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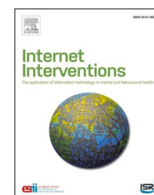

Internet-based interventions to promote help-seeking for mental health in LGBTQ+ young adults: Protocol for a randomized controlled trial

Daixi Ren [a,1], Yinzhe Wang [a,1], Meng Han [a,b,1], Yanwen Zhang [a], Chengxi Cai [a], Kunxu Liu [a], Runan Li [a], Hailan Liu [a], Jianjun Ou [c], Yuanyuan Wang [d,e,*], Jin Han [f], Runsen Chen [a,*]

[a] Vanke School of Public Health, Tsinghua University, Beijing, China
[b] Department of Medical Psychology, The School of Health Humanities, Peking University, Beijing, China
[c] National Clinical Research Center for Mental Disorders, Department of Psychiatry, and China National Technology Institute on Mental Disorders, The Second Xiangya Hospital of Central South University, Changsha, China
[d] Key Laboratory of Brain, Cognition and Education Sciences, Ministry of Education, China; School of Psychology, Center for Studies of Psychological Application, and Guangdong Key Laboratory of Mental Health and Cognitive Science, South China Normal University, China
[e] Division of Psychology, Faculty of Health and Life Sciences, De Montfort University, Leicester, UK
[f] Black Dog Institute, University of New South Wales, Sydney, NSW, Australia

A R T I C L E I N F O

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LGBTQ+
Psychoeducation
Help-seeking
RCT

A B S T R A C T

Background: Compared to its cis-heterosexual counterpart, the sexual and gender minority (SGM) population is disproportionately susceptible to mental health problems, including depression, anxiety, and minority stress. They are also facing unique help-seeking barriers when in need of support. Past research has shown promising results in using interventions to promote help-seeking intentions and attitudes of the cis-heterosexual population. However, there were no known help-seeking interventions targeting the SGM population. This protocol illustrates a study design to test the efficacy of a newly-developed internet-based program aimed to promote help-seeking for mental health in LGBTQ+ young adults.
Methods: This study is a randomized controlled trial that aims to promote and improve the SGM young adults' help-seeking by integrating animated psychoeducational videos, group discussion, and the SGM youth help-seeking brochure. Primary outcomes, including help-seeking intentions and attitudes, will be measured at baseline, post-intervention, one-month post-intervention, and three-month post-intervention. The secondary outcomes, including help-seeking stigma, help-seeking literacy, mental health literacy, and help-seeking behaviors, will be measured at the same time points.
Discussion: This is an internet-based, multi-dimensional, and integrative intervention tailored to the needs of the SGM population. It addresses an important gap in the current landscape of mental health promotion for the SGM population. The findings from this trial will provide new knowledge on promoting help-seeking among the SGM population, paving the road for future research that focuses on addressing mental health issues faced by the SGM population.
Trial registration: Chictr.org.cn: ChiCTR2100053248.

1. Background

Past research has revealed that the Lesbian, Gay, Bisexual, Transgender, and Queer Plus (LGBTQ+) population, also known as the sexual and gender minority (SGM) population, is more susceptible to mental health issues (Wang et al., 2020a; Wang et al., 2020b). Compared to their cis-heterosexual counterparts, the SGM population demonstrates a higher prevalence of depression and anxiety-related disorders resulting from stressful life events (Eaton, 2014; Gonzales et al., 2016; Hall, 2018; King et al., 2008). Specifically, previous studies suggest that the prevalence of depression in the SGM youth (sexual minority youth: 18–23%; gender minority youth: 20–50%) is significantly higher than its general population counterparts (8–17%) (Avenevoli et al., 2015; Becerra-Culqui et al., 2018; Poteat et al., 2021; Rodriguez-Seijas et al., 2019). The

* Corresponding authors.
E-mail addresses: angelayuanyuanwang@gmail.com (Y. Wang), runsenchen@tsinghua.edu.cn (R. Chen).
[1] Contributed equally.

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SGM youth was also found to have higher rates of anxiety-related disorders (generalized anxiety disorder: 57.7%; social anxiety disorder: 22.6%; social phobia: 30%) than the non-SGM youth (34.5%; 14.3%; 17.3%) (Bettis et al., 2020).

The mental health disparities between the SGM population and the non-SGM population were explained based on the sexual and gender minority stress model (Lewis, 2009; Marshal et al., 2011; Meyer, 2003; Reisner et al., 2015). The sexual and gender minority stress model underscores minority stressors (i.e., homo-/bi-/trans-phobia, discrimination, social rejection, etc.) faced by the SGM youth and their negative impacts on the SGM youths' mental health well-being (i.e., a higher susceptibility of mental disorders and suicidal ideations and attempts, etc.) (Lewis, 2009; Marshal et al., 2011; Meyer, 2003; Reisner et al., 2015). Furthermore, the above-described situations (i.e., high prevalence in depression, anxiety-related disorders, and suicidality resulting from minority stress) faced by the SGM youth are urgent and continue to worsen (Allen and Mowbray, 2016; Kulesza et al., 2013; McDermott, 2015). According to the minority stress model, SGM youth are reluctant to seek help from mental health professionals (MHPs) due to help-seeking barriers (Allen and Mowbray, 2016; Kulesza et al., 2013; McDermott, 2015), which can be classified into two groups in response to proximal and distal stressors (Dunbar et al., 2017; McDermott et al., 2018; Shipherd et al., 2010; Stenersen et al., 2019; Zay Hta et al., 2021).

On the one hand, distal stressors, representing externally based experiences, include (1) fear of rejection and hostile reactions from MHPs during treatments and (2) fear of being perceived in a disparaging manner by MHPs during treatments. Findings from two studies point out that MHPs' insensitivity to SGM clients' individual uniqueness, lack of professional training about SGM individuals, and beliefs and religion could result in implicit biases when treating SGM individuals (Ayhan et al., 2020; McDowell, Goldhammer, Potter, & Keuroghlian, 2020). Implicit biases toward the SGM community may negatively impact SGM individuals' intentions to seek help in general and, consequently, contribute to the reluctance of help-seeking pattern in the community, which also negatively influence the SGM youth's internally based processes (Ayhan et al., 2020; McDowell, Goldhammer, Potter, & Keuroghlian, 2020).

On the other hand, the internally based processes being affected include (3) over-reliance on self-coping, (4) negative and fearful perception toward mental health, and (5) lack of confidence during treatments, which constitute the proximal stressors of the SGM youth in the context of the minority stress model (Dunbar et al., 2017; McDermott et al., 2018; Shipherd et al., 2010; Stenersen et al., 2019; Zay Hta et al., 2021).

Several studies indicate that these barriers are related to help-seeking stigma unique to the SGM population. It was believed that the SGM people who seek professional help are socially undesirable or acceptable (Dunbar et al., 2017; Ezhova et al., 2020; Herek et al., 2015; McDermott et al., 2018; Mink et al., 2014; Shipherd et al., 2010; Zay Hta et al., 2021). The help-seeking stigma, rooted in the SGM youth's sexual orientations and gender identities, is associated with lower help-seeking intentions and lower help-seeking attitudes in SGM youth with higher mental health risks (Dunbar et al., 2017; Ezhova et al., 2020; Herek et al., 2015; McDermott et al., 2018; Mink et al., 2014; Shipherd et al., 2010; Zay Hta et al., 2021). Help-seeking stigma in the SGM youth was found to derive from discrimination from the public on their help-seeking behaviors and variations of microaggressions from daily encounters with others under the cis-heteronormative culture (McDonald, 2018; Mink et al., 2014; Nadal et al., 2016). Therefore, there is an urgent need to develop a pragmatic and integrative intervention to address the inequities between this population and their cis-heterosexual counterparts.

Due to its greater accessibility, acceptability, cost-effectiveness, anonymity, and flexibility, internet-based interventions have been widely applied in the field of health promotion (Wallin et al., 2016). Past research has indicated that internet help-seeking interventions were effective in promoting help-seeking-related outcomes in the cis-heterosexual population (Johnson et al., 2021). A recent systematic review has examined 21 studies centered on promoting help-seeking intentions, positive help-seeking attitudes, and help-seeking behaviors (Johnson et al., 2021). Among the 21 studies, 18 studies were internet-based interventions, revealing the increasing use of the internet-based approach in addressing unmet mental health needs in the general population (Johnson et al., 2021). However, none of the 18 internet-based help-seeking studies were targeting the SGM population, suggesting that internet-based help-seeking interventions for the SGM population are still scarce to date (Johnson et al., 2021).

The internet-based intervention includes three key components: animated psychoeducational videos, facilitator-led group discussion, and help-seeking brochures. Research suggests that animated psychoeducation is superior to traditional videos in being neutral and audience-friendly (Conceicao et al., 2021; Matheson et al., 2020; Pitaloka and Palupi, 2021). To our best knowledge, there is no animated online psychoeducational program available for the SGM population. The intervention also includes a help-seeking brochure. According to previous studies, the brochure used in the current study includes (1) encouragement to help-seeking, (2) recommendations to the SGM-affirmative mental health services, and (3) contact information of those services (Zay Hta et al., 2021). The third component is facilitator-led structured group discussion. The group discussion focuses on encouraging participants' self-disclosure of positive help-seeking experiences into the intervention. Based on interpersonal contact and Interpersonal Psychotherapy Theory (IPT), self-disclosures from others who share similar identities within a group discussion can efficaciously promote positive thinking and attitude change (Han et al., 2018a, 2018b; Rahioui et al., 2015; Tu and Lee, 2014). Studies also reveal that group discussion is a beneficial process during which participants can acquire adequate peer support while resonating with each other's perspectives, which promotes their help-seeking intentions and attitudes (Chen et al., 2018; Finlay-Jones et al., 2021). Another study focused on examining facilitators and barriers of SGM youth help-seeking suggests that hearing others' positive past help-seeking experiences with MHPs is a help-seeking facilitator for participants (Zay Hta et al., 2021). Despite the positive impacts of group discussion on participants, at this moment, only psychotherapeutic interventions have incorporated it as the keystone of their curriculum (Craig et al., 2021; Finlay-Jones et al., 2021; Pachankis et al., 2015). Most interventions targeting the SGM population have not incorporated this element into their intervention curriculum, leaving a gap for this study to be bridged in the intervention field (Pachankis et al., 2020; Riggle et al., 2014).

Participants in the control condition will go through the same process as those in the intervention group, with the same format and length as the intervention but containing no active components. The content of the control program will focus on sleep hygiene, healthy diet, and exercise, which have been proven by previous studies to have no direct association with SGM mental health (Butler et al., 2020; Clough et al., 2019; Taylor-Rodgers and Batterham, 2014). In addition, the content on sleep hygiene, healthy diet, and exercise is not related to the primary outcomes (i.e. help-seeking intentions and attitudes).

It is worth noting that, for the purpose of providing professional, unbiased, and reliable information for all enrolled participants, the brochures in both conditions include information on SGM-friendly resources to seek help. All enrolled participants will complete measurements at baseline and post-intervention and follow-ups at one-month post-intervention and three-month post-intervention.

2. Study objectives

The primary objective of this study is to investigate the efficacy of an integrative internet-based psychoeducational help-seeking intervention against the control condition. The second objective of this study is to test the efficacy of the intervention on secondary outcomes, including the

reduced level of internalized help-seeking stigma, increased help-seeking literacy, increased mental health literacy, and the increased frequency of help-seeking behaviors.

In addition, researchers intend to measure variables, including but not limited to internalized homo-/bi-/transphobia, tobacco and alcohol use, and childhood trauma, to examine whether or not they are influencing factors in the post-intervention secondary analysis.

3. Methods

3.1. Focus group

Prior to the actual intervention, focus groups were run by researchers to test all materials included in this study. Participants included experts who participated in this phase included experienced mental health professionals and researchers in the fields of psychiatry and psychology, as well as the SGM young adults who volunteered to offer their perspectives on this study. Experts and the SGM young adults were invited to evaluate this intervention and suggest critical feedback regarding this intervention based on their expertise and past experiences. Participants' feedback was captured and utilized by researchers to dynamically adjust the intervention program and its assessment scales for improvement. For example, supportive self-disclosures of SGM friendly mental health professionals and two LGBTQ+ volunteers have been added to the intervention video to address the feedback regarding the intervention video's insufficient empathy toward the SGM population, intending to fill a sense of security into SGM participants' emotional reservoir, reduce help-seeking barriers resulted from help-seeking stigma, and alleviate the distrust commonly existing between SGM individuals and mental health professionals.

In summary, this study has been thoroughly reviewed and, with necessary modifications derived from participants' experiential feedback, the current protocol is both feasible and pragmatic to be put into operation.

3.2. Trial design

This study is a randomized controlled trial (RCT) design that intends to evaluate the efficacy of an internet-based help-seeking program promoting mental health support for SGM young adults. Participants will be randomly allocated to the experimental condition or control condition at a 1:1 ratio. Participants will complete assessments at baseline, post-intervention, one-month follow-up, as well as three-month follow-up.

3.3. Participants

The eligible participants should meet the following criteria: (1) aged between 18 and 29 years old; (2) self-identify as a member of the sexual or gender minority group; (3) score moderate or above moderate on at least one dimension of the Depression Anxiety Stress Scale 21 (DASS-21) subscale (Alibudbud, 2021; Lindley and Bauerband, 2022); (4) living in the People's Republic of China; (5) have stable internet connections; and (6) can complete all assessments and intervention procedures in a quiet, and undisturbed space. The exclusion criteria include: (1) history of being diagnosed with a severe psychotic disorder, such as schizophrenia (Han et al., 2018a, 2018b); (2) have had suicidal attempt(s) in the last six months; (3) currently have severe suicidal ideations; (4) have help-seeking experience(s) from mental health professionals in the past 12 months; (5) refuse to sign the consent form or are unwilling to participate in the current project; or (6) do not have access to a quiet, undisturbed space that has stable internet.

3.4. Sample size

The sample size was calculated based on the expected effects of the intervention on the primary outcome measures (i.e., help-seeking intentions and attitudes). Given the moderate effect sizes of help-seeking intentions (i.e., Cohen's $d = 0.53$) and help-seeking attitudes (i.e., Cohen's $d = 0.58$) found in a previous study, researchers conservatively estimated a sample size consisting of 144 participants in total, assuming 20% attrition and 1:1 allocation ratio during randomization (Taylor-Rodgers and Batterham, 2014). This sample size would provide 80% power to detect an effect size of 0.53 at the α level of 0.05 for each of the two primary outcomes.

3.5. Recruitment

Online recruitment was conducted via advisements on well-known Chinese online social media platforms (e.g., WeChat, QQ, Douban, Sina Weibo). The recruitment process began in December 2021. Participants willing to join the study will scan the QR code on the advertisement poster, answer the questionnaire, and provide their contact information. Participants who met the selection criteria will be going through the one-to-one consent-signing phase with researchers via phoning. The consent form will be sent to participants, while assigned researchers will verbally read through the consent form and accentuate the key points such as confidentiality regarding the intervention content. Participants who returned the consent forms with e-signature will be enrolled.

Participants will receive compensation (i.e., cash rewards distributed to participants at the end of this study) based on their progress of completion in this study. To avoid high dropout rate, researchers have estimated a 20% dropout rate for this study and expanded the recruiting sample (Furlan et al., 2009; Vancampfort et al., 2016; Lederman et al., 2020).

3.6. Randomization

Researchers not directly involved in this study contribute to the randomization process, ensuring its validity. After obtaining primary data, each participant is assigned a corresponding number. The researcher then assigns every participant into conditions based on their corresponding numbers via a random number table generated by IBM SPSS Statistics instead of their personal sociodemographic information, preventing any subjective selection from occurring while ensuring complete randomization. The study procedure is shown in Fig. 1.

3.7. Intervention delivery

Randomized participants will be arranged into experimental and control groups, consisting of 4–6 people per group, based on the time slots they have selected when answering the baseline questionnaire. Based on the protocol of a single-blind study, participants will be blinded regarding whether they are in the experimental or the control condition group. Group sizes may vary due to unexpected circumstances such as participants' sudden changes in their schedules or dropouts due to physical or mental conditions. Each group and its members will then receive an invitation to an online conference room with a password. The entire intervention will take place on an online Chinese video conferencing platform named Tencent Meeting (i.e., similar to ZOOM). Prior to the start of the intervention, participants will enter an online conference room preregistered by group facilitators using personal passwords the participants previously received. If participants are all on time, group facilitators will then greet every participant, begin a short introduction of oneself, and re-introduce the purpose of this study. If some participants are not present, group facilitators will first inform everyone in the room to wait for missing participants for 5 to 10 min while simultaneously trying to contact those participants using their provided contact information. After the waiting time, if those participants are still not present, group facilitators will then start the meeting.

Group facilitators will deliver this online intervention by leading

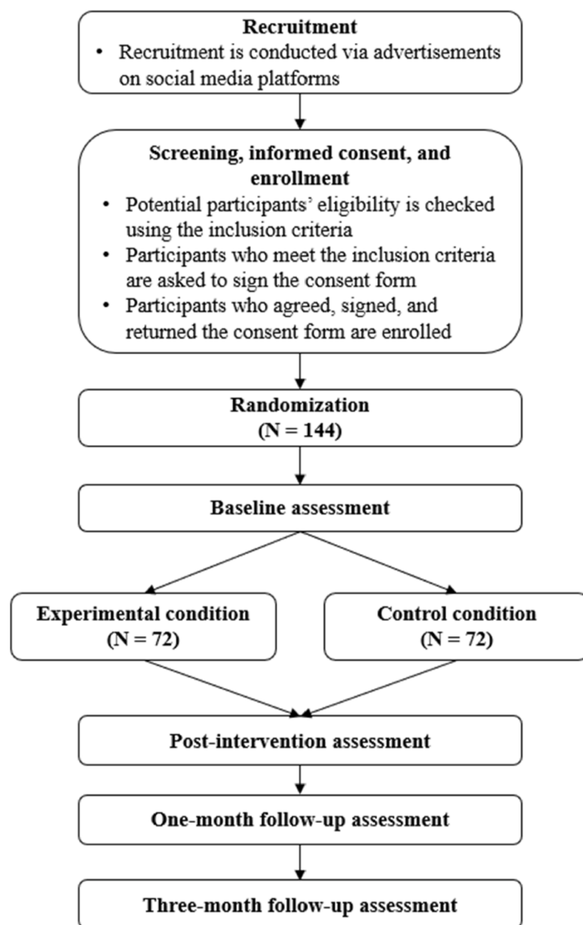

Fig. 1. Study design.

participants in the following three essential steps: (1) watching the entire 15-minute intervention video (i.e., videos in both the experimental and the control condition are around 15 min) with other group members in the online conference room; (2) actively participating in the following facilitator-led group discussion regarding previously mentioned topics and the help-seeking brochure in the online conference room; (3) freely accessing and reviewing the intervention video and help-seeking brochure (i.e., brochure in both the experimental and control condition are around 40 pages) after the intervention. Psychoeducational videos for both conditions will be safely stored in a password-protected online server at Wenjuanxing (i.e., www.wjx.com), a Chinese online survey platform (i.e., similar to Qualtrics.com but can store videos and contents for guest viewing and downloading through the online address and password sent out by the researchers), during the course of the study. The psychoeducational brochures for both conditions will be sent out by researchers to participants directly via their WeChat for them to save and view at any moment.

3.7.1. Description of the experimental condition

Regarding the first step, participants in the experimental condition will watch the intervention video consisting of 5 modules, with its first module centered on the SGM minority stress model, emphasizing common dilemmas and societal stigma faced by sexual and gender minorities. The second module pertains to physical and psychological symptoms, depression, anxiety, negative effects of stress on physical and mental health, self-harm, and suicidality, intending to improve the mental health literacy of the participants while promoting their help-seeking intentions and attitudes. With its core drawn upon the IPT and the interpersonal contact theory, the third module concerns psychoeducation on utilizing self-help as a means to access additional resources and acquiring social support during the help-seeking process (Han et al., 2018a, 2018b; Rahioui et al., 2015; Tu and Lee, 2014). The fourth module intends to promote the participants' confidence and reduce their distrust in mental health professionals and internalized stigma by inviting clinicians in the fields of psychiatry and psychology to record mental health and help-seeking awareness videos in which heart-warming self-disclosures have been shared. The third and the fourth modules were adapted from the ProHelp program, proven to be effective for promoting help-seeking attitudes for suicidal thoughts in Chinese young adults (Han et al., 2018a, 2018b). The fifth module has invited one homosexual and one transgender role model to record videos on their past positive help-seeking experiences to better resonate and engage with the audience.

Regarding the second step, participants in the experimental condition will have a group discussion centers on the above-described topics of the video and the help-seeking brochure. The group discussion structure is founded on the structured interview guidelines designed by researchers in advance. For instance, one of the questions in the guidelines is, “After watching the video, what are your thoughts on overcoming the barriers of help-seeking mentioned in the video?”

After the last question, the group facilitator briefly guides the participants in the experimental condition through six sections of the help-seeking brochure. The first section includes summarized information on sexual orientation and gender identity, with the purpose of helping participants gain a deeper understanding of their SGM identity. The second section centers on helping participants better understand the symptomatology, etiology, and prognosis of anxiety and depression, intending to promote participants' understanding of mental distress and the necessity behind professional treatments for severe distress. With the aim to help participants view their predicaments from a professional angle, the third section focuses on how mental health professionals can assist participants in facing psychological predicaments. In addition, to clarify participants' doubts and reduce their hesitation in seeking professional help, the fourth section includes potential barriers to help-seeking and emphasizes resolutions to those barriers. The fifth section summarizes the help-seeking resources targeting the SGM population, including but not limited to the SGM friendly local organizations, psychiatric hospitals, mental health clinics, the contact information of online counseling service platforms, free counseling services, paid counseling services, helplines, crisis hotlines, and local LGBTQ+ friendly organizations. The last section of the help-seeking brochure concerns criteria that participants need to utilize to seek SGM affirmative care.

3.7.2. Description of the control condition

The control condition is the same as the experimental condition from a procedural standpoint, with content differences in the intervention video, group discussions, and psychoeducational brochure. In contrast, the video and brochure contents are not pertaining to psychoeducational materials on sexual orientation, gender identity, anxiety, depression, mental health help-seeking, or any other possible influencing factors. Instead, the video illustrates the impact of sleep on peoples' mental health, which are also the topics in participants' following group discussions. Participants' psychoeducational brochure also emphasizes promoting participants' awareness of the impacts of healthy circadian rhythm, exercise, and healthy eating habits on peoples' mental health. The last section of the brochure includes the same help-seeking resources targeting the SGM population as the experimental condition, with the ethical concern to provide participants in the control condition with reliable resources if they need crisis intervention. In addition, influential and essential factors such as time length and structure of the intervention remain unchanged as controlled variables. Participants in the control condition also receive their intervention video and psychoeducational brochure after the intervention.

3.8. Fidelity monitoring

To ensure the intervention is delivered as it was intended, intervention fidelity is measured at post-intervention based on three group facilitators' consistency with the structured interview guideline. The entire fidelity evaluation on group facilitators' consistency consists of five dimensions: (1) completion of group discussion based on the structured interview guideline; (2) group facilitators' leading abilities during the group discussion; (3) group members' participation; (4) completion of introducing the psychoeducational brochure; and (5) overall evaluation. Each dimension consists of items on a response scale and is rated by the senior researcher who oversees this study, based upon the audio recordings during the group discussion phase.

4. Outcomes and measures

4.1. Primary outcomes

4.1.1. The General Help-Seeking Questionnaire (GHSQ)

As shown in Table 1, this study's primary outcome is participants' help-seeking intentions and attitudes, measured by the General Help-Seeking Questionnaire (GHSQ). The efficacy of GHSQ in assessing help-seeking intentions and attitudes has been validated by previous research (Wilson et al., 2005). The original scale is adapted to meet this study's primary objective by deleting the subscale for the suicide condition and adding two supplemental questions (i.e., "Have you ever seen a mental health professional for help with your personal problems? Does this help you?"). Specifically, a total of nine items and two supplemental items are used to assess whether subjects have the intention to seek help when they face emotional discomfort and from whom they would seek help. For this study, researchers utilize a validated Chinese version of the GHSQ (Han et al., 2018a, 2018b). The 22 items are scored from a 4-point Likert scale, with a higher score indicating a stronger intention to seek help.

4.1.2. The Attitudes Toward Seeking Professional Psychological Help Scale-Short Form (ATSPPH-SF)

The Attitudes Toward Seeking Professional Psychological Help Scale - Short Form (ATSPPH-SF) is used to assess participants' help-seeking attitudes but centers more on the distrust between them and mental health professionals and the impact of past stigmatized experience on their help-seeking attitudes (Elhai et al., 2008). For this study, researchers utilize a validated Chinese version of the ATSPPH-SF (Fang et al., 2019). The validated Chinese version of the ATSPPH-SF consists of 10 items on a 4-point Likert scale, with a higher score indicating a more positive attitude toward seeking professional help.

4.2. Secondary outcomes

4.2.1. The Actual Help Seeking Questionnaire (AHSQ)

The Actual Help Seeking Questionnaire (AHSQ) is used to examine participants' intentions to seek assistance from informal (i.e., friends, family members, online platforms, or self-help resources) and formal sources (i.e., mental health counselors, psychologists, or psychiatrists) (Rickwood and Braithwaite, 1994). For this study, researchers utilize a validated Chinese version of the AHSQ (Han, 2017). The scale consists of 11 items on a "Yes", "No", or "Not applicable" response scale, with an increasing number of "Yes" representing more help-seeking sources such as the internet, parents, and mental health professionals.

4.2.2. Depression and Anxiety Literacy Questionnaire (D-A-Lit)

The Depression and Anxiety Literacy Questionnaire (D-A-Lit) scale combines the Depression Literacy Questionnaire (D-Lit) and the Anxiety Literacy Questionnaire (A-Lit) (Griffiths et al., 2004; Gulliver et al., 2012). The combined scale consists of 44 items, with options including "right," "wrong," or "unsure." Higher scores on this scale represent more knowledge participants have regarding anxiety and depression.

4.2.3. Self-Stigma of Seeking Help (SSOSH) Scale

The Self-Stigma of Seeking Help (SSOSH) scale is designed to measure participants' self-stigma toward seeking professional assistance (Vogel et al., 2006). For this study, researchers utilize a validated Chinese version of the SSOSH scale (Zhou et al., 2005). The SSOSH scale consists of 10 items on a 5-point Likert scale, with a higher score indicating a higher level of self-stigma toward help-seeking.

4.2.4. Help-Seeking Encouragement Related Knowledge Scale

The Help-Seeking Encouragement Related Knowledge Scale is used to measure participants' knowledge in help-seeking (Costin et al., 2009). For this study, researchers utilize a validated Chinese version of the Help-Seeking Encouragement Related Knowledge Scale (Han, 2017). The scale consists of 8 items on a 5-point response scale.

4.3. Additional outcomes

4.3.1. Depression Anxiety and Stress Scale-21 (DASS-21)

Depression Anxiety and Stress Scale 21 (DASS-21) was selected as an essential element in the inclusion criteria. The DASS-21 scale has been validated by previous research in its efficacy, reliability, and validity in measuring dimensions of anxiety, depression, and stress (Wang et al., 2021). For this study, researchers utilize a validated Chinese version of the DASS-21 (Gong et al., 2010). This dimensional self-report scale consists of three subscales. Each subscale consists of 7 items on a 4-point

Table 1
Summary of primary, secondary, and additional outcomes' measures.

Outcomes measures		Baseline	Post-intervention	One-month follow-up	Three-month follow-up
Primary outcome					
Help-seeking intentions and attitude	The General Help Seeking Questionnaire (GHSQ)	✓	✓	✓	✓
	The Attitudes Toward Seeking Professional Psychological Help Scale-Short Form (ATSPPH-SF)	✓	✓	✓	✓
Secondary outcomes					
Help-seeking behaviors	The Actual Help Seeking Questionnaire (AHSQ)	✓		✓	✓
Depression and anxiety literacy	Depression and Anxiety Literacy Questionnaire (D-A-Lit)	✓	✓	✓	✓
Self-stigma of seeking help	Self-Stigma of Seeking Help Scale (SSOHS)	✓	✓	✓	✓
Help-seeking encouragement related knowledge	Help-seeking encouragement related knowledge scale	✓	✓	✓	✓
Additional outcomes					
Depression, anxiety, and stress	Depression Anxiety and Stress Scale-21 (DASS-21)	✓	✓	✓	✓

Note: Organized by data collection time points; for other additional outcomes and risk factors assessment measures, please refer to Appendix 1.

Likert scale, with a higher score indicating a higher level of depression, anxiety, or stress.

For other additional outcomes and risk factors assessment measures, **please refer to** Supplementary materials.

5. Statistical analysis

Researchers will use the intention-to-treat analytic approach to process and analyze data from the following time points, respectively: (1) post-intervention, (2) one-month post-intervention, and (3) three-month post-intervention. Researchers will analyze the actual help-seeking behaviors of participants by analyzing only data collected from one-month post-intervention and three-month post-intervention while considering actual situations in which they seek help. For continuous variables (i.e., help-seeking attitude, help-seeking stigma, encouraging help-seeking related knowledge, etc.), researchers will use the mixed linear model for statistical analysis, whereas, for categorical variables (i.e., help-seeking intention and actual help-seeking behavior), researchers will use the generalized linear mixed model. Researchers will consider different approaches for different ratios of missing values. Specifically, when missing values are less than 5%, researchers will not process the missing data due to the attribute of the mixed linear model and the considered 20% dropout rate during participant recruitment. When missing values are higher than 5%, researchers will prioritize the utilization of the multiple imputation method and maximum likelihood estimation method to impute missing values and conduct sensitivity analyses to further examine the robustness of the results. The significance level of each analysis will be set to 0.05 while simultaneously reporting a 95% confidence interval.

6. Ethical research conduct

This study conforms to and operates under the ethical standards of the Ethics Committee of Tsinghua University approved by the committees. This study has also been registered in Clinical Trial (i.e., ChiCTR2100053248). All participants are required to sign the electronic consent form before participating in this study. Participants who are not willing or capable of signing the consent form will be automatically dropped out of this study. All participants are reminded that the research staff responsible for this study can terminate their participation at any time if the breach of confidentiality, leak of other participants' personal information, or details of this study occurs.

7. Privacy, confidentiality, and data management

Personal data collected during this study, including participants' sociodemographic information, participants' responses to questionnaires, and the audio record of the discussion, are handled by a designated researcher who will undergo training in maintaining participants' information privacy and confidentiality. The online questionnaires at baseline, post-intervention, one-month post-intervention, and three-month post-intervention will be administered on Wenjuanxing. To avoid breach of confidentiality, when exporting the online data for statistical analyses, a designated researcher will remove participants' personally identifiable information (i.e., names, cell phone numbers, and email addresses) from the initial dataset and use only identification combinations consisting of unique numbers and letters assigned to every participant at the recruitment phase.

During the consent signing phase, participants will be informed regarding the audio record of the online intervention before signing the consent form. Since the online interventions will take place on the Tencent Meeting, an online Chinese video conferencing platform, researchers use password-protected conference rooms to prevent the breach of confidentiality. Due to the platform's limitation that it can only record both the video and audio during a conference, researchers will record audio data using a recording pen to prevent participants' images from being leaked. Before entering the conference room, research staff will contact the participants regarding altering their displayed names from their regularly used names to their identification numbers. In addition, all contacts with participants during the recruitment, consent-signing, pre-intervention, post-intervention, and follow-up will be made by research staff who will undergo the training of explicit guidelines on preserving participants' confidentiality.

8. Discussion

This protocol depicts the details of a randomized controlled trial examining an internet-based program that aims to promote help-seeking of SGM young adults. This study, based on a multi-dimensional approach, incorporates three key components: the animated psycho-educational video, the facilitator-led group discussion, and the help-seeking brochures. Due to the prevalent occurrences of discrimination, prejudice, social stress, stigmatization, and internalized homo-/bi-/transphobia resulting from the cis-heterosexual normative existing in their daily occasions, on a societal level, the SGM population are more susceptible to the following mental health risk factors, including depression, anxiety, suicidality when compared to their cis-heterosexual peers, and, consequently, they are less likely to seek help from mental health professionals and have difficulty obtaining self-help resources and social support (Topkaya et al., 2017).

Guided by this protocol, this online SGM help-seeking intervention can become a medium for sexual and gender minority youth to ask for and receive SGM affirmative care when in need. This study addresses a critical gap in promoting help-seeking for mental health in sexual and gender minority youth. This study is built on the foundation of the SGM Minority Stress Model and utilizes psychoeducation and interactions during group discussions as key therapeutic factors in improving participants' mental health literacy and consolidating their help-seeking knowledge base. The intervention trialed in this study has the potential to be used as an effective tool for the betterment of the entire SGM community in China. This study holds the great potential to lessen barriers existing between the field of intervention and the SGM population in China, paving the road for the future development of a brief yet effective, engaging, and impactful therapeutic intervention for the dynamic risk factors faced by the SGM young adults.

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CRediT authorship contribution statement

DR, YYW, MH, JO, JH, and RC designed the study. ZY, CC, YZW are the group facilitators. LK, LR and LH assisted data collection. DR and YZW wrote the first draft of the manuscript. YYW, JH, RC revised the manuscript critically. All authors contributed feedback and approved the final manuscript.

Declaration of competing interest

No conflicts of interest to be declared.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.invent.2022.100524.

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