wider

population globally in 2022, a significant increase from the 11 times higher risk in 2010. Accurate data on the number of transgender individuals in Malaysia is difficult to obtain due to societal and legal challenges. The number of transgender individuals in Malaysia is estimated to be 24,000 to 50,000., Studies in Malaysia suggested that as many as 80% of transgender women in Malaysia are Malays and are Muslims., In Malaysia, an estimated 9.7%–12.4% of transgender women are HIV positive, with higher estimates among those engaged in sex work. According to the 90–90–90 Joint United Nations

Programme on HIV/AIDS strategy, HIV testing is the first crucial step in curbing the HIV epidemic.

Studies have suggested that the inclusion of religious elements into health promotion programs could be effective in bringing health-related behaviour changes. A systematic review analysed fifty-seven studies that examined how sexual HIV risk varied according to religious affiliation, 31 of them showed religious affiliation to be associated with reduced sexual risk for acquiring HIV. This was supported by previous studies suggesting the fusion of religious elements into health services, so that people could benefit in terms of psychological health, physical health, and thus attain a happier, more meaningful life.

The Department of Islamic Development Malaysia (JAKIM) as well as universities have been organizing Mukhayyam-an Arabic term meaning "camp," which in this context refers to motivational or team-building programs that require participants to commit several days to structured courses. The Mukhayyam program places particular emphasis on religious education and formal ritual practices (ibadah). Participation is entirely voluntary and conducted without any element of coercion. Importantly, Mukhayyam is not a rehabilitation centre established under any statutory rehabilitation or treatment-related legislation, such as a drug court or criminal justice mandate.

The purpose of the Mukhayyam program is to educate the transgender individual community on religious knowledge, religious obligations, to increase their spirituality, and to give them a sense of belonging in a spiritual environment. The transgender community had expressed the need to seek religious and spiritual guidance, but they often avoid religious authority in fear of being discriminated.

There has been so far, no study on the effectiveness of Mukhayyam as one of the religious approaches in modifying the high-risk behaviour of transgender individuals. The objectives of this study therefore, were to assess the effectiveness of Mukhayyam in changing HIV-

related risk behaviours and to measure the knowledge on negative effects of feminization, substance abuse and mental health symptoms among transgender individuals participating in Mukhayyam.

MATERIALS AND METHODS

A cross-sectional study was carried out among Malaysian transgender individuals or mak nyahs using validated questionnaires that include parameters like knowledge of HIV/AIDS, attitude towards HIV/AIDS, HIV-related risk behaviours and Islamic religiosity.

Participants

This study included self-identified adult Muslim transgender individuals in Malaysia aged 18 and above, using the respondent-driven method. The inclusion criteria included Malaysian citizens with a producible Malaysian identity card, able to communicate in Bahasa Malaysia and/or English language and consented to the study. For illiterate subjects, the survey form was read out loud to them. Exclusion criteria were cisgender lesbian, gay, and bisexual individuals and female-to-male transgenders (transmen).

Sample size

The sample size was calculated to be 38 by using the online sample size calculator in OpenEpi software, version 3.01. With a prevalence of 0.61, precision of 5% and confidence interval of 95%, the design effect was taken to be 4.0, since the respondent-driven sampling method was used.

Instrumentation

The questionnaire to study the effectiveness of Mukhayyam programs was designed by the topic experts from amongst religious scholars and medical specialists. The steps of preparing the questionnaires roughly followed the 7-step guidelines provided by Artino Jr. and colleagues. Participants completed the questionnaires at baseline (Day 1) and post-intervention (Day 3).

Program Design

The Mukhayyam in this study was designed through a

formal partnership formed between JAKIM, Ministry of Health and volunteers 6 months before the program, assisted by Persatuan Insaf Pahang, Pahang Islamic Religious Department (Malay: Jabatan Agama Islam Pahang), and International Islamic University Malaysia (IIUM). Persatuan Insaf Pahang is a non-governmental organization that looks after the medical, psycho-social, and religious welfare for the transgender community.

Intervention Sessions and Activities

Table 1 showed interventions which were delivered through talks, short advice, music or songs, videos, slides and quizzes.

Instrumentation

There was no previously designed questionnaire to study the effectiveness of Mukhayyam programs, therefore it was designed by the topic experts consisted of religious scholars and medical specialists who have been involved in Mukhayyam previously. The steps of preparing the questionnaires roughly followed the 7-step guidelines provided by Artino Jr. and colleagues. The steps include conducting a literature review, discussing the topics of interest with the population of interest, developing the potential constructs into comprehensive items, undergoing expert or face validation, discussing the clarity of the items with the population of interest, and carrying out the pilot test. The designed questionnaire in Bahasa Malaysia was distributed to 12 mak nyah subjects who did not participate in the Mukhayyam. Internal consistency of the items were calculated. The overall Cronbach alpha was 0.71. Internal consistency of the religion domain was 0.88, while health awareness was 0.83, both were adequate.

Measuring Health Awareness

Knowledge on health issues were assessed on the following areas; knowledge on HIV prevention, knowledge on complication of using feminizing hormone, knowledge on complications of feminizing surgical procedures and implants and knowledge on negative health effects of alcohol and substance abuse.

Table I. Intervention sessions in *Mukbayyam*

INTERVENTION SESSIONS	CONTENT
1 Talks on HIV/AIDS and Sexually Transmitted Diseases	<ul style="list-style-type: none"> HIV/AIDS STD Methods of prevention
2 Health Quiz	<ul style="list-style-type: none"> Health risks of feminizing hormones Complications of feminizing surgical procedures and implants Negative impacts of alcohol on physical and mental health Negative impacts of substance abuse on physical and mental health Prevention, symptoms, diagnosis, treatment, and complication of HIV and sexually transmitted diseases
3 Psychological Support and Self-Help Methods	<ul style="list-style-type: none"> Negative impacts of substance and alcohol abuse Depression and anxiety Stress management How to attain positive habits Self-love and self-respect
4 Prayers as Spiritual Therapy	<ul style="list-style-type: none"> Ablution (Wudhu) Congregational prayers during the program (voluntary basis) Short religious reminders (tazkirah) after each prayer . Correction of recitations during prayers.
5 Religious Talks (Ceramah)	<ul style="list-style-type: none"> Aqidah (the basic knowledge of Islamic belief a Muslim should have) Ibadah (the basic knowledge of obligatory religious practices a Muslim should know) Akhlak (the basic knowledge of the attitude a Muslim should portray in daily life to reflect his understanding towards religion) Death and Akhirah (life after death)
6 Physical Exercises	<ul style="list-style-type: none"> Aerobic exercise Sports competition Jungle trekking Spring cleaning.
7 Work Opportunities	<ul style="list-style-type: none"> Participants provide insights to their needs. Exchange of contact numbers between agency and participants to keep each other updated and informed.

Measuring Religiosity

Items examined under this construct include *Aqidah* (6 items); *Ibadah* (6 items) and *Akhlak* (5 items). *Aqidah* in this context refers to the basic knowledge of Islamic belief a Muslim should have. *Ibadah* refers to the basic knowledge of obligatory religious practices a Muslim

should know. *Akhlak* refers to the basic knowledge of the attitude a Muslim should portray in daily life to reflect his understanding towards religion. Likert scales were used to allow for observation of changes in their knowledge and motivation before and after the intervention program.

Measuring the Motivation to Improve Lifestyle

Two items were asked to assess motivation to change lifestyle. In the pre-program questionnaire, the two items aimed to record the participants' current status in sex work and fulfilling the obligatory daily prayers. For the post-program questionnaire, the two items assessed their willingness to change in these two items. The purpose of keeping only two items under this construct was to simplify the questionnaire as much as possible so the participants would cooperate better in answering the questionnaires.

Data Analysis

Descriptive data were analysed and displayed through frequency, mean with standard deviation, and median with interquartile range. The pre-program and post-program results were compared with Wilcoxon test since the results generally had non-normal distribution when tested for normality. In addition, when the respondents were divided into two groups based when comparing for a certain condition (e.g. having multiple sexual partner), the number of respondents for each group becomes smaller. Therefore, the non-parametric test was used. Mann Whitney test was used to compare the independent pre-program and post-program variables.

RESULTS

50 self-identified adult Muslim transgender individuals completed the study as full participants of *Mukhayyam*. The mean age among the respondents was 39.9 (SD = 9.46) years, where majority of them (62.0%) were between the ages of 30 to 39. About one-fifth of them (18.0%) were 50 years and above. Although 64% of them had no financial dependents, as many as 30% had to share their income with 2 to 3 dependents, while 6% had to support from 4 up to 6 dependents. More than half (60.5%) of the respondents received secondary education while 20.0% of

them received tertiary education. The median of their income was MYR1250 (IqR=1100).

Comparison of knowledge before and after intervention programmes

Medical and Islamic Religious Knowledge in all participants

Table II showed significant improvement in knowledge about *Ibadah* ($z=-2.317, p=0.021$) and *Akhlak* ($z=2.900, p=0.004$), resulting in improvement in the total score for Islamic religiosity ($z=-3.038, p=0.002$). For knowledge of health issues, the knowledge on negative effects of cosmetic procedures improved after the program ($z=-2.848, p=0.004$). Detailed descriptions are illustrated in Table III.

Table II Pre-Program and Post-Program Scores for Medical and Islamic Religious Knowledge among Transgender individuals (N=50)

	Pre-program median score (IqR)	Post-program median score (IqR)	Z stat	p value	r (effect size)	Interpretation
Aqidah	20 (8)	21 (7)	-1.510	0.131	0.213	Small
Ibadah	20 (4)	21 (5)	-2.317	0.021*	0.328	Medium
Akhlak	20 (7)	20 (4)	-2.900	0.004*	0.410	Medium
Total score for Islamic religiosity	58 (19)	61 (15)	-3.038	0.002*	0.430	Medium-Large
HIV prevention	9 (6)	10 (4)	-1.456	0.145	0.206	Small
Hormone use	8 (7)	8 (8)	-1.012	0.312	0.143	Small
Cosmetic procedures	5 (4)	6 (6)	-2.848	0.004*	0.403	Medium
Substance abuse	9 (5)	11 (4)	-1.504	0.132	0.213	Small
Total score for medical knowledge	31 (17)	34 (17)	-2.441	0.015*	0.345	Medium
Total for both religiosity and medical knowledge	86 (29)	96 (30)	-3.152	0.002*	0.446	Medium-Large

* $p < 0.05$

Medical Knowledge and Islamic Religious Knowledge among Transgender individuals in Sex Trade and those not involved in sex trade

Table III compared the knowledge score before and after *Mukhayyam* for participants who were involved in sex trade. There was significant improvement in *Ibadah* ($z=-2.059, p=0.039$) and *Akhlak* ($z=-2.205, p=0.027$) knowledge scores after the program. This has translated

Table III Pre-Program and Post-Program Scores for Medical Knowledge and Islamic Religious Knowledge among Transgender individuals in Sex Trade (n=32)

	Pre-program median score (IqR)	Post-program median score (IqR)	Z stat	p value	r (effect size)	Interpretation
Aqidah	20 (8)	20.5 (10)	-0.242	0.809	0.043	Negligible
Ibadah	20 (9)	21 (5)	-2.059	0.039*	0.364	Medium
Akhlak	19.5 (7)	20 (4)	-2.205	0.027*	0.390	Medium
Total score for Islamic religiosity	58 (19)	58.5 (18)	-2.086	0.037*	0.369	Medium
HIV prevention	9 (6)	9 (4)	-0.880	0.379	0.156	Small
Hormone use	8 (8)	7.5 (7)	-0.350	0.726	0.062	Negligible
Cosmetic procedures	5 (4)	6 (5)	-1.541	0.123	0.273	Small-medium
Substance abuse	9.5 (6)	11 (5)	-1.075	0.202	0.190	Small
Total score for medical knowledge	31 (16)	32 (16)	-1.707	0.088	0.302	Medium
Total for both religiosity and medical knowledge	87 (28)	89.5 (28)	-2.197	0.028*	0.388	Medium

*p < 0.05

into significant increase in total score for Islamic religiosity. However, there was no significant improvement in overall health knowledge scores.

Table IV depicted result of the group not involved in sex trade. Only knowledge on Aqidah improved significantly after the program (z=-2.092, p=0.036) with significant increase in total score for Islamic religiosity. The knowledge on negative effects of cosmetic procedures also improved after the program.

Motivation in Changing Lifestyle

In further sub analysis, the respondents were divided into 2 groups, those who were involved in sex trade and those who were not involved in sex trade. The first group include 32 participants who had noted that they “work part time in sex trade” or “working in the sex trade is my only source of income” while the second group of 18 participants clearly noted that they “do not work in the sex trade”.

Sex work status

Figure 1 shows sex work status of the 50 respondents. There were 18 (36.0%) who chose “not involved in sex trade”, 16 (32.0%) who were “part time in sex trade”, and another 15 (32.0%) who were “full time in sex trade”.

Table IV Pre-Program and Post-Program Result of Medical Knowledge and Islamic Religious Knowledge Scores among Transgender individuals Not Involved in Sex Trade (n=18)

	Pre-program median score (IqR)	Post-program median score (IqR)	Z stat	p value	r (effect size)	Interpretation
Aqidah	21 (9)	23 (4)	-2.092	0.036*	0.493	Medium-Large
Ibadah	21 (4)	21 (5)	-0.985	0.325	0.232	Small
Akhlak	20 (9)	20 (4)	-1.863	0.063	0.439	Medium
Total score for Islamic religiosity	62 (18)	64 (16)	-2.160	0.031*	0.509	Large
HIV prevention	9 (6)	11 (4)	-1.437	0.151	0.339	Medium
Hormone use	8 (7)	9 (6)	-1.140	0.254	0.269	Small-Medium
Cosmetic procedures	4 (4)	9 (5)	-2.733	0.006*	0.644	Large
Substance abuse	9 (4)	11 (3)	-1.116	0.264	0.263	Small-Medium
Total score for medical knowledge	33 (18)	36 (15)	-1.943	0.052	0.458	Medium
Total for both religiosity and medical knowledge	86 (30)	97 (31)	-2.398	0.016*	0.565	Large

*p < 0.05

Daily obligatory prayers

For daily obligatory prayers (Figure 2), 13 (26.0%) respondents chose “not performing obligatory prayers at all”, 16 (32.0%) chose “sometimes performing obligatory prayers”, while another 21 (42.0%) chose “always performing obligatory prayers”.

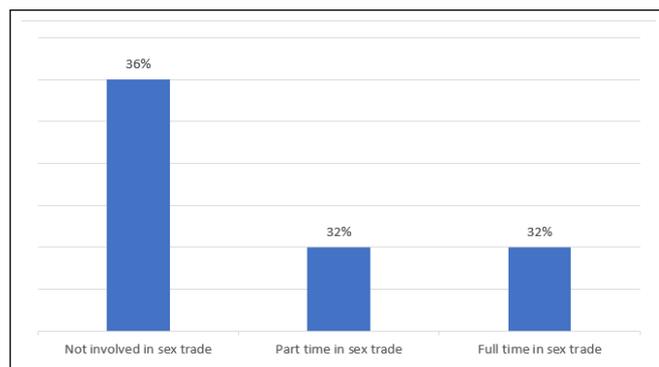


Figure 1: Sex Trade Involvement among transgender individuals (N = 50)

Transgender individuals Motivation in Changing Lifestyle after Program

Figure 3 compared the willingness to complete five times obligatory prayer. From the the 26 % of of respondents who did not perform obligatory prayers at all before the program (Figure 2), post Mukhyyam intervention resulted in only 14.0% respondents who were not sure if

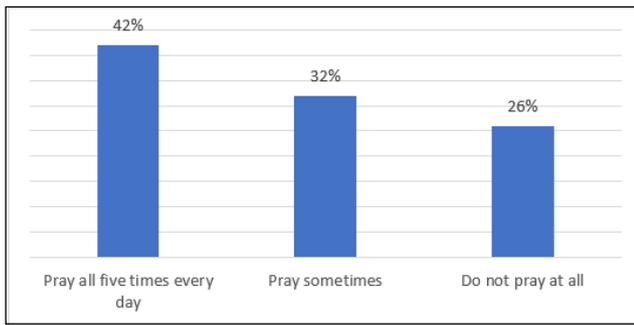


Figure 2: Daily Prayers Performance of Transgender individuals (N=50)

they could perform obligatory prayers. There was increased in behavioural changes of able to complete all prayers (46% post intervention as opposed to 42% before program) and willingness to pray (34% vs 32%).

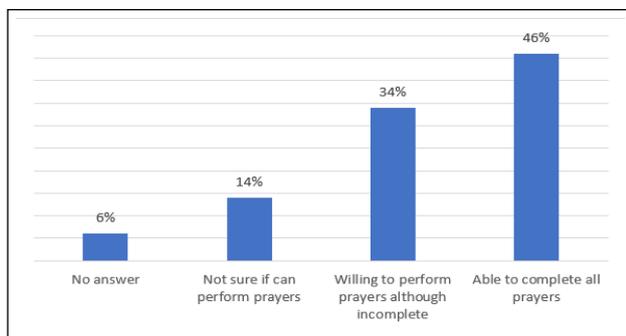


Figure 3: Transgender individuals willingness to complete five times of obligatory prayers

Figure 4 depicted that among the 64.0% respondents in the sex trade (refer Figure 1), 38% believed they were able to discontinue involvement in sex work, 42.0% now believed that they could try to do so, while 14.0% admitted that they were not able to discontinue involvement in sex work.

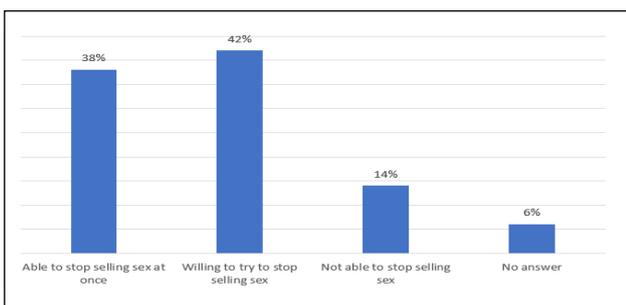


Figure 4: Transgender individuals willingness to discontinue involvement in sex work

DISCUSSIONS

This study, which was one of the first to investigate the effectiveness of health intervention program with religious approach, suggested that the Mukhayyam program is effective in motivating transgender individuals to change their high-risk behaviour. The increment in

total scores for Ibadah and Akhlak indicated that the program could motivate them to practice Islam better and to live a healthier lifestyle, therefore reduce their risk to HIV transmission. As evident from the study by Dowshen and colleagues, formal practices in religion were significantly associated with reduced HIV sexual risk. After the program, as many as 42.0% of the respondents self-reportedly were willing to discontinue involvement in sex work, and 38.0% were willing to abstain from sex trade as well. This result, considering that 64.0% respondents were involved with the sex trade, is a positive improvement.

There has been evidence suggesting that religious belief and behaviours could be protective factors against HIV-related sexual risk behaviours., Transgender sex workers are at a higher risk for HIV infection compared to transgender persons who do not engage in sex work., In this study, it was shown that transgender sex workers had a significantly lower score in religious practice in comparison to those who did not engage in sex work. This implies that encouraging religious awareness and practice in this community would be helpful in reducing HIV-related sexual risk behaviours and supporting transgender sex workers to quit sex trade. This study was able to document the subjects' frequency of religious actions commonly performed by Muslims, thus providing some insight towards areas that require more attention when preaching to this community. For daily prayers, 46.0% were willing to complete all daily prayers, while 34.0% were willing to perform prayers although incomplete. In comparison to the findings before the program began, where 26.0% of the respondents did not pray at all, and 32.0% who only prayed sometimes, it could be said that there were some motivations among the respondents to perform prayers after the program.

According to a study carried out among Christian black and Latino men who have sex with men (MSM), religion and spirituality benefits the stigmatized community. Religion and spirituality have brought positive changes in terms of the individuals' decision-making ability and self-respect. For some members of the community, religion and spirituality increased their level of self-worth and self-discipline, which made them feel less tempted by sex and

drugs. Also, increased self-esteem made them more aware of the potential consequences to their actions, thus preventing them from taking a risk. They also used sex as a tool to make them seek worthy and deserving of love.⁷ Religion and spirituality were able to fill up this void with the individuals' mental health seemed to be improved, therefore making them more empowered to avoid high risk sexual behaviours.

Therefore, religious approach, when implemented correctly, could be helpful as an effective HIV prevention method. In a Mukhayyam event such as this study, it is aimed at promoting and educating a group of Muslim involved in lesbianism, gay, bisexual and transgender (LGBT) the basic tenets of Islam. Participation is completely voluntary with no elements of coercion involved and is far from the conversion therapy practised by other countries, which involves an element of forced participation. In fact, the Mukhayyam underscores the non-discriminatory nature of the religious authorities in providing education and awareness building as part of Islam's rich religious traditions. An Islamic scholar has also highlighted the importance of Mukhayyam in providing the religious rights of transgender individuals to meet their spiritual needs. Mukhayyam also acts as a barrier to prevent all means leading to various harmful consequences (sadd al-dhari'ah).

The outcomes of the Mukhayyam program in this study suggest that it holds potential for broader implementation beyond the initial study sites. To facilitate scaling, strategic collaboration with religious institutions, public health agencies, and civil society organizations is essential to ensure cultural and contextual relevance. Adaptations may be necessary for different target populations, such as transgender youth, rural communities, or individuals with intersecting vulnerabilities (e.g., HIV-positive or undocumented individuals).

In terms of future research, we recommend conducting longitudinal studies to assess the sustainability of behavioural, psychological, and spiritual outcomes over time. This would allow researchers to examine whether observed improvements-such as in religiosity, self-

acceptance, and reduction in high-risk behaviours-are maintained in the medium to long term. Furthermore, randomized controlled trials (RCTs) could help establish stronger causal inferences by comparing outcomes between intervention and control groups. Mixed-methods designs could also explore how and why certain components of the Mukhayyam framework (e.g., group support, spiritual guidance, medical education) resonate with participants and influence behavioural change. Such future studies would provide more robust evidence to support the institutionalization or policy-level endorsement of the Mukhayyam model.

This study has several limitations. First, the relatively small sample size may limit the generalizability of findings to the broader transgender population. Second, the non-randomized, pre-post design precludes causal inferences, as other unmeasured variables could have contributed to the observed changes. Third, outcome data were collected within a short follow-up period, and therefore long-term effects remain unknown. Additionally, the reliance on self-reported measures may be subject to response bias, particularly given the sensitive nature of the topics addressed. Lastly, as the Mukhayyam program is grounded in Islamic principles, its applicability to transgender individuals from other religious or secular backgrounds may be limited, warranting culturally adapted models for broader implementation.

INSTITUTIONAL REVIEW BOARD (ETHICS COMMITTEE)

The research protocol was approved by Universiti Sains Islam Malaysia Research Ethics Committee with the code USIM/REC/0816-17. Participation in the study was fully voluntary. All participants received an information sheet explaining the purpose of the study, what it involved, potential risks and benefits, confidentiality, and their right to withdraw at any time without consequence. This information was presented in clear, accessible language, with translations provided where needed. Written informed consent was obtained from all participants before the study began. Given the potential for discrimination and stigma among transgender individuals, several measures were taken to protect participants well-being. Recruitment was carried out through a trusted local

NGO, Persatuan Insaf Pahang, and outreach workers to reduce any sense of coercion. Anonymity and confidentiality were strictly upheld; no identifying information was collected, and participants used self-chosen pseudonyms or codes.

All interviews and surveys were conducted in neutral, participant-selected locations to ensure comfort and safety. The research team was trained in gender sensitivity, trauma-informed practices, and cultural competence. Throughout the study, continuous reflection and care were taken to respect and uplift the voices and dignity of all participants.

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