BEHAVIOURAL ACTIVATION-BASED DIGITAL MENTAL HEALTH INTERVENTION FOR MANAGEMENT OF COMMON MENTAL DISORDERS AND STRESS AT WORKPLACE

Researcher

IRSHAD AHMAD

Reg. 76-FSS/PHDPSY/F-18

Supervisor

Dr. BUSHRA HASSAN

Assistant Professor

Department of Psychology

Faculty of Social Sciences

International Islamic University Islamabad

2024

CERTIFICATION

This is certified that we have read the thesis submitted by Mr. Irshad Ahmad, bearing Registration No. 76-FSS/PHDPSY/F18. It is our judgment that this thesis is of sufficient standard to warrant its acceptance by International Islamic University, Islamabad, for the degree of Ph.D in Psychology.

Committee:

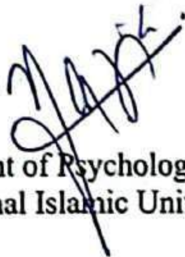
External Examiner-I
Prof. Dr. Shazia Khalid
HoD, of Psychology, National University of Medical Sciences, Rawalpindi

External Examiner-II
Dr. Naeem Aslam
Assistant Professor
National Institute of Psychology Quaid e Azam University, Islamabad

Internal Examiner
Dr. Mazhar Iqbal Bhatti
Assistant Professor,
Department of Psychology,
International Islamic University,
Islamabad

Bushra Hassan

Supervisor
Dr. Bushra Hassan
Department of Psychology,
International Islamic University,
Islamabad



Incharge
Department of Psychology,
International Islamic University,
Islamabad

Dean
Faculty of Social Sciences,
International Islamic University,
Islamabad

Table of Contents

List of Tables vii
List of Figures viii
List of Annexures viii
List of Abbreviations ix
Acknowledgements x
Dedication xii
Abstract xiii
INTRODUCTION 1
Background of the Study 1
Problem Statement 4
Significance of the Study 5
Objectives of the Study 1 7
Research Questions of the Study 1 7
Objectives of the Study 2 8
Research Questions of the Study 2 8
Delimitation(s) of the Study 8
LITERATURE REVIEW 10
Available Workplace-Based Digital Mental Health Interventions (DMHI) 10
Smartphone Applications for Managing Depression 11
Smartphone Applications for PTSD Management 12
The Role of mHealth in Mental Healthcare 13
Concerns Regarding Clinical Validation 13
Criteria for Psychological Health Applications 13
Therapeutic Strategies Employed by Apps 14
Factors Affecting User Engagement with DMHIs 15
Why Behavioral Activation Approach? 20
Adherence to the BA & CBT 21
Core Components of BA Approaches 21
METHOD 23
Research Design 23

Study 1: Adaptation of BA-DMHI and Application Development 23
Expert Panel 23
Qualitative Interviews and Procedure 25
Key Stakeholders (Participants) 25
Data Analysis 26
Content and Mobile Application Development 27
Adaptation of Behavioral Activation Treatment Plan 27
Content Development 27
Mobile Application Development 28
Final Product: BeBright Mobile App 28
BeBright: An Intervention 29
Discover beBright: Introduction to the BeBright Intervention 29
Module 1: Understanding Your Mental Health 32
Module 2: Self-Assessment in the BeBright Intervention 37
Module 3: Goal Setting in the BeBright Intervention 41
Module 4: Behavioral Activation Techniques & Strategies in the BeBright Intervention 45
Module 5: Review and Reflection in the BeBright Intervention 49
Module 6: Maintenance and Relapse Prevention in the BeBright Intervention 53
Study 2: Feasibility and Acceptability Assessment of the BA-DMHI at Workplace 57
Participants 58
Inclusion Criteria 58
Exclusion Criteria 58
Intervention (BeBright) Modules 59
Instruments/Measures (Service Users) 60
Depression, Anxiety and Stress Scale (DASS-21) 61
Workplace Stress Scale (WSS) 61
Client Satisfaction Questionnaire (CSQ-8) 61
Feasibility Assessment 62
Data Analysis 64
RESULTS 68
Study 1: Qualitative Results of the Workplace Employees 68

DISCUSSION 81
Study 1 Part 1: Workplace Employees (WPE) 81
RESULTS 88
Study 1 Part 2: Qualitative Results of the Data of Mental Health Professional 88
DISCUSSION 140
Study 1 Part 2: based on the Results of Mental Health Professional (MHP) 140
RESULTS 156
Study 2: Results of the Feasibility and Acceptability of the BA-DMHI 156
DISCUSSION 174
Study 2: 174
REFERENCES 181
Appendices 203

List of Tables

Table No.	Table Heading	Page No.
Table 1	Sociodemographic Characteristics of the Workplace Employees	66
Table 2	Mental health issues, coping, prevention of the Workplace Employees	75
Table 3	Recognition of Common Mental Disorders	94
Table 4	Treatment and Support for Common Mental Disorders in the workplace	104
Table 5	Attitude towards Behavioural Activation	111
Table 6	Delivery of BA based DMHI in the workplace	120
Table 7	Adaptation of BA-based DMHI	130
Table 8	Sociodemographic Characteristics of the Study Population	154
Table 9	Employment Profile of the Study Population	156
Table 10	Mental Health Profile of the Study Population	159
Table 11	Workplace Characteristics of the Study Population	162
Table 12	Lifestyle Factors before and after Behavioral Activation-based Digital Mental Health Intervention	165
Table 13	Psychometric Properties of the Study Major Scales before Intervention	168
Table 14	Psychometric Properties of the Study Major Scales after Intervention	169
Table 15	Mean differences based on Before and After Intervention In terms of Major Variables	170

List of Figures

Figure No.	Figure Note	Page No.
Figure 1	**Conceptual Model of Study 1**	22
Figure 2	Sample Interface of Introduction to BeBright	29
Figure 3	Sample Interface of Module 1 of the BeBright	34
Figure 4	Sample Interface of Module 2 of the BeBright	38
Figure 5	Sample Interface of Module 3 of the BeBright	42
Figure 6	Sample Interface of Module 4 of the BeBright	46
Figure 7	Sample Interface of Module 5 of the BeBright	50
Figure 8	Sample Interface of Module 6 of the BeBright	54
Figure 9	Conceptual Model of Study 2	55

List of Annexures

Annextures	Heading	Page No.
Annexure- A	Depression, Anxiety and Stress Scale (DASS-21)	195
Annexure- B	Workplace Stress Scale (WSS)	197
Annexure- C	Client Satisfaction Questionnaire	199
Annexure- D	Sociodemographic Characteristics	200
Annexure- E	Employment Profile Sheet	201
Annexure- F	Mental Health Profile Sheet	202
Annexure- G	Workplace Characteristics	203
Annexure- H	Work-related Stressors (Check boxes)	204
Annexure- I	Lifestyle Factors	205

List of Abbreviations

APA	American Psychological Association
BA	Behavioural Activation
BA-DMHI	Behavioural Activation based Digital Mental Health Intervention
CBT	Cognitive Behavioral Therapy
CSQ	Client Satisfaction Questionnaire
DASS	Depression, Anxiety, and Stress Scale
DMHI	Digital Mental Health Intervention
MHP	Mental Health Professional
PTSD	Post Traumatic Stress Disorder
SPSS	Statistical Package for Social Sciences
WHO	World Health Organization
WPE	Workplace Employee
WSS	Workplace Stress Scale

Acknowledgements

First and foremost, I would like to extend my deepest gratitude to my supervisor, Dr. Bushra Hassan, for her unwavering support and guidance throughout the course of this research. Her expertise, patience, and mentorship have been invaluable to me, and I am truly grateful for the opportunity to learn from such an accomplished professional.

I would also like to express my heartfelt thanks to my colleagues, Dr. Sabir Zaman, Dr Tazeem Ali Shah, Mr. Amir Nawaz Khattak, and Mr. Muhammad Arif. Their collaborative spirit, insightful feedback, and constant encouragement have significantly enriched this research journey. Their contributions have not only enhanced the quality of this work but have also made the process a rewarding experience.

To all others who have offered their prayers, support, and assistance in various capacities, I extend my sincere appreciation. Your collective goodwill and positivity have been a constant source of strength and inspiration.

Finally, I dedicate this thesis to my family and friends, whose love and support have been my pillars of strength. Your belief in me has made all the difference.

Thank you all for being a part of this academic endeavour. Your support has turned this journey into a memorable chapter of my life.

Dedication

This Ph.D. thesis is lovingly dedicated to my late father, who has been a beacon of inspiration and strength throughout my life. His wisdom, love, and unwavering belief in me have shaped who I am today. Even though he is no longer with us, his teachings and values continue to guide me in every walk of life. I miss him more than words can express, and I hope that this work serves as a testament to the incredible legacy he has left behind.

I extend this dedication to my mother, whose love and sacrifices have been my constant source of strength. To my brothers and sisters, who have stood by me through thick and thin, your support has been invaluable. Your faith in me has been the driving force behind each milestone I've achieved, and this accomplishment is as much yours as it is mine.

I also dedicate this work to my family and friends, who have been my pillars of support, offering endless encouragement and love.

May this thesis stand as a tribute to all of you, especially to my late father, whose memory I hold close to my heart.

Abstract

Background: The rising prevalence of mental health issues in the workplace calls for effective and adaptable interventions. Behavioral Activation-based Digital Mental Health Interventions (BA-DMHI), specifically the BeBright program, offer a promising solution. However, research on its adaptability and effectiveness across diverse settings is limited.

Aim: This study explored the perspectives of mental health professionals, workplace employees, and other key stakeholders regarding the development, adaptation, and delivery of the BeBright program. Specifically, we investigated the relevancy, cultural appropriateness, feasibility, and acceptability of an App-based Behavioral Activation (BA) intervention in workplace settings. Additionally, we identified barriers and facilitators related to integrating this adapted BA-based intervention into workplaces. Furthermore, we explored the potential for conducting large-scale clinical trials on the BA-DMHI in the future.

Methods: Two studies were conducted. Study 1 employed qualitative methods, involving interviews with mental health professionals and workplace employees for content development and adaptation of the BeBright program. Themes, subthemes, and codes were identified. Study 2 was a quantitative investigation involving 30 workplace employees. It assessed sociodemographic and employment profiles, mental health status, and lifestyle factors pre- and post-intervention. Key psychometric variables were measured using paired t-tests.

Results: Study 1 revealed a comprehensive framework for implementing BA-DMHI, including workplace-based, culture-based, and religion-based activities. Study 2 indicated significant gender and age disparities among participants but also showed that the intervention led to marked improvements in sleep patterns, physical activity, dietary

habits, and stress levels. Significant reductions were observed in Workplace Stress Scale, Depression, and Anxiety scores post-intervention.

Conclusion: The findings suggest that the BeBright program, a BA-DMHI, is a feasible and effective approach for improving mental health in the workplace. The insights from both mental health professionals and employees provide a multi-faceted framework for the adaptation and content development of BA-DMHI, making it culturally and contextually relevant. Future research should focus on larger, more diverse samples to validate these promising findings. Incorporating the BeBright program, as a culturally and contextually relevant BA-DMHI, holds potential for enhancing workplace mental health, underscoring the importance of tailored interventions in diverse organizational settings.

Chapter I

INTRODUCTION

Background of the Study

In recent years, stress and mental health issues in the workplace have emerged as a global challenge with significant implications for both public health and the economy (Health and Safety Executive, 2020). According to the World Health Organization (WHO, 2020), work-related stress arises as a maladaptive psychological response when employees face work demands that are not aligned with their skills, knowledge, and abilities. The absence of adequate social support from supervisors and colleagues often exacerbates this stress. Recent data indicate that the prevalence of work-related stress is on the rise, with approximately 36% stress remains at record-high levels in South Asian employees experiencing workplace stress compared to 21% globally (Tech Wire Asia, 2023).

In the United States, 80% of workers reported suffering from workplace stress between 2016 and 2017, resulting in an annual loss of $300 billion in productivity for employers (Saras, 2018). Similarly, in the United Kingdom, 828,000 workers reported experiencing work-related stress, leading to the loss of 19.9 million working days in recent years (Health and Safety Executive, 2020). The issue is not confined to these countries; elevated levels of workplace stress have also been reported in other high-income countries, including Australia (62%), Canada (62%), Japan (45%), and France (51%) (Saras, 2018). Furthermore, the problem is highly prevalent in the East and South Asian region, affecting 86% of workers in China (Esmond, 2021), 80% in India (Saras, 2018), and reaching alarmingly high levels in Pakistan (Hassan & Husain, 2020). If left untreated, workplace stress can escalate into diagnosed mental disorders such as depression and anxiety (Bartlett et al., 2017; Williams & Lewis, 2020; Hassan & Husain, 2020).

Prevalence of Mental Health Disorders at Workplace

Common Mental Disorders (CMDs), such as depression and anxiety, are highly prevalent in the workplace (World Health Organization, 2022) and are leading causes of occupational disability (Greenberg et al., 2015; Sanderson & Andrews, 2006; Wang et al., 2003). For instance, it has been estimated that approximately 6.4% of employees in the United States experience significant symptoms of depression during their lifetime (Kessler et al., 2006). A nationwide survey further indicated that more than 20% of the working population has a diagnosable mental disorder (Dewa et al., 2004). Existing research has primarily focused on the intricate relationship between mental health and work productivity in developed countries.

However, it's important to note that according to the World Health Organization (WHO), about 75% of the world's labor force resides in developing countries (Benach, 2017). Despite this, there is a relative scarcity of research examining the relationship between mental health and workplace productivity in these settings (Chopra, 2009). A few studies that have been conducted in developing countries, such as Pakistan, often rely on non-random sampling procedures. These studies suggest that depression and anxiety are the most prevalent mental disorders in the workplace (Hassan & Husain, 2020; Khuwaja et al., 2004).

Consequences: Employers and Employees

Consequences for employers and companies due to mental health issues can be far-reaching and detrimental. These may include increased absenteeism, tardiness, and employee turnover. Additionally, unsafe working practices and elevated accident rates can also be observed. Customer complaints and incidents of workplace violence may rise, further exacerbating the situation (Houtman et al., 2007). In terms of organizational outcomes, these

factors can lead to decreased performance and productivity, stunted growth rates, and reduced profits. The quality of work and products may also suffer, thereby escalating the economic burden on the company (Houtman et al., 2007).

Treatment Options: Behavioural Activation Therapy

Cognitive Behavioral Therapy (CBT) has been recognized as the gold standard for psychosocial intervention in managing mental health issues, both generally and specifically in the workplace. CBT combines elements of both behavioral and cognitive strategies and has gained popularity over other psychology-based treatment programs over the years. However, research in the past two decades has indicated that the behavioral component alone of CBT, formally known as "Behavioral Activation" (BA), is equally effective compared to the full CBT package (Dimidjian et al., 2006; Jacobson et al., 1996).

In recent years, BA has been the subject of large-scale clinical trials in high-income countries and has consistently been found to be as effective as full CBT therapy (Rhodes et al., 2014). Evidence from lower-middle-income countries (LMICs) also suggests that BA is an effective strategy for managing common mental health issues such as depression and anxiety (Gros et al., 2012). BA is defined as a talk therapy aimed at reducing psychological distress by engaging individuals in healthy and adaptive activities while discouraging them from unhealthy, maladaptive, and depressive behaviors (Jakupcak et al., 2010; Jacobson et al., 2001).

BA has several advantages over CBT, including its simplicity, brevity, and cost-effectiveness (Ekers et al., 2011; Martin, & Oliver, 2019; Richards et al., 2016). It has also been successfully delivered through alternative modes, including non-specialist health workers and the internet (Carlbring et al., 2013; Ekers et al., 2011; Eisma et al., 2015; Ly et

al., 2014; Martin, & Oliver, 2019). The simplicity and cost-effectiveness of BA make it a suitable intervention for low-resource settings where financial and trained human resources are limited (Martin, & Oliver, 2019; Richards et al., 2016).

Problem Statement

The increased frequency of mental health difficulties in the workplace is a global issue with serious consequences for both public health and the economy (WHO, 2023). There is a scarcity of effective and adaptable therapies for mental health difficulties in the workplace in low-resource settings (Patel et al., 2018). This is attributable to a number of variables, including: 1) the scarcity of mental health practitioners in low-income areas. 2) traditional mental health interventions are prohibitively expensive. 3) the stigma linked with mental health concerns in many cultures.

Behavioral activation-based digital mental health treatments (BA-DMHIs) offer a possible answer to this challenge. BA-DMHIs are web-based or mobile phone-based interventions that promote mental health through the use of behavioral activation therapy. BA-DMHIs are reasonably inexpensive and can be accessed by those living in rural places. They are also less stigmatized than traditional forms of mental health care. The usefulness of BA-DMHIs in low-resource settings has, however, only received a limited amount of research. This study will fill that gap by assessing the feasibility, acceptability, and effectiveness of a BA-DMHI in a low-resource situation. The research will also look at the viewpoints of mental health experts and workplace employees on the development and adaptation of the BA-DMHI's content. The outcomes of this study will have significant consequences for the development and implementation of BA-DMHIs in low-resource settings. The study will also provide useful insights into the challenges and opportunities of adapting and implementing mental health interventions in different contexts.

Significance of the Study

In High-Income Countries, awareness of mental health issues and effective workplace mental health policies are relatively well-established. However, in Lower Middle-Income Countries (LMICs), there is a significant gap in knowledge concerning mental well-being at the workplace. Cultural aspects also play a crucial role in how work-related stress is managed in LMICs (Houtman, et al., 2007).

Importance of Workplace for Mental Health Services

The workplace is an ideal setting for delivering mental health prevention programs (Mykletun & Harvey, 2012) and increasing access to appropriate treatments (Sanderson & Andrews, 2006). This benefits both employees and employers (Wang et al., 2007). However, the uptake of psychological treatments among the working population remains low (Dewa et al., 2011; Lim et al., 2000), leading to a large number of untreated or inadequately treated workers (Wang et al., 2007).

Role of Digital Interventions

Digital Mental Health Interventions (DMHIs), especially in LMICs like Pakistan, offer a cost-effective and accessible solution. They can be particularly effective in workplace settings where individuals are already familiar with information technology. DMHIs can reduce psychological distress, promote well-being, and increase workplace effectiveness (Carolan et al., 2017; Liem et al., 2020). They also offer the advantage of anonymity, which can help counter the stigma associated with seeking mental health help (Greenwood et al., 2018; Russell et al., 2018).

Cultural and Contextual Considerations

Given the increasing use of mobile phones in Pakistan (The World Bank, 2020), it is crucial to ensure that DMHIs are culturally appropriate and theoretically robust to maximize engagement and adherence (Bernal et al., 2009; Cavanagh & Millings, 2013; Hwang, 2009; Kohl et al., 2013).

Behavioral Activation (BA) Principles

Behavioral Activation (BA) principles offer a simpler and more cost-effective approach compared to Cognitive Behavioral Therapy (CBT) for treating common mental health problems (University of Exeter, 2016; Richards et al., 2016). BA can be effectively delivered through web/app-based modalities and requires minimal support, making it particularly suitable for contexts with limited mental health resources.

Objectives of the Current Proposal

The current proposal aims to culturally adapt and test the acceptability and feasibility of web/app-based BA for individuals experiencing significant distress at the workplace. This study could be instrumental in capacity-building for healthcare professionals in the development, adaptation, and management of tech-based psychosocial interventions. It could also improve treatment accessibility and contribute to economic growth.

Keeping in view the above significant of the study, the proposed study will be implemented in two distinct phases. The initial stage of this study will concentrate on adapting an app-based behavioral activation-based digital mental health intervention to suit the specific requirements and cultural setting of Pakistan. The subsequent stage of the study will evaluate the viability and level of acceptance of the BA-DMHI within the context of the workplace environment. The results of these two trials will yield significant insights into the viability and reception of a app-based behavioral activation intervention among employed

individuals in Pakistan. The results could additionally contribute to the advancement and execution of forthcoming research on the efficacy of this strategy.

Objectives of the Study 1

Following were the objectives of the study 1:

1. To explore the views pertaining to the relevancy and cultural appropriateness of BA among stakeholders at workplace.
2. To explore the views of stakeholders regarding the delivery of BA through App based system at workplace.
3. To develop the App-based BA-DMHI on adapted/ translated BA treatment plan informed by stakeholders at workplace.
4. To investigate the perceptions and viewpoints of key stakeholders regarding the integration of a adapted BA based intervention at workplaces.
5. To explore the barriers and facilitators pertaining to the integration of adapted App based BA based intervention at workplaces.

Research Questions of the Study 1

1. What are the perceptions and views of key stakeholders pertaining to the relevancy and cultural appropriateness BA at workplaces in Pakistan?
2. What are the perceptions and views of stakeholders regarding the delivery of BA through App based system at workplace?
3. What potential opportunities exist for implementing an App-based Behavioral Activation-based Digital Mental Health Intervention (BA-DMHI) within workplace settings in Pakistan?

4. What are potential barriers and facilitators pertaining to the integration of adapted App based BA based intervention at workplaces.

Objectives of the Study 2

1. To explore the feasibility and acceptability of BA-DMHI by key stakeholder primarily including service users and providers.
2. To explore the opportunity of conducting feasibility and large-scale clinical trials on BA-DMHI in future.

Research Questions of the Study 2

1. Is BA-DMHI acceptable to key stakeholders including service users and providers?
2. Can a feasibility clinical trial or large-scale clinical trial possible in future studies?

Delimitation(s) of the Study

There are number of delimitations of the study including: 1) the research will be carried out in a singular low-resource environment, thereby limiting the generalizability of the results to other contexts, 2) the research will concentrate on a particular variant of BA-DMHI, so the results may lack generalizability to alternative forms of interventions, 3) the scope of the study is limited to individuals employed in a workplace setting, hence caution should be exercised when attempting to apply the findings to other populations, 4) the study will solely evaluate the viability, acceptability, and efficacy of the intervention, hence precluding the assessment of additional outcomes, such as cost-effectiveness.

Despite these constraints, the study will nevertheless give useful information concerning the feasibility, acceptability, and effectiveness of BA-DMHIs in low-resource

settings. The results of this study will provide valuable insights for guiding the design and execution of future interventions within these particular contexts.

LITERATURE REVIEW

Available Workplace-Based Digital Mental Health Interventions (DMHI)

The workplace has been identified as a suitable setting for delivering mental health prevention programs, benefiting both employees and employers (Mykletun & Harvey, 2012; Wang et al., 2007). A recent article by van der Feltz-Cornelis et al. (2023) describes the development of a digital intervention called EMPOWER (European Platform to Promote health and wellbeing in the workplace). This user-centered program aims to address work stress for both employees and employers. Launched in 2021, EMPOWER utilizes a tailored algorithm to deliver personalized support at the individual and company level. Accessible via website and mobile app, the program assesses somatic and psychological symptoms, work functioning, and psychosocial risk factors. Based on this data, it provides personalized content and recommendations. Additionally, employers receive suggestions to reduce company-wide psychosocial risks based on employee input. Usability testing confirmed ease of use and task completion. The authors plan to evaluate EMPOWER's effectiveness through a randomized controlled trial across four countries.

Similarly, WorkGuru, a CBT-based online stress management program, has shown promising results. Structured around cognitive behavioral therapy (CBT), mindfulness, positive psychology, and problem-solving, WorkGuru is an 8-week modular program with seven core and three optional modules. Participants have the flexibility to choose the order and pace of module completion (Carolan et al., 2016). The program has been found to reduce levels of depression, anxiety, and stress while increasing post-intervention comfort and enthusiasm (Carolan et al., 2017).

A systematic review of 21 randomized control trials (RCTs) found significant post-intervention impacts of occupational digital mental health interventions on both mental health

and work efficiency (Carolan et al., 2017). Despite the availability of various apps and websites, the resource of digital health remains underutilized (Carolan & de Visser, 2018). Studies have reported that only a small percentage of the working population seeks psychological treatments (Dewa et al., 2011; Lim et al., 2000), leaving many untreated or partially treated (Wang et al., 2007).

Available DMHI for Common Mental Disorders: Smartphone Applications-Based

While numerous mobile applications aim to manage psychological health symptoms or diseases, most lack clinically proven evidence for long-term benefits. A systematic review found that only 14 out of 100 smartphone applications had clinically validated support for minimizing general psychological health disorders (Wang et al., 2018).

Smartphone Applications for Anxiety & Stress

Flowy, a mobile app, offers a game that provides breathing retraining exercises for managing hyperventilation symptoms, anxiety, and panic (Pham et al., 2016). The app has been found to be effective in reducing anxiety and panic symptoms. Similarly, the CTB-I Coach app aimed to reduce anxiety levels in patients undergoing breast cancer surgery but showed no discernible difference in anxiety levels between the control and intervention groups (Foley et al., 2016).

Another app, ABMT, was developed to enhance behavioral performance and concentration during stressful activities (Dennis-Tiwary et al., 2016). The Clickamico app was designed to reduce children's preoperative anxiety by having doctors dress as clowns and accompany the children to the operating room. The app was found to significantly lower mean anxiety levels in the experimental group compared to the control group.

Smartphone Applications for Managing Depression

A 2022 study by Deady et al. showed that a smartphone app called *HeadGear* can lessen symptoms of depression and might even prevent new cases from developing. This suggests that such apps could be helpful in improving mental health among working people. Further, two applications, namely T2 Mood Tracker (Bush et al., 2014) and Open Data Kit (ODK) (Hashemi et al., 2017), have been employed to address and manage depression. ODK has been particularly effective in conducting precise and rapid screenings for psychological disorders. Hashemi et al. (2017) reported that the application facilitated the swift and efficient identification of somatic symptoms, depression, and post-traumatic stress disorder (PTSD) among 986 war-affected children. T2 Mood Tracker, on the other hand, enables users to monitor their emotional states over time and share this data with healthcare professionals. The application has proven particularly beneficial for soldiers undergoing therapy at Warrior Transition Units for behavioral health issues (Bush et al., 2014).

Smartphone Applications for PTSD Management

A recent randomized controlled trial by Hensler et al. (2022) investigated the efficacy of a self-management app called *PTSD Coach* for a Swedish community sample exposed to trauma. The study found that the app led to reductions in posttraumatic stress and depressive symptoms after three months, with some participants even achieving remission from probable PTSD. While half of the app users reported at least one negative experience, most found it helpful and satisfactory. These findings suggest that PTSD Coach could be a valuable tool for managing trauma-related symptoms, although potential for triggering symptoms in some users necessitates further investigation.

Further, two distinct studies (Kuhn et al., 2014; Possemato et al., 2016) have explored the use of PTSD Coach, an application similar to Workguru, for managing PTSD symptoms. Possemato et al. (2016) conducted a randomized study involving 20 primary care veterans

and found that both intervention methods led to symptom improvement. Kuhn et al. (2014) conducted a focus group study with 45 veterans and found high levels of user satisfaction and perceived efficacy of the PTSD Coach application.

The Role of mHealth in Mental Healthcare

Given the ubiquity of mobile phones, mHealth applications hold significant promise for delivering mental healthcare, especially in rural areas where there is a dearth of mental health professionals. This is particularly relevant in low- and middle-income countries like India, where mHealth tools have been recognized for their potential in improving medication adherence and appointment reminders.

Concerns Regarding Clinical Validation

Despite the proliferation of mental health applications, only a fraction have undergone rigorous clinical validation. This raises serious concerns about the efficacy and safety of using non-validated applications for mental health management. The rapid pace of technological advancements further complicates the validation process, making it imperative for mental health professionals to be involved in the development and validation of these applications.

Criteria for Psychological Health Applications

According to Medical News Today (2022), psychological health applications should meet specific criteria, including support for multiple conditions, diverse features, affordability, and cross-platform availability. Based on these criteria, eight applications have been highlighted:

1. Calm: Awarded "App of the Year" by Apple in 2017, Calm focuses on reducing anxiety and promoting mindfulness. It offers a seven-day free trial and various subscription options.

2. Headspace: This application employs meditation and mindfulness techniques to reduce stress and is available on both iOS and Android platforms.

3. Moodnotes: Primarily a mood journal, Moodnotes employs techniques from CBT and positive psychology.

4. Sanvello: Designed to alleviate anxiety, Sanvello offers multiple pathways for self-care, peer support, coaching, and therapy.

5. SuperBetter: A game designed to build resilience and coping skills.

6. 7 Cups: Provides online counseling and emotional support for various issues.

7. Happify: Utilizes games and activities to build positive habits.

8. Talkspace: Offers various therapy options and is compatible with multiple platforms.

Therapeutic Strategies Employed by Apps

Many psychological health applications employ mindfulness and Cognitive Behavioral Therapy (CBT) techniques. For instance, a 2019 study found that Calm was effective in reducing stress among students. Similarly, a 2018 study reported that Headspace had a more significant impact on stress and irritation compared to a mindfulness audiobook. A 2015 study also indicated that daily use of SuperBetter reduced symptoms of depression.

By employing mindfulness and CBT techniques, these applications offer promising avenues for improving mental health, although further research is needed to substantiate these claims.

Factors Affecting User Engagement with DMHIs

User-Related Constructs

The factors pertaining to the user, like skills, individual belief, and experiences are known as User-related factors. The factors pertaining to the users have a partial influence on the user engagement with DMHIs. Further, demographic variables like age ≤50 years (Abel et al., 2018; Kannisto et al., 2017) and ≥30 years (Schneider et al., 2017; Beatty et al., 2017; Pruitt et al., 2019; Gunn et al., 2018; Achtyes et al., 2019) have higher engagement, gender: women have higher engagement (Graham et al., 2018; Abel et al., 2018; Kannisto et al., 2017), employment status: with individuals who worked full time were having more likelihood to seek intervention as compared to individuals who were retired from the service (Kannisto et al., 2017) or unemployed (Graham et al., 2018; Gunn et al., 2018), education: the participants having higher education reported higher acceptance of the treatment as compared to individuals having lower level of education (a high school diploma or lower) (Kemmeren et al., 2019; Watson et al., 2017), and housing situation: individuals who experienced homelessness responded less to the messages forwarded by a mobile phone intervention than the people with established housing (Mackesy-Amiti & Boodram, 2018).

The engagement was facilitated by personality traits, like openness, neuroticism, resistance to change and agreeableness (Ervasti et al., 2019; Mikolasek et al., 2018), whereas extraversion formed a barrier (March et al., 2018). On the other side, the severe mental health symptoms led to a deeper interest of the participants in using DMHIs (Pruitt et al., 2019; Huberty et al., 2019; Arjadi et al., 2018; Toscos et al., 2018; Crosier et al., 2016;), but symptoms linked to depression (Crooks et al., 2017), low mood (Eisner et al., 2019), and weariness prevented engagement (Mitchell et al., 2018). The positive beliefs and experiences of the individuals about the mental health services and technology facilitated the engagement,

and on the other side, if the beliefs and experiences of the individuals were negative about the mental health services and technology then they formed a barrier to the engagement (Borghouts et al. 2021).

Similarly, individuals' awareness about comprehending mental health (Allan et al., 2019; Gunn et al., 2018; Watson et al., 2017; Berry et al., 2019) and using technology (March et al., 2018; Jordan et al., 2019) facilitated their capability to use DMHIs. In the same way, individuals' negative prior experience created a barrier to engaging with a DMHI (Allan et al., 2019; Bucci et al., 2019; Watson et al., 2017), whereas a positive experience enhanced participants' engagement (Berry et al., 2019; Jordan et al., 2019; Diez-Canseco et al., 2018; Gunn et al., 2018; March et al., 2018; Gindidis et al., 2019), and any more involvement depended on how well people could integrate it into their daily lives (Borghouts et al. 2021).

Further, some barriers were also found that limited the usage by the participants like, when the individuals felt that they lack the time (Harjumaa et al., 2015; Laurie & Blandford 2016; Mitchell et al., 2018) or persistently forgot to exercise the treatment (Simblett et al., 2019; Thorsen et al., 2016), individuals believed that the treatment took too much time to use (Bengtsson et al., 2015; Urech et al., 2018; Walsh et al., 2018), and many participants had trouble keeping up a use schedule that was effective for them (Anastasiadou et al., 2019; Laurie & Blandford 2016).

Program-Related Constructs

The second group of constructs relates to the kind of intervention or material presented through the DMHI. The material presented by a DMHI had to be reliable and preferably presented in more than one modality (Borghouts et al. 2021). However, the uncertainty regarding the reliability of the information, specifically about the evidence support of the treatment and the source of information, was a barrier (Lal et al., 2016; Watson

et al., 2017; Burchert et al., 2019; Pretorius et al., 2019). Moreover, if the participants felt that the treatment was a good fit then they would engage with DMHIs, which might be made easier if the material was relevant (Wilhelmsen et al., 2013; Lundgren et al., 2018; Huis in het Veld et al., 2018; Chan et al., 2017; Dodd et al., 2017; Hamblen et al., 2019; Powell et al., 2017; Rodriguez et al., 2017; Wallin et al., 2018;), and the DMHI was customizable (Hartmann et al., 2019; Urech et al., 2018; Bucci et al., 2019; Forchuk et al., 2016; Rodriguez et al., 2017; Anastasiadou et al., 2019; Wachtler et al., 2018; Lipschitz et al., 2019; Similä et al., 2018;), culturally suitable, and used a language that the participants could understand.

Engagement was made easier by participants' understanding of whether a DMHI was helpful, which contained that whether they could comprehend the data (Murnane et al., 2016; Allan et al., 2019; Berry et al., 2019) and how to use it (Woolderink et al., 2015; Powell et al., 2017; Gonsalves et al., 2019; Walsh et al., 2018; Lundgren et al., 2018), and whether a DMHI gave them an obvious advantage over the available resources that they could access (Lundgren et al., 2018; Allan et al., 2019; Jordan & Shearer 2019; Lord et al., 2016; Feijt et al., 2018). Guided DMHIs had higher engagement than unguided interventions (Borghouts et al. 2021), and participants liked being able to connect with other people (Berry et al., 2019; Bucci et al., 2019; Carr et al., 2019; Fortuna et al., 2018; Huis in het Veld et al., 2018; Jarvis et al., 2019; Klein et al.,2019; Nicholas et al., 2017; Pung et al., 2018; Simblett et al., 2018; Switsers et al., 2018; Walsh et al., 2018; Wentzel et al., 2016; Wilhelmsen et al., 2013), although some studies identified concerns that DMHIs could be used to avoid in-person contact (Ashwick et al., 2019; Berry et al., 2019; Bucci et al., 2019; Crooks et al., 2017; Espinosa et al., 2016; Walsh et al., 2018). The negative (Berry et al., 2019; Simblett et al., 2019; Simões de Almeida et al., 2019; Terp et al., 2018) and positive (Chadi et al., 2018; Feijt et al., 2018; Görges et al., 2020; Jarvis et al., 2019; Kim et al., 2018; Kubo et al., 2018;

Muuraiskangas et al., 2016; Schroeder et al., 2018) impacts of DMHI use could form barriers and facilitators, respectively, to further engagement.

Technology- and Environment-Related Constructs

The third category of constructs deals with elements pertaining to the technology itself or its use. Although DMHIs posed usability and technological problems that could make it difficult for participants to participate, (Ashwick et al., 2019; Caplan et al., 2019; Edbrooke-Childs et al., 2019; Feijt et al., 2018; Kinner et al., 2018; Lundgrenet al., 2018; Miatello et al., 2018; Michalak et al., 2019; Mitchell et al., 2018; Newman et al., 2016; Reger et al., 2017; Whealin et al., 2017; Woolderink et al., 2015) such as worries about the potential costs associated with employing an intervention, mobile apps unexpectedly malfunctioning and shutting down, (Berry et al., 2019; Brandtet al., 2019; Connolly et al., 2018; Moessner et al., 2016; Nitsch et al., 2016; Simblett et al., 2019; Stiles-Shields et al., 2017), the lengthy process of logging into an intervention (Similä et al., 2018), and having trouble navigating an intervention (Hamblen et al., 2019; Wallin et al., 2018).

Additionally, the flexibility of the digital format allowed for resource access everywhere (Melton et al., 2017; Wallin et al., 2016) at any time (Baumel et al., 2016; Navarro et al., 2019; Povey et al., 2016; Simblett et al., 2019; Urech et al., 2018; Woolderink et al., 2015) also to keep a record of health information (Giroux et al., 2014; O'Brien et al., 2019). Information confidentiality and participants' ability to safely share information anonymously were key considerations (Ashford et al., 2018; Baumel 2015; Burchert et al., 2019; Carolan et al., 2018; Pretorius et al., 2019; Woolderink et al., 2015), Despite the fact that total anonymity makes it harder to believe other users on the platform (Nitsch et al., 2016; Wallin et al., 2016).

In addition, the therapists' prior experience with DMHIs and their ability to integrate it into their practise played an impact on user engagement if DMHIs were to be utilized as a component of ongoing therapy. Other people's thoughts of DMHIs, whether favourable or unfavourable, may act as a barrier or facilitator to interaction (Borghouts et al., 2021; Feijt et al., 2018; Forchuk et al., 2016; Henshall et al., 2017; Jamison et al., 2017; Wallin et al., 2016; Wallin, Norlund… et al., 2018). Finally, effective implementation increased user involvement (Borghouts et al. 2021). Users may interact with DMHIs more if they receive instruction on how to use them and the intervention is branded as one for well-being or mental fitness rather than mental health (Deady et al., 2017). If participants are just beginning therapy, they might be more engaged in DMHIs (Berry et al., 2019; Lattie et al., 2017), but the users may be more aware of their health and better able to understand their health information, which is the stated advantage of adding DMHIs later (Borghouts et al. 2021).

Behavioural Interventions in Psychology: Changing Unwanted Habits

Behavioural interventions are a core part of many psychological treatments. They aim to modify observable behaviours by understanding how a behaviour interacts with its environment and consequences. Recent research highlights this approach's effectiveness. For instance, a 2024 study by Wei et al. found a smartphone app delivering CBT for insomnia significantly improved sleep quality and reduced medication dependence. Additionally, Wood et al.'s 2016 research showed that using specific cues and rewards could increase adherence to exercise routines, emphasizing the importance of tailoring interventions. Finally, Li et al.'s 2023 study demonstrated the effectiveness of mindfulness training, a behavioural intervention for reducing anxiety in college students. These studies showcase the growing use of technology-based interventions and the flexibility of behavioural approaches in addressing both physical and mental health concerns.

Why Behavioral Activation Approach?

According to Whitty and Gilbody (2005), there are many mobile apps that are made to help individuals having psychological disorders like anxiety, stress, and depression and which are available in the commercial sector. Despite the fact that CBT and BA are the most common and effective mental treatments, few of them use them. Nevertheless, the researcher will use BA component of the CBT. Further, several experts have observed that Behavioral Activation is a simpler treatment than CBT, so it can be provided by junior psychological health practitioners having low-cost training and intensiveness with the same effectiveness like CBT. In addition, efficient psychological treatment for depression may be provided by common health practitioners having low cost (Richards et al., 2016). Similarly, the higher usage of BA was observed to have a close association with greater the decreasing symptoms for clients having mild to moderate preliminary depression symptoms (Hawle et al., 2017).

For depression, Behavioural Activation (BA) is now acknowledged as the front-line therapy and which is based on evidence (National Collaborating Centre for Mental Health, 2010). BA has a high degree of evidence from meta-analyses for treating depression (Butler et al., 2006; Cuijpers et al., 2007). The conventional method to administer BA between therapist and the patient has been face-to-face periodic sessions. However, the estimate about the number of individuals with major depression at 6.7% and the number even increases for Non-Major Depression (Kessler et al., 2005), it seems very hard to reaching every individual with this traditional approach. The most recent studies reveal that CBT and BA with self-support intervention through the internet can be used to successfully treat depression (Van't Hof et al., 2009; Ly et al., 2014; Moss et al., 2012;). Given that there are more internet-based studies supporting CBT/BA than other models with reliable evidence, this type of intervention is more suitable for delivering digital treatment (e.g., Interpersonal Therapy or Acceptance and Commitment Therapy). In the healthcare, mobile phone apps are one

potential delivery method for CBT or BA, which is a serious issue that needs to be addressed. Among the early phases of treating depression in young people who use smartphones more frequently, apps may be more beneficial (Huguet, et al., 2016).

Adherence to the BA & CBT

While assessing the accuracy and validity of the CBT/BA applications, it was observed that the average degree of adherence to CBT principles was found to be 15% (range: 0-75%), while the average level of adherence to BA principles was found to be 18.75% (range: 6.25–25%). (Huguet, et al., 2016).

Furthermore, despite rising public demand, there are significant concerns over a shortage of suitable CBT or BA apps, particularly from a medical and legal standpoint. To improve the creation and testing of applications for people with depression, the application of highly technical, legal, and scientific expertise is necessary (Huguet, et al., 2016).

Core Components of BA Approaches

In a systematic review, Huguet et al., (2016) regarded the following components as the main ingredients of the different Behavioral Approaches: 1) education about depression, 2) explanation of the model, 3) depression rating, 4) activity monitoring, 5) giving each activity a rating for pleasure, 6) giving each activity a rating for mastery, 7) activity scheduling of pleasant behaviours, and 8) activity scheduling of avoided behaviours. (Huguet, et al., 2016). However, it was observed that the main components of BA mostly consisted of: education regarding depression and ratings of depression, while the remaining main components were never wholly made part of the apps (Huguet, et al., 2016). In the backdrop of the above discussion, this study aimed to include all the main ingredients to make certain

the quality of managing the general health problems at the workplace through digital psychological health applications.

Chapter II

METHOD

Research Design

This study utilized a two-part mixed-methods design to fulfil its objectives. Mixed methods research combines quantitative and qualitative data collection and analysis techniques, providing a more thorough comprehension of the research phenomenon. The study encompassed two main components: (1) culturally adapting a BA intervention and developing an app for workplace stress management based on the adapted BA intervention, and (2) assessing the feasibility and acceptability of the BA-DMHI.

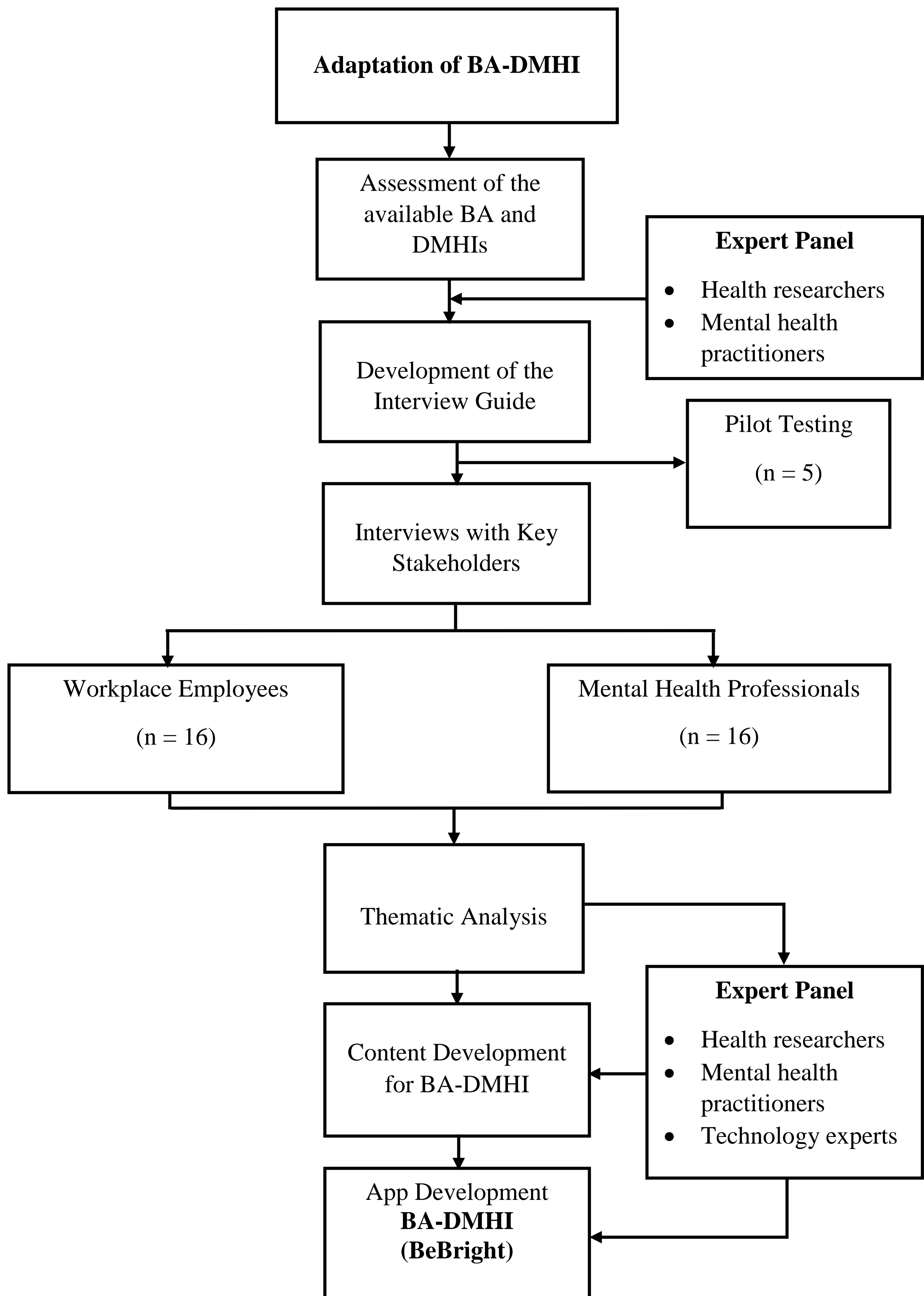
Study 1: Adaptation of BA-DMHI and Application Development

The study 1 will center on the modification of an app-based behavioural activation-based digital mental health intervention to suit the specific requirements of the Pakistani environment. This will entail several steps, including: Undertaking a needs assessment with the aim of identifying the precise mental health requirements of employed individuals in Pakistan. Reviewing the existing literature on BA interventions and adapting the intervention for Pakistan's cultural context.

Expert Panel

An interdisciplinary team of experts including health researchers (with at least 3 years of experience in health research), mental health practitioners (worked as mental health service provider for at least 3 years), and technology experts (3 years of expertise in development of Websites and Smartphone Apps) to guide and inform the study progression was developed. The meeting of this panel was carried out at the initiation of the research and 12th months.

Figure **1: Conceptual Model of Study 1**



Qualitative Interviews and Procedure

The topic and interview guide were developed and piloted (n = 5) with input from expert panels and a literature search relevant to Behavioral Activation (BA). These guides were used to elicit views on the adaptation, delivery, barriers, and facilitators pertaining to the delivery of BA-based Digital Mental Health Interventions (BA-DMHI). The topic guide was specifically designed with the study objectives in mind.

Face-to-face semi-structured interviews were conducted with study participants (n = 32), who were key stakeholders in the project. In cases where social distancing and lockdown measures were required due to the COVID-19 pandemic, or where participants were unable or unwilling to meet in person, telephone or video conferencing was considered as an alternative for conducting these interviews. All interviews were audio-recorded for later transcription and coding. The average duration of each interview was approximately 60 minutes.

Key Stakeholders (Participants)

Data was collected through in-depth, semi-structured interviews from a total of 32 stakeholders, divided into two major categories:

Workplace Employees (N = 16): This study aimed to explore the experiences of employees in various workplace settings, focusing particularly on their mental health. The participants were not necessarily seeking outpatient mental health services but were part of the study to provide insights into mental health issues in the workplace. The sample was diverse, consisting of 9 males and 7 females, with ages ranging from 28 to 40 years. Occupationally, the participants represented a wide range of fields, including business owners, doctors, clerical staff, marketing professionals, media

professionals, nurses, customer service representatives, and an IT professional. The data were analyzed using a thematic approach, and the main themes that emerged were 'Mental Health Issues,' with corresponding subthemes of 'Workplace Health Issues' and 'Experience with Work-Related Health Issues.'

Mental Health Professionals (N = 16): The study also aimed to explore the perspectives of mental health professionals on the recognition and understanding of common mental disorders, specifically focusing on depression, anxiety, and stress. The participants in this category included psychologists, psychiatrists, and mental health nurses. Data was collected through semi-structured interviews and subsequently analyzed using thematic analysis. This method allowed for the identification, analysis, and reporting of patterns within the data. The results of this analysis are organized by the main themes, subthemes, and codes identified.

Data Analysis

The data analysis process for this study was multi-faceted and rigorous to ensure the validity and reliability of the findings. Initially, all interviews were transcribed verbatim to capture the full context and nuances of the participants' responses. This meticulous transcription process aimed to preserve the integrity of the data by including pauses, intonations, and non-verbal cues, which could be critical for the subsequent analysis.

Following the transcription, the text was translated into English, to make it accessible for broader interpretation. This translation was performed by experts to maintain the semantic integrity of the original responses.

After the transcription and translation phases, the data underwent thematic analysis. This involved several steps, starting with the initial coding of the text. During this stage, key

phrases, sentences, or paragraphs were tagged with codes that encapsulated their core meaning. These codes were then grouped into broader categories, which were further refined and organized into overarching themes. These themes were identified based on their recurrence, significance, and relevance to the research questions.

The thematic analysis allowed for a deep, layered understanding of the data, providing insights into the participants' experiences, perceptions, and attitudes. This comprehensive approach ensured a robust and nuanced interpretation of the interview data, contributing to the study's overall validity.

Content and Mobile Application Development

The development of the Behavioral Activation (BA) treatment plan and the subsequent mobile application, "BeBright," was a multi-step, collaborative process that aimed to create a tailored Digital Mental Health Intervention (BA-DMHI) for managing workplace stress.

Adaptation of Behavioral Activation Treatment Plan. The initial phase involved adapting the existing Behavioral Activation (BA) treatment plan to suit the specific needs of workplace stress management. This adaptation was guided by a panel of experts in the fields of psychology, mental health, and workplace well-being. Their recommendations were instrumental in fine-tuning the treatment plan's content, structure, and delivery methods. Additionally, findings from a qualitative study were incorporated to ensure that the plan was empirically grounded and relevant to the target population.

Content Development. Based on the expert panel's recommendations and qualitative study findings, the content for the BA-DMHI was meticulously developed. This included

creating modules, exercises, and resources that were both scientifically rigorous and easily comprehensible. The content was designed to be interactive and engaging, with a focus on practical applicability in a workplace setting. Currently the content of BA-DMHI is in English language.

Mobile Application Development. After finalizing the content, the next step was the development of the "BeBright" mobile application. The app was designed to be user-friendly, intuitive, and accessible on various mobile platforms. It incorporated features like progress tracking, reminders, and interactive exercises to enhance user engagement and adherence to the treatment plan. The app underwent several rounds of testing and revisions to ensure its usability and effectiveness.

Final Product: BeBright Mobile App. The culmination of this process was the "BeBright" mobile app, a BA-based Digital Mental Health Intervention specifically tailored for managing workplace stress. It serves as a comprehensive tool that combines expert insights, empirical findings, and user-centric design to offer a holistic approach to mental well-being in the workplace.

BeBright: An Intervention

Discover beBright: Introduction to the BeBright Intervention. The "Discover BeBright" section serves as the introduction to the BeBright (Behavioural activation-based Digital Mental Health Intervention) program. This section lays the foundation by presenting the essentials of the BeBright platform, offering an overview of what Behavioral Activation-Based Digital Mental Health Intervention (BA-DMHI) is, how it functions, its benefits, and an array of example case studies. Both readable and listening options are available for each component to suit the client's learning preferences.

Goals

The primary goals of this introductory section are:

1. To clearly define what BA-DMHI, or BeBright, is.
2. To elucidate how the BeBright program operates.
3. To detail the benefits one can expect from participating in the program.
4. To provide real-world examples, segmented by gender and issue, to establish relatability and credibility.

Key Features and Methodology

i. What is Behavioral Activation-Based Digital Mental Health Intervention (BeBright)?

Purpose: To offer a comprehensive definition and background on the BeBright program, clarifying its scope, aims, and methodologies.

Methodology: The section outlines the core principles of behavioral activation and how these principles are digitized and personalized in the BeBright platform. Users can either read the information or listen to an audio explanation.

ii. How Does BA-DMHI Work?

Purpose: To outline the framework and steps involved in the BeBright program.

Methodology: An overview of the different modules in the BeBright program is provided, detailing what each module aims to accomplish and how. Both textual and audio formats are available for this component.

iii. What Are the Benefits of BA-DMHI?

Purpose: To outline the advantages of using the BeBright platform for managing mental health.

Methodology: This section lists the benefits such as personalization, accessibility, confidentiality, and evidence-based outcomes. Users can either read this information or listen to it.

iv. Example Case Studies (Depression, Anxiety, Workplace Stress for both Males and Females)

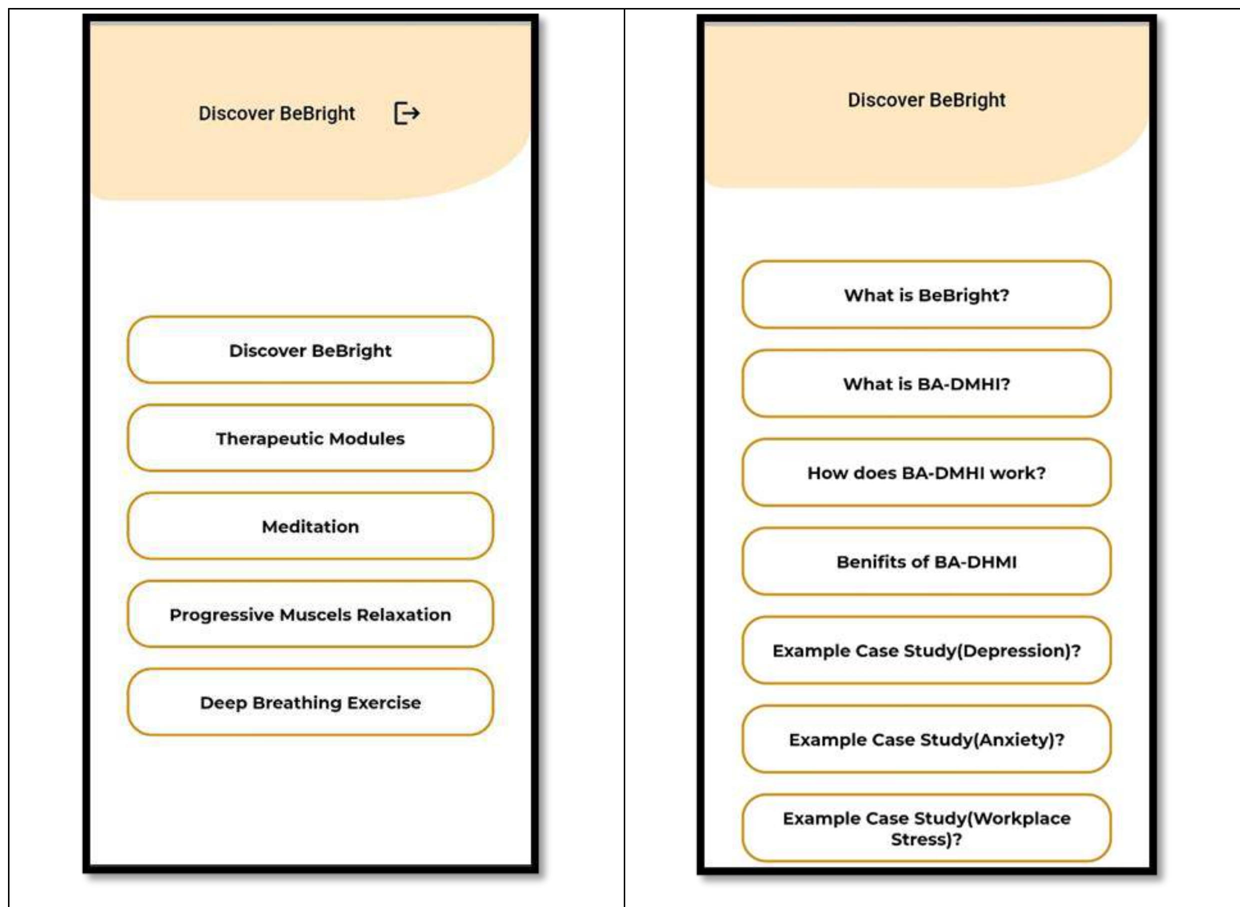
Purpose: To provide tangible examples of how the BeBright program can be effectively utilized for different types of mental health issues, across different genders.

Methodology: Real-life case studies or fictionalized yet realistic narratives are offered for various scenarios: Depression, Anxiety, and Workplace Stress for both male and female clients. These case studies delve into the individual's initial challenges, how they interacted with the BeBright program, and the outcomes they experienced. Again, both readable and listening options are available for each case study.

Conclusion

The "Discover BeBright" section serves as an indispensable starting point for potential and new users, offering a thorough understanding of the program's intricacies. By explicitly defining the program, explaining its functioning, stating its benefits, and providing relatable case studies, this section ensures that users have a well-rounded understanding of what to expect from the BeBright Intervention. The availability of both readable and listening materials adds an extra layer of accessibility, making the program inclusive and user-friendly.

Figure 2. *Sample Interface of Introduction to BeBright*



Module 1: Understanding Your Mental Health

Module 1 of the BeBright (Behavioral Activation-Based Digital Mental Health Intervention) program is a foundational component aimed at providing clients with a comprehensive understanding of mental health. This module incorporates both readable and listening materials to cater to a diverse range of learning preferences. Here's a detailed overview of the contents and objectives of this module:

1. What is Mental Health?

Purpose: The primary purpose of this section is to define and destigmatize the concept of mental health. It aims to educate clients about what mental health is and why it's essential to their overall well-being.

Goals:

- To provide a clear definition of mental health.
- To emphasize that mental health is a continuum, where everyone falls.
- To convey that mental health encompasses emotional, psychological, and social well-being.

Key Features:

- **Readable Material**: Clients are presented with easily digestible content that explains the concept of mental health, using relatable language and real-life examples.
- **Listening Material**: For auditory learners, an audio component supplements the content, reinforcing the understanding of mental health.

2. Common Mental Disorders

Purpose: This section educates clients about prevalent mental health disorders, reducing the stigma associated with these conditions. It aims to promote empathy and understanding.

Goals:

- To familiarize clients with common mental disorders such as depression, anxiety, and stress disorders.
- To emphasize that mental disorders are not uncommon and can affect anyone.
- To encourage clients to seek help if they suspect they may be experiencing a mental disorder.

Key Features:

- **Readable Material**: Clients are presented with concise descriptions of common mental disorders, their symptoms, and their impact on daily life.
- **Listening Material**: Audio content complements the text, providing aural reinforcement of the information.

3. Mental Health in the Workplace:

Purpose: This section explores the critical relationship between mental health and the workplace. It aims to empower clients with knowledge and strategies to manage workplace-related stressors.

Goals:

- To highlight the impact of work-related stress on mental health.
- To provide practical tips for managing workplace stress.
- To promote a healthy work-life balance.

Key Features:

- **Readable Material**: Clients receive practical advice on recognizing and addressing workplace stressors, maintaining boundaries, and seeking support.
- **Listening Material**: Audio content reinforces the strategies for managing workplace-related mental health challenges.

4. Stigma and Seeking Help

***Purpose*:** This section addresses the stigma surrounding mental health issues and the importance of seeking help when needed. It seeks to reduce barriers to accessing mental health support.

Goals:

- To discuss the stigma associated with mental health and seeking help.
- To encourage clients to challenge and change stigmatizing beliefs.
- To provide resources and guidance on how to seek professional help.

Key Features:

- **Readable Material**: Clients are presented with information on how societal stigma can impact individuals' willingness to seek help and how they can combat this stigma.
- **Listening Material**: Audio content reinforces the message of seeking help when needed, offering encouragement and support.

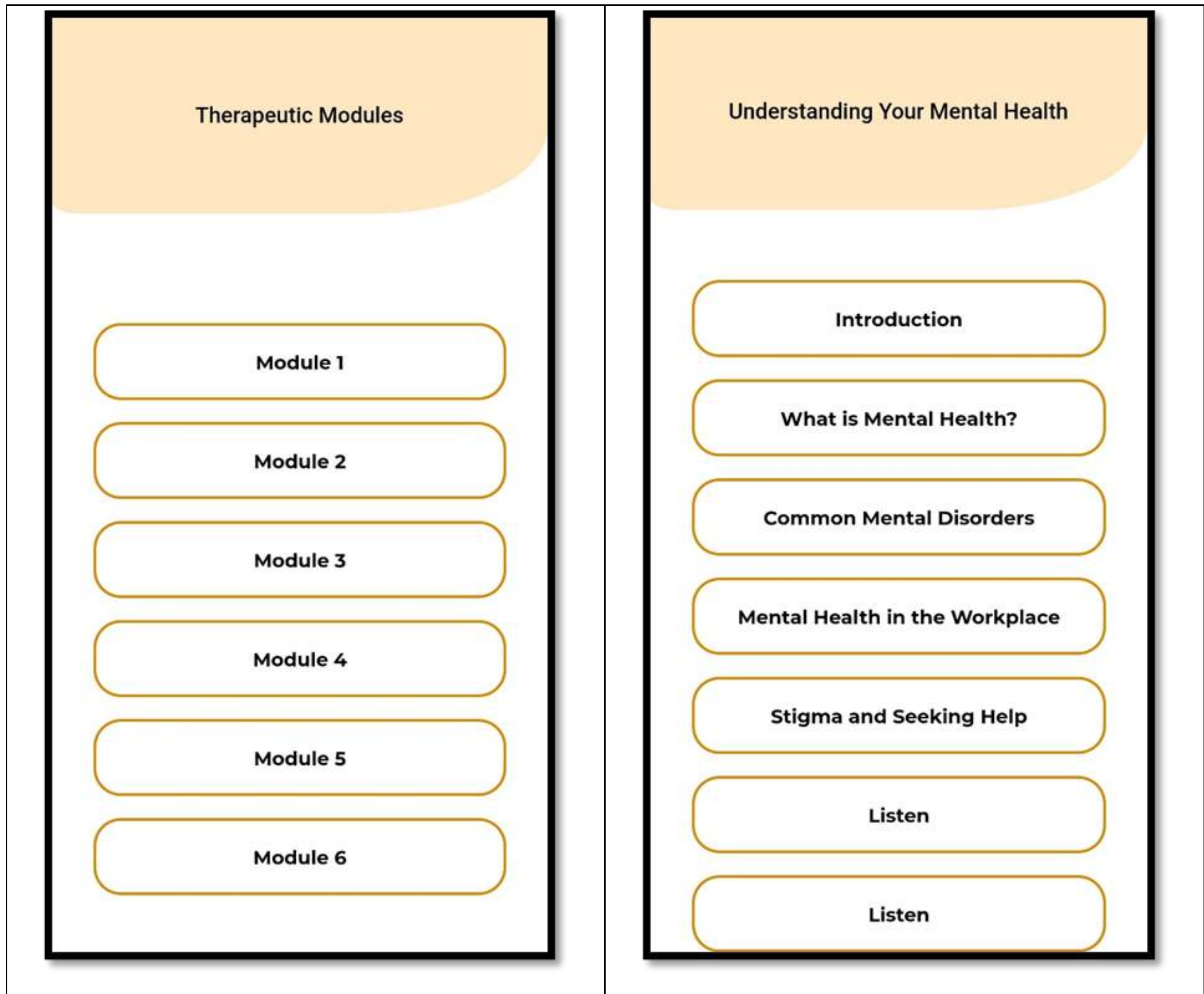
Methodology:

- **Interactive Learning**: Throughout Module 1, clients have opportunities to engage with self-awareness.

- **Progress Tracking**: BeBright's digital platform allows clients to track their progress through the module, promoting a sense of achievement.
- **Personalization**: Content is tailored to individual needs and preferences, ensuring engagement and relevance.
- **Accessibility**: The combination of readable and listening materials accommodates different learning styles and accessibility requirements.

Module 1 serves as a crucial starting point in the BeBright program, equipping clients with the knowledge and tools they need to begin their journey towards improved mental health. It fosters understanding, reduces stigma, and empowers clients to take proactive steps in managing their mental well-being.

Figure 3. *Sample Interface of Module 1 of the BeBright*



Module 2: Self-Assessment in the BeBright Intervention

Introduction

The Self-Assessment module in the BeBright (Behavioural activation-based Digital Mental Health Intervention) is designed to offer users a comprehensive toolset to evaluate their mental well-being, particularly in areas linked to mood, symptoms of stress, depression and anxiety, work-related stressors, lifestyle factors, and overall wellness. The primary purpose of this module is to assist users in gaining a deeper understanding of their mental state, subsequently allowing the BeBright system to offer targeted interventions. This enables a personalized approach that can significantly improve the effectiveness of mental health support.

Goals

The goals of Module 2: Self-Assessment are as follows:

1. To empower users to assess their emotional well-being.
2. To help identify common symptoms associated with stress, depression, and anxiety.
3. To evaluate work-related stressors affecting mental health.
4. To assess lifestyle factors impacting mental and emotional stability.
5. To generate user-specific scores for each factor, contributing to a more personalized intervention strategy.

Key Features and Methodology

1. Mood Assessment

Purpose: The purpose of the Mood Assessment section is to allow users assess their mood and emotional state in the past one week.

Methodology: Users have the option of rating their mood on a scale from 1 to 10, either daily or at multiple times during the day (e.g., morning and evening). Additional questions may be asked to delve into specific aspects of emotional well-being. All data is stored and analyzed to identify mood patterns or fluctuations, which can then be addressed through personalized interventions.

2. Symptoms Check

Purpose: This section aims to provide a checklist of common symptoms that may be associated with stress, anxiety, or depression.

Methodology: Users will go through a list of symptoms typically related to stress, depression, and anxiety. By checking off which symptoms they experience, the app can better tailor its interventions.

3. Work-related Stressors

Purpose: The section aims to pinpoint the specific aspects of a user's work environment that may be causing them stress.

Methodology: Users can select from multiple checkboxes that detail common stressors in the workplace such as high workloads, lack of control, job insecurity, etc. This selection process helps the app tailor coping mechanisms that address the specific stressors identified.

4. Lifestyle Factors

Purpose: This section aims to provide a holistic understanding of how different lifestyle elements can affect mental health.

Methodology: Users can provide information about their sleep patterns, physical activity levels, dietary habits, and more. These factors are then analyzed to suggest lifestyle modifications that could improve mental well-being.

- **Sleep**: Users report their average sleep duration and quality.
- **Physical Activity**: Users input the type and duration of physical activity they engage in each week.
- **Dietary Habits**: Information about food consumption patterns is collected.
- **Substance Use**: Users can report any use of substances like alcohol, tobacco, or other drugs.
- **Social Relationships**: The quality and quantity of social interactions are assessed.
- **Stress Levels**: General stress levels are evaluated.
- **Time Spent Outdoors**: The amount of time spent in nature is recorded.
- **Mindfulness and Meditation**: Users state if they engage in mindfulness practices.
- **Work-Life Balance**: The balance between work commitments and personal life is assessed.
- **Screen Time**: The average time spent on screens is evaluated.
- **Hydration**: Users report on their daily water consumption.

5. Results (Scores of Each Factor)

Purpose: To provide an aggregate assessment score for each of the factors evaluated.

Methodology: Based on the data collected from the various sections, the app calculates scores for each factor. These scores will serve as a basis for customizing future interventions within the BeBright platform.

Conclusion

The Self-Assessment module serves as an integral part of the BeBright Intervention. It allows for an in-depth understanding of individual differences in mood, stress, lifestyle factors, and more. This information plays a critical role in tailoring effective and personalized mental health interventions for users. By encouraging active participation, this module empowers users to take control of their mental well-being.

Figure 4. *Sample Interface of Module 2 of the BeBright*

Module 3: Goal Setting in the BeBright Intervention

Introduction

Module 3: Goal Setting serves as a vital cog in the BeBright (Behavioural activation-based Digital Mental Health Intervention) program, aimed at enhancing mental well-being and lifestyle quality. Building upon the insights garnered from the Self-Assessment module, this part of the intervention encourages users to set personalized goals that resonate with their interests and needs. The module is structured to guide users through a systematic approach, from choosing appropriate activities to setting SMART goals and assessing their accomplishments.

Goals

The overarching goals of this module are:

1. To offer a diverse menu of activities that cater to different interests and needs, thereby resonating with users.
2. To equip users with the tools to set achievable, meaningful goals.
3. To assess and celebrate accomplishments, promoting a cycle of positive reinforcement.

Key Features and Methodology

Step 1: Choose Activities that Resonate

Purpose: The purpose of this step is to present users with a myriad of activities that align with their interests and are conducive to enriching their lives.

Methodology:

Activities Menu

The activities are categorized into various domains to make navigation easier and more targeted:

1. **Life Enrichment Activities (77 Activities)**
    - Includes varied categories such as Animals, Cooking, Mind activities, Self-care, Writing, Music, Social Connection, Cleaning, Exploration, Nature, Physical Activity, Kindness, Reading, Watching, Mending, Scheduling, Planning, and Learning.
2. **Spiritual Activities (31 Activities)**
    - Focuses on activities that foster spiritual well-being such as Engage in Salah (Prayer), Recite from the Quran etc.
3. **Cultural Activities (29 Activities)**
    - Activities related to different cultures and traditions such as "Enjoy Pakistani cuisine like Biryani and Nihari", Visit the Lahore Fort etc.
4. **Workplace Activities (58 Activities)**
    - Work-related activities aiming to reduce stress and promote a healthy work-life balance such as Make a priority task list each day, Update your resume and LinkedIn profile etc.

Step 2: Setting SMART Goals

Purpose: The purpose of this step is to help users set SMART (Specific, Measurable, Achievable, Relevant, and Time-bound) goals, allowing for a structured and effective approach to accomplishing them.

Methodology: After choosing activities from the menu, the BeBright program guides users in formulating SMART goals. A template is provided, which breaks down the SMART criteria, assisting users in outlining precise objectives and actionable steps.

Step 3: Activity Accomplishment Assessment

Purpose: The primary purpose of this step is to gauge the level of easiness and difficulty in the selected activities.

Methodology: Ranking the selected activities to start practice of the activity from easiest to hardest one. These assessments are stored for future reference and contribute to a continuous cycle of improvement and personalized intervention.

Conclusion

Module 3: Goal Setting is pivotal for the personalized, behaviorally-driven approach of the BeBright Intervention. It is meticulously designed to resonate with individual needs and preferences, providing a versatile platform for meaningful engagement. By aligning goal-setting with personal interests and employing the SMART framework, the module increases the likelihood of sustained user engagement and successful outcomes. Furthermore, the Activity Accomplishment Assessment serves to celebrate milestones and refocus efforts, thereby perpetuating a positive cycle of mental well-being and life enrichment.

Figure 5. *Sample Interface of Module 3 of the BeBright*

Module 4: Behavioral Activation Techniques & Strategies in the BeBright Intervention

Introduction

Module 4 of the BeBright (Behavioural activation-based Digital Mental Health Intervention) serves as a practical toolkit, providing a comprehensive array of behavioral activation techniques and strategies. This module builds upon the previous modules by giving users hands-on techniques to improve their mental well-being. It encompasses a wide array of approaches, from mindfulness practices to activity-based therapies, making it a versatile component of the BeBright Intervention.

Goals

The primary goals of Module 4 are as follows:

1. To introduce and reinforce behavioral activation techniques that can improve mental health.
2. To provide users with a structured, guided approach for practicing these techniques.
3. To facilitate ongoing monitoring and assessment of activities.
4. To encourage positive thinking and social support as integral components of mental well-being.

Key Features and Methodology

1. Mindfulness and Relaxation

Purpose: The aim is to instil mindfulness techniques that can help users focus on the present moment, thereby reducing stress and improving overall mental health.

Methodology:

- **Meditation**: A step-by-step guide, possibly with audio support, to walk users through various forms of meditation.
- **Progressive Muscles Relaxation**: A guided routine to help users relieve muscle tension, often accompanied by audio or textual instructions.
- **Deep Breathing Exercise**: Techniques for controlled, deep breathing are taught, often with visual or audio aids for better understanding.

2. Activity Practice

Purpose: The objective is to involve users in engaging, stimulating activities that contribute to their mental well-being.

Methodology: **Example Activities**: Users can choose to "Read" or "Listen" to a set of activities (Example 1, Example 2, Example 3, Example 4) that are oriented towards specific goals, such as emotional regulation, problem-solving, or enhancing creativity.

3. Monitoring Activities

Purpose: The aim is to provide tools for tracking progress over time and understanding the impact of various activities on mental health.

Methodology: **Downloadable Worksheets**: The module provides 5 different downloadable worksheets that guide users through the process of tracking their activities and emotions. Example worksheets are also available to illustrate how to properly utilize these resources.

4. Gratitude and Positive Thinking

Purpose: The goal is to instill a sense of gratitude and positive thinking, which are instrumental in boosting mental well-being.

Methodology: With Examples (Text and Listen): Users can read or listen to examples that illustrate the power of gratitude and positive thinking. They are encouraged to practice these principles in their day-to-day lives.

5. Social and Community Support

Purpose: To emphasize the importance of social relationships and community support in maintaining and improving mental health.

Methodology: With Examples (Text and Listen): Real-life examples, accessible both in text and audio formats, illuminate the benefits of having a robust social support system. Users are encouraged to engage with their communities and social circles in meaningful ways.

Conclusion

Module 4: Behavioral Activation Techniques & Strategies is a cornerstone of the BeBright Intervention program. It offers a comprehensive, multi-faceted approach towards improving mental well-being through actionable, evidence-based techniques. Whether it's through mindfulness practices, guided activities, or fostering positive thinking and social interactions, this module is designed to empower users to take proactive steps in managing their mental health. By offering a range of resources, from downloadable worksheets to audio-visual aids, Module 4 provides a rich, interactive experience that complements the personalized strategy outlined in earlier modules of the BeBright program.

Figure 6. *Sample Interface of Module 4 of the BeBright*

Module 5: Review and Reflection in the BeBright Intervention

Introduction

Module 5: Review and Reflection is the culmination of the BeBright (Behavioural activation-based Digital Mental Health Intervention) journey, designed to enable users to reflect on their progress. Through this module, users are invited to re-assess various facets of their mental well-being following their engagement with the activities and strategies offered in previous modules. The ultimate goal is to assess the efficacy of the intervention, calibrate future interventions, and measure client satisfaction.

Goals

The core goals of Module 5 are:

1. To facilitate a comprehensive review of the user's mental state after undergoing the behavioral activation interventions.
2. To assess the impact of the intervention on mood, symptoms, work-related stressors, and lifestyle factors.
3. To gauge client satisfaction through a standardized questionnaire, thereby ensuring the program is effectively meeting users' needs.

Key Features and Methodology

1. Mood Assessment

Purpose: Similar to the initial Self-Assessment module, this segment aims to track users' mood patterns after the intervention.

Methodology: Users can rate their mood on a scale of 1-10, either once daily or at multiple times throughout the day (e.g., morning and evening). More nuanced questions may be

provided for a deeper emotional inventory. This data is then analyzed to assess any changes or improvements in mood patterns over time.

2. Symptoms Check

Purpose: To measure the reduction or intensification of symptoms related to stress, depression, and anxiety after the intervention.

Methodology: A list of common symptoms is presented, allowing users to tick off any they experience, offering insight into whether the intervention has been effective in symptom management.

3. Work-related Stressors

Purpose: To evaluate how the intervention has impacted the user's perception and management of work-related stressors.

Methodology: The checklist from the initial assessment is revisited, allowing users to check off any stressors they currently face. Changes in this section can help measure the effectiveness of the coping strategies introduced in the program.

4. Lifestyle Factors

Purpose: To determine if lifestyle improvements have been made as a result of the intervention, focusing on aspects such as sleep quality, physical activity levels, and dietary habits.

Methodology: Users are asked to fill in information on various lifestyle factors, similar to the Self-Assessment module, for a comparative review. Changes in these factors can indicate the impact of the intervention on overall lifestyle quality.

5. Assessing Client Satisfaction

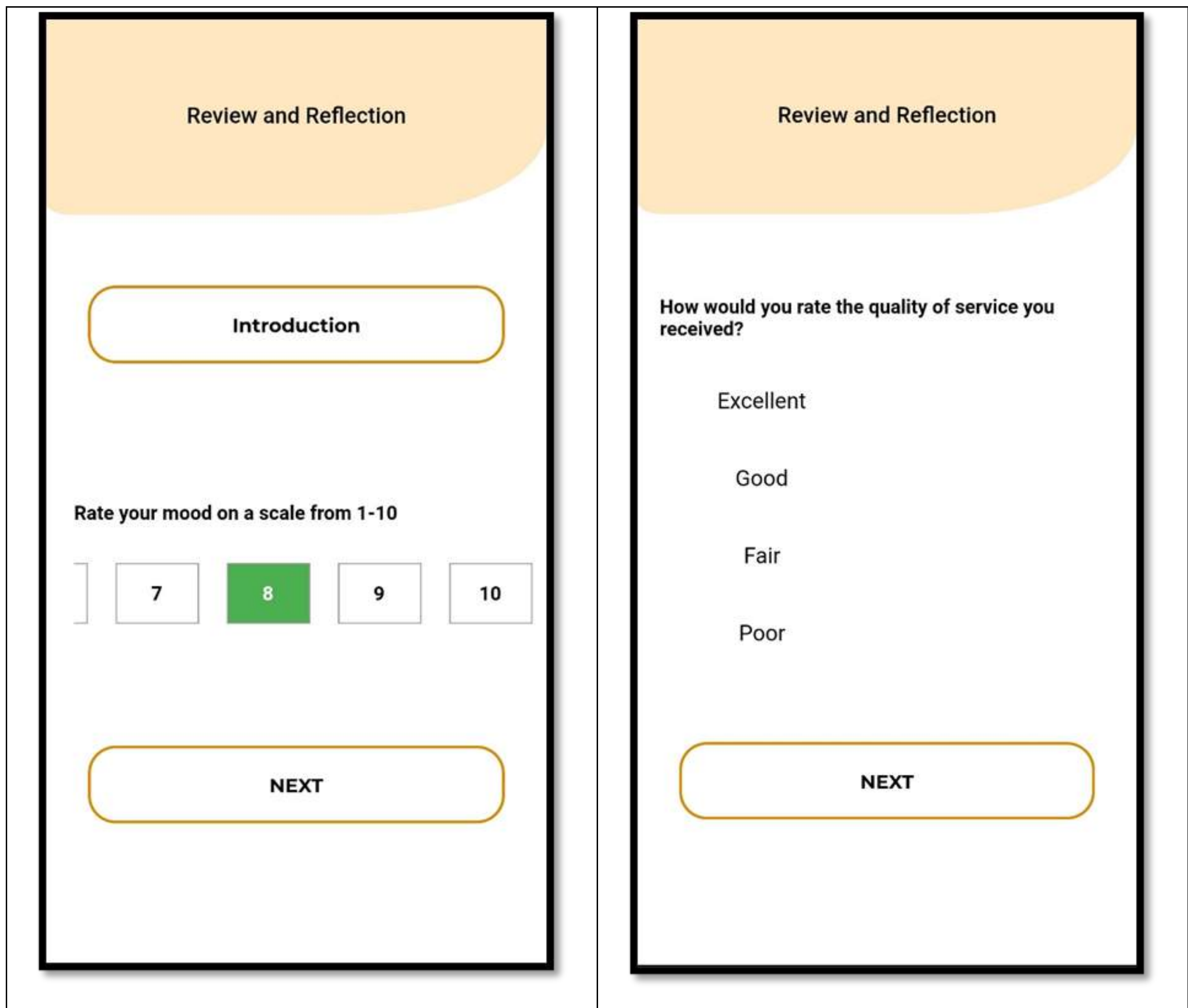
Purpose: To evaluate how satisfied users are with the BeBright intervention.

Methodology: The Client Satisfaction Questionnaire (CSQ-8) is employed to obtain a comprehensive understanding of user satisfaction levels. Higher scores on this standardized questionnaire signify greater satisfaction with the services provided, whereas lower scores indicate the need for improvement.

Conclusion

Module 5: Review and Reflection serves as a critical feedback loop within the BeBright Intervention. By revisiting key areas like mood, symptoms, work-related stressors, and lifestyle factors, it offers an empirical basis to evaluate the effectiveness of the intervention. Importantly, by incorporating a standardized client satisfaction questionnaire, the module ensures that user feedback is captured in a structured manner, thereby facilitating continuous improvement. This module doesn't merely mark the end of an intervention cycle but sets the stage for sustained mental well-being through ongoing, data-driven, personalized care.

Figure 7. *Sample Interface of Module 5 of the BeBright*



Module 6: Maintenance and Relapse Prevention in the BeBright Intervention

Introduction

Module 6: Maintenance and Relapse Prevention is an integral part of the BeBright (Behavioural activation-based Digital Mental Health Intervention), designed to empower users with long-term strategies for sustaining their mental well-being. Unlike previous modules that focus on assessment and immediate behavioral activation, this module centers on durability—ensuring that the gains made through the intervention are not only maintained but also fortified against potential setbacks or relapses.

Goals

The overarching goals of Module 6 include:

1. To instill a regimen of self-care practices that users can incorporate into their daily lives.
2. To equip users with stress management techniques that are both effective and sustainable.
3. To provide ongoing support and resources that users can access beyond the immediate scope of the BeBright program.
4. To prepare users with strategies designed to prevent relapse, ensuring long-term mental well-being.

Key Features and Methodology

This module offers both readable and listening options to cater to different user preferences and learning styles. Here are the key components:

i. Self-Care Practices

Purpose: The aim is to establish a routine of self-care activities that can nourish the mind, body, and soul, thereby becoming a continuous source of rejuvenation and resilience.

Methodology: The module outlines a variety of self-care activities, ranging from physical exercise to mindfulness practices. Users can read or listen to guided instructions and tips on how to integrate these activities into their lives. Practical examples and real-life case studies may also be incorporated for better understanding.

ii. Stress Management Techniques

Purpose: To arm users with a toolkit of stress management techniques that can be used in various contexts and situations, thereby increasing resilience.

Methodology: Techniques such as deep breathing, progressive muscle relaxation, and cognitive restructuring are outlined. Users can either read through the methodology or listen to guided instructions, making it easier to grasp and apply these techniques.

iii. Ongoing Support

Purpose: To provide an ongoing support mechanism that users can rely on after the conclusion of the BeBright intervention, making it easier to maintain gains and navigate challenges.

Methodology: This segment provides a directory of resources, including helplines, support groups, and literature, which users can access for long-term support. It may also offer features like community forums or periodic check-ins to foster a sense of sustained community and guidance.

iv. Preventing Relapse

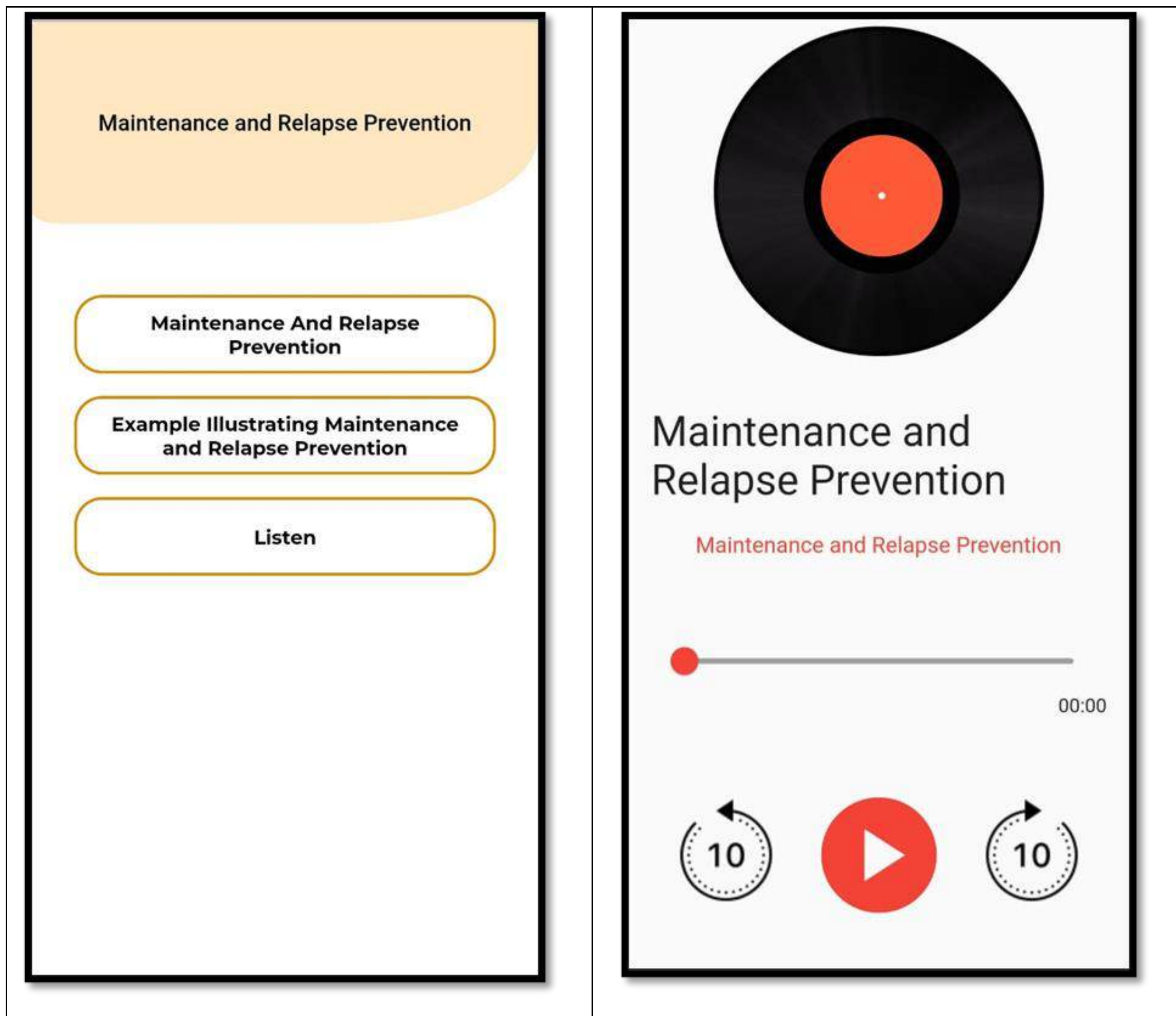
Purpose: The aim is to preemptively address the potential for relapse by identifying triggers and formulating action plans.

Methodology: Users are guided through the process of identifying potential relapse triggers and crafting actionable response plans. Strategies may include recognizing early warning signs, employing coping skills, and seeking support. Users can either read or listen to these strategies based on their preference.

Conclusion

Module 6: Maintenance and Relapse Prevention serves as the capstone of the BeBright Intervention, offering a robust framework for sustained mental well-being. By focusing on the long term—through the inculcation of self-care practices, stress management techniques, provision of ongoing support, and relapse prevention strategies—this module serves as a lighthouse, guiding users toward lasting resilience and mental health stability. The inclusion of both readable and listening options enhances user engagement, accommodating diverse learning styles and making the program as accessible as possible.

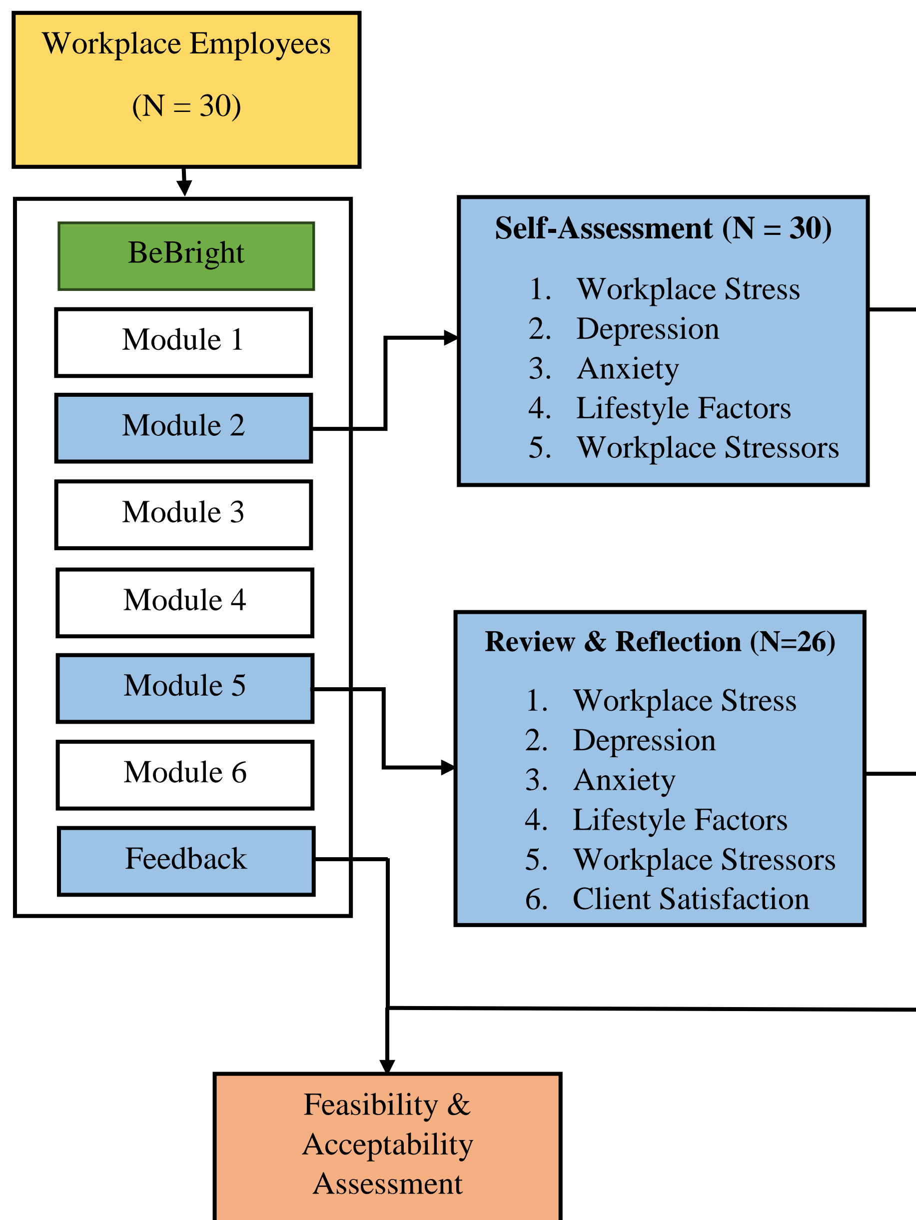
Figure 8. *Sample Interface of Module 6 of the BeBright*



Study 2: Feasibility and Acceptability Assessment of the BA-DMHI at Workplace

Study 2 employed a quantitative research methodology. In this phase, the BA-DMHI (BeBright) was administered to individuals experiencing mild to moderate level of distress. The aim was to evaluate the intervention's acceptability and feasibility for workplace employees. Quantitative metrics, including the Workplace Stress Scale, the Depression, Anxiety, and Stress Scale (DASS-21), and the Client Satisfaction Questionnaire, were utilized to assess the acceptability of the app-based BA-DMHI (BeBright) for managing mild to moderate level of workplace stress, anxiety and depression.

***Figure* 9: Conceptual Model of Study 2**



Participants

A total of sixteen participants (N = 16) were initially targeted for recruitment in this study, based on criteria outlined by Julious (2005). However, it's important to note that access to the "BeBright" mobile application was eventually extended to 30 participants to broaden the scope of the study. Feasibility and acceptability studies are often pilot projects or initial investigations with limited resources, including time, budget, and personnel. A smaller sample allows for efficient data collection and analysis within these constraints.

Inclusion Criteria. Participants were considered eligible for the study if they met the following criteria:

1. **Age**: Participants had to be 18 years of age or older to be included in the study.
2. **Employment Status**: Individuals needed to be currently employed in either a public or private organization.
3. **Internet Access**: Access to the internet was a prerequisite, as the intervention was delivered through a mobile application.
4. **Stress Levels**: Participants were required to have an elevated stress level, indicated by a score of 13 or higher on the Depression, Anxiety, and Stress Scale (DASS-Stress).

Exclusion Criteria. Participants were excluded from the study if they met any of the following conditions:

1. **Psychotic Disorders or Substance Abuse**: Individuals suffering from any psychotic disorders, drug abuse, or alcohol dependence were not eligible. I screening checklist was used for this purpose.
2. **Suicidal Risk**: Those who were at an imminent risk of suicide were excluded.

3. **Inability to Respond**: Participants who were unable to respond to research questions due to cognitive or other impairments were not included.
4. **Current Treatment**: Individuals who were already receiving services or interventions for stress from an institute or organization were not eligible for this study.

By adhering to these inclusion and exclusion criteria, the study aimed to ensure a participant pool that was both relevant and conducive to the research objectives.

Intervention (BeBright) Modules

After the development of the indigenously adapted "BeBright" app, a total of 30 participants were granted access to utilize the platform for managing mild to moderate levels of common mental disorders in the workplace, such as stress, anxiety, and depression. The intervention comprises six finalized modules, each incorporating specific behavioral strategies:

Module 1: Understanding Your Mental Health. This introductory module educates participants on the concept of mental well-being and its significance in daily life.

Module 2: Self-Assessment. Participants engage in a comprehensive self-assessment that evaluates workplace stress, depression, anxiety, lifestyle factors, and workplace stressors. Data collected at this stage serves as a baseline for comparison in later modules.

Module 3: Goal Setting. This module assists participants in recognizing healthy behaviors and those that align with their life goals, providing alternatives to replace unhealthy behaviors.

Module 4: Behavioral Activation Techniques & Strategies. Participants are introduced to activity scheduling, which is based on the behavioral monitoring conducted in the earlier modules.

Module 5: Review and Reflection. Participants revisit their initial self-assessment to gauge progress, reflect on their experiences, and make any necessary adjustments to their behavioral strategies. The data from Module 2 is compared here to assess improvements.

Module 6: Maintenance and Relapse Prevention. The final module focuses on maintaining the progress achieved and offers strategies for preventing relapse through continuous monitoring. A client satisfaction questionnaire is also administered to evaluate the overall experience with the BeBright app.

The specifics of the intervention, including the strategies employed and the app's content, have been meticulously developed and refined based on the study's findings and recommendations from the expert panel.

Instruments/Measures (Service Users)

The following measures were employed for self-assessment while using the "BeBright" application during both the 2nd and 5th modules:

Depression, Anxiety and Stress Scale (DASS-21). A measure of depression, anxiety and stress (DASS-21) (Lovibond and Lovibond, 1995) is a 21-item scale that was designed to measure the negative emotional states of depression, anxiety and stress. Items are answered on a 4-point Likert scale (0 = did not apply to me at all; 3 = applied to me very much or most of the time). Cronbach's α for the subscales are: depression α = 0.88; anxiety α = 0.90; stress α = 0.84.

Workplace Stress Scale (WSS). Workplace stress was assessed using the Workplace Stress Scale (WSS) developed by the Marlin Company, North Haven, CT, USA, and the American Institute of Stress, Yonkers, NY, USA (2001). The WSS consists of eight items describing how often a respondent feels an aspect of his or her job. Examples of items in the scale include 'Conditions at work are unpleasant or sometimes even unsafe' and 'I feel that my job is negatively affecting my physical or emotional well-being'. In terms of scoring, item numbers 6, 7 and 8 are reverse-scored. The scale is in the five-point Likert response format, ranging from never (scored 1) to very often (scored 5). High scores are indicative of higher levels of workplace stress. Respondents' total scores are interpret as follows: Total score of 15 or lower: Chilled out and relatively calm. Stress isn't much of an issue. Total score 16 to 20: Fairly low workplace stress. Total score 21-25: experiencing Moderate level of workplace stress. Total score 26-30: experiencing severe levels of work stress. Total score 31- 40: Stress level at workplace is potentially dangerous – the more so the higher your score. The Cronbach's alpha reliability coefficient of 0.80 for the entire scale WSS is reported in a study of Soltan et al., (2020).

Client Satisfaction Questionnaire (CSQ-8). The Client Satisfaction Questionnaire (CSQ-8) is used worldwide in the measurement of client/patient assessment of satisfaction with services and clinical care. It is self-administered, with data collected usually at the end

of services or at desired intervals during the service process. Items include questions enquiring about respondents' opinions and conclusions about services they have received or are currently receiving. Response options differ from item to item, but all are based on a four-point scale. Examples include: "How satisfied are you with the amount of help you have received?" (which response options: 1 =" Quite dissatisfied", 2 = "Indifferent or mildly dissatisfied", 3 = "Mostly satisfied", 4 = "Very satisfied"; and, "Have the services you received helped you to deal more effectively with your problems?" (Which has the response options: 4 = "Yes, they helped a great deal", 3 = "Yes, they helped somewhat", 2 =" No, they didn't help", 1 = "No, they seemed to make things worse". All items are positively worded; however, the directionality of response options span the spectrum from very negative to very positive; and, the numerical anchors for items are reversed randomly (from high to low or low to high) from item to item to minimize stereotypic response sets. While addressing several elements that contribute to service satisfaction, the CSQ-8 has no subscales and reports a single score measuring a single dimension of overall satisfaction. An overall score is produced by summing all item responses. For the CSQ-8 version, scores range from 8 to 32, with higher values indicating higher satisfaction. the internal consistency of the CSQ-8, as measured by coefficient alpha, ranged from .83 to .93 (Attkisson, & Greenfield, 2004).

Feasibility Assessment

Objective. The primary objective of this segment within the Methods chapter is to delineate the methodological framework employed to assess the feasibility of the "BeBright" mobile application. This application serves as a Behavioral Activation-based Digital Mental Health Intervention (BA-DMHI) specifically designed to manage workplace stress.

Participant Recruitment. Initially, the study aimed to recruit 16 participants based on a set of predetermined inclusion and exclusion criteria. However, to enhance the

robustness of the feasibility assessment, the study was expanded to include a total of 30 participants.

Measures Employed. For the purpose of this feasibility assessment, a series of measures were integrated into specific modules within the "BeBright" application. These measures were strategically placed in the 2nd and 5th modules of the app and included:

- Mood Assessment: To gauge the emotional state of the participants.
- Symptoms Check for Workplace Stress: To identify specific stressors affecting participants in their workplace.
- Depression and Anxiety Assessment: To evaluate the mental health status of the participants.
- Lifestyle Factors: To understand external factors that might contribute to workplace stress.
- Workplace Stressors: To identify and assess elements within the workplace that contribute to overall stress levels.
- Client Satisfaction Questionnaire: To gauge the level of satisfaction among participants with the intervention in the module 5 of the BeBright.

Data Collection Procedures. Data were systematically collected through the application, capturing essential metrics such as user engagement, adherence rates, and changes in mood, stress, anxiety and depression levels. This data collection was designed to provide a multi-dimensional understanding of the application's feasibility and effectiveness in a real-world setting.

Implementation Procedure. Participants were guided to complete the 2nd and 5th modules of the "BeBright" application, which were specifically designed to contain the

aforementioned measures. In addition to these modules, participants were encouraged to engage with other features of the app, such as progress tracking and interactive exercises including meditation, progressive muscles relaxation and deep breathing exercise. This was intended to offer a comprehensive user experience evaluation, thereby enriching the feasibility assessment.

By outlining these methodological steps, this section of the Methods chapter aims to provide a rigorous and transparent framework for the feasibility assessment of the "BeBright" mobile application. This sets the stage for the subsequent Results and Discussion chapters, where the data will be analyzed and interpreted.

Data Analysis

The aim of this section is to outline the analytical methods used to evaluate both qualitative and quantitative data. These methods were selected to assess the feasibility and effectiveness of BeBright, a Behavioral Activation-based Digital Mental Health Intervention (BA-DMHI) designed to manage workplace stress. Qualitative data were analyzed using thematic analysis, facilitated by NVivo software (Version 12.1). This approach involves the identification, analysis, and interpretation of patterns or themes within qualitative data, allowing for a systematic exploration of participants' experiences and perspectives (Braun & Clarke, 2006).

Quantitative data were analyzed using the Statistical Package for the Social Sciences (SPSS; Version 28). Descriptive statistics, including frequencies, percentages, means, standard deviations, as well as minimum and maximum values, were computed to offer a comprehensive overview of the dataset. A Paired Samples t-test was conducted to assess the impact of the BeBright application on workplace stress. This statistical test was used to

compare pre- and post-intervention scores, thereby evaluating the effectiveness of the intervention. By detailing these analytical methods, this section aims to offer a rigorous and transparent framework for the data analysis procedures employed in the study. This sets the stage for subsequent chapters, where the data will be further analyzed and interpreted.

Ethical Considerations

Ethical considerations were paramount throughout all stages of this research endeavor on the Behavioral Activation-based Digital Mental Health Intervention (BA-DMHI) for managing common mental disorders and stress in the workplace. Prior to commencing data collection, ethical approval was obtained from the Institutional Review Board (IRB). Participants were provided with informed consent forms detailing the purpose of the study, their rights as participants, confidentiality measures, and the voluntary nature of their participation. Moreover, anonymity and confidentiality were strictly maintained throughout data collection, analysis, and reporting. Participants were assigned pseudonyms to protect their identities, and all identifiable information was securely stored and accessible only to the researcher. Additionally, measures were taken to minimize any potential risks or discomfort to participants during data collection. Participants were assured of their right to withdraw from the study at any time without penalty.

In addition to these foundational ethical practices, specific ethical issues pertinent to digital treatment programs were rigorously addressed. Ensuring informed consent involved clear communication about the program's nature, risks, and benefits, especially critical given the digital format. The study emphasized accessibility and equity, recognizing the digital divide and designing the intervention to accommodate diverse populations, addressing barriers related to language, disability, and socio-economic status. Quality of care was scrutinized to ensure the program's efficacy and safety, adhering to professional standards.

Accountability and transparency were prioritized, with clear responsibility for program design, delivery, and oversight, and transparency regarding goals, methods, and funding sources. Ethical considerations also included the need for human interaction and empathy, the careful use of participant data, compliance with regulatory standards, and the avoidance of misleading information or digital manipulation. Cultural sensitivity was paramount, ensuring the program's relevance and adaptability to diverse contexts. These comprehensive ethical considerations aimed to ensure the responsible and effective implementation of the BeBright program, safeguarding participant well-being and enhancing treatment outcomes in the workplace.

RESULTS

Chapter III

RESULTS

Study 1: Qualitative Results of the Workplace Employees

The purpose of this qualitative study was to explore the experiences of employees in the workplace, with a particular focus on their mental health. Data were collected from 16 participants via semi-structured interviews and were subsequently analyzed using a thematic approach. The main themes that emerged from the data were 'Mental Health Issues,' with the corresponding subthemes being 'Workplace Health Issues' and 'Experience with Work-Related Health Issues.' This chapter presents the results in detail, with relevant quotes from the participants to illustrate each theme and subtheme. To provide context for these findings, the sociodemographic characteristics of the participants were examined. The sample consisted of 16 individuals, equally distributed between males (n = 9) and females (n = 7), with ages ranging from 28 to 40 years. Occupationally, the participants represented a diverse range of fields, including business owners, doctors, clerical staff, marketing professionals, media professionals, nurses, customer service representatives, and an IT professional. This diverse sample not only enriches the study's findings but also allows for a more nuanced understanding of mental health issues in various workplace settings (see Table 1).

Table 1

Sociodemographic Characteristics of the Workplace Employees

No	Pseudo name	Gender	Age	Occupation
1	Ahmad	Male	37	Business Owner
2	Hassan	Male	32	Doctor
3	Ali	Male	33	Business Owner
4	Saif	Male	40	Clerical staff
5	Akram	Male	32	Doctor
6	Yasir	Male	39	Marketing Professional
7	Farooq	Male	37	Marketing Professional
8	Zeeshan	Male	35	Clerical staff
9	Asif	Male	32	Media professional
10	Robi	Female	28	Nurse
11	Sara	Female	33	Nurse
12	Sana	Female	36	Media professional
13	Aroba	Female	36	Doctor
14	Sapna	Female	34	Customer service representative
15	Tuba	Female	33	Customer service representative
16	Sidra	Female	30	IT professional

Theme 1: Mental Health Issues

The overarching theme of mental health issues surfaced prominently in the participants' narratives. The participants spoke about various challenges they faced related to their mental health within the workplace.

Subtheme 1: Workplace Health Issues

The subtheme of 'Workplace Health Issues' involves instances where participants' physical health conditions directly or indirectly affected their mental health within the work environment. It points towards the interconnected nature of physical and mental health and the role that the workplace environment plays in managing these complexities.

Participant WPE-1 explained their experience as follows: "*I was diagnosed with cardiac MR, which hasn't had a significant impact on my work. The only issue arises when my blood pressure spikes occasionally*". This highlights the individual's effort to manage a significant health condition while maintaining their professional responsibilities.

Similarly, Participant WPE-7 stated: "*Sometime due to the burden of my work I got stressed out and literally exhausted sometimes*". This quote signifies the role of workload and work-related stress in contributing to both physical exhaustion and mental strain.

Subtheme 2: Experience with Work-Related Health Issues

The subtheme 'Experience with Work-Related Health Issues' encompasses experiences where work-related factors, including workload and working conditions, directly affected the participants' health. These experiences underscore the influence of the work environment on both physical and mental wellbeing.

Participant WPE-8 narrated their experience: "*I faced a similar issue a few while ago in a stressful environment like I had a workload, the workload was that I had no experience*

of that work and I had not much idea of that work.... So that was my stress going on and I was unable to concentrate on the work because these things were repeating in my mind". This narrative highlights how inexperience and excessive workload can create a stress-inducing environment leading to impaired work concentration.

In a similar vein, Participant WPE-9 shared: "*one year back I had a fever and that fever was around for one month, I was not given proper holidays from work and my health was affecting my work. Like that when you become exhausted and you are having mood swings. And when you are already sick it's becoming difficult to manage all those things and constantly it affects your work*". This testimony illustrates how a lack of adequate leave from work during illness can exacerbate health issues, causing mental health strain and reduced work efficiency.

In summary, the findings from this study highlight the significance of mental health issues among employees, with workplace health issues and experiences with work-related health issues being central aspects of the participants' narratives. The quotes presented provide a nuanced understanding of how workplace conditions and experiences affect both physical and mental health.

Theme 2: Assessment of Client Potential to Cope with Stress at the Workplace

The second major theme identified from the study focuses on the participants' abilities and strategies to cope with stress at the workplace. This theme is further divided into four subthemes: 'Presentation and Workplace Performance,' 'Workplace Stress Management,' 'Feedback and Decision Making,' and 'Workplace Change and Adaptation.' Each subtheme is supported by participants' quotes, giving a detailed insight into their experiences.

Subtheme 1: Presentation and Workplace Performance

The first subtheme highlights the participants' perspectives on managing their work responsibilities, particularly regarding presentations and overall performance. Participants described strategies they employ to maintain productivity and meet deadlines.

Participant WPE-12 elaborated on their approach: "*When you put more effort and work more, it gets ready before the deadline. After the assigned time, you have to work overtime then only in that case you can work and prepare before the deadline*." This quote showcases the perceived necessity of putting in extra effort and time to achieve set targets.

Similarly, Participant WPE-5 described their strategy: "*I try my best to complete my presentations and the associated data coordination as soon as possible. After that, I will focus on preparing for the presentation, such as identifying the key points that need to be highlighted.*" The focus here is on the prompt completion of tasks and strategic planning for presentations, demonstrating proactive task management.

Subtheme 2: Workplace Stress Management

The second subtheme explores various techniques the participants use to manage stress at work. Participants acknowledged that stress was part and parcel of the work environment, but they also shared strategies they utilized to cope with these stressors.

Participant WPE-13 shared their technique: "*Well, there's a technique. First of all, I slow down the moment and then make myself realize that it's okay. Hard times come and go, and things will get better. At first, I try to understand this...Then, I think about how I can improve it. Everything becomes clear in my mind about what I should do and how I can do it*." This quote emphasizes the importance of reflection and a positive mindset in managing stress.

Participant WPE-14 also discussed their approach: "*I give myself a break on the time. I try to when I am given a task, at least if I have to get a review from somebody and I want feedback on it, I want it at least a month in advance because if I have two or three days to get the review, what I was supposed to do by the manager, now it happens that they don't get reviewed in a timely manner because of their work, so I have to keep a time period of one month, for them I can only do this thing.*" Here, the participant emphasizes the need for efficient time management and early feedback to manage stress.

Subtheme 3: Feedback and Decision Making

The third subtheme relates to the participants' perspectives on decision making, feedback, and how these affect their workplace experiences. Participants spoke about the importance of evaluating outcomes and considering others' perspectives when making decisions.

Participant WPE-16 elaborated: "*Pros and cons are considered before making a decision... And not only me but how much others are benefitting. In which I see that the loss is less and the benefit is more, then I take that decision*." This quote highlights the importance of considering both personal and collective impacts in decision-making processes.

WPE-11 discussed how they handle feedback: "*In this matter, there are two things. If I work hard and give my best to the work and I get a negative reaction, then obviously I will get disappointment. And if I submit my work without any hard work and I get a negative comment, then I will take it as a learning and get it right in the future*." This participant shows a learning-oriented perspective towards negative feedback.

Subtheme 4: Workplace Change and Adaptation

The fourth subtheme focuses on the participants' attitudes and approaches towards change and adaptation in the workplace. Participants shared their strategies for managing unexpected situations and seeking guidance when needed.

Participant WPE-5 expressed: "*If the situation is directly related to me or is something I'm involved in, I would work on finding a solution as soon as possible. I would try to find solutions related to the situation and apply them... I would seek advice from a senior or a colleague, someone who could give me a second opinion on the situation. I would present the problem and my proposed solution and ask for their feedback.*" This quote highlights an active approach to problem-solving and the value of seeking second opinions.

Participant WPE-1 also shared: "*Instead of stressing and worrying about missing deadlines, one should focus on actively working and understanding the task... If there is a concerned person or someone with more professional experience, we will refer to them and ask them to guide us.*" This participant's statement underscores the value of focusing on task understanding and seeking guidance from experienced colleagues. The second theme, 'Assessment of Client Potential to Cope with Stress at the Workplace,' provides an in-depth look into the strategies participants use to manage their work responsibilities, stress, decision-making processes, and adaptability to changes at the workplace. Their experiences shed light on various coping mechanisms and highlight the importance of proactive strategies for managing workplace stress and maintaining performance.

Theme 3: Preventative Measures

The third theme highlighted from the study pertains to the preventive measures undertaken by participants to manage stress and maintain mental health in the workplace. This theme covers five sub-themes: 'Mental Health Awareness and Understanding,' 'Managerial Role in Employee Mental Wellness,' 'Impact of Mental Health on Workplace

Performance,' 'Workplace Policies and Practices for Stress Reduction,' and 'Employee Well-being and Support Networks.' Each sub-theme is elucidated by participants' statements, revealing their strategies and insights.

Subtheme 1: Mental Health Awareness and Understanding

Participants acknowledged the significance of awareness and understanding of their own mental health in managing their well-being. Strategies included taking regular breaks from work, engaging in outdoor activities, and maintaining a work-life balance.

Participant WPE-11 stated: "*It is important for mental health that after you have mentally exerted yourself, you can do any outdoor activity that diverts you from your work and your mind deviates for a while.*" The participant emphasized the benefits of such activities, highlighting that "your hormones are released when you are actively involved."

Similarly, participant WPE-12 mentioned the importance of balance: "*I try to balance everything. I do the work only on the assigned time. The rest is my private life. I try to keep a balance so that is the reason that I am fine.*"

Subtheme 2: Managerial Role in Employee Mental Wellness

A clear managerial role in supporting employee mental wellness was also identified. This included being sensitive to employee needs and establishing clear work boundaries.

Participant WPE-1 said, "*If someone is struggling with a problem, we should be sensitive to their needs and do what we can to support them.*" Another participant, WPE-5, emphasized the importance of communication and a professional environment: "*You need direct communication with your colleagues and they need it with you... Secondly, creating a professional environment is the responsibility of the managers.*"

Subtheme 3: Impact of Mental Health on Workplace Performance

The effect of mental health on job performance was another significant theme. Mental health issues were associated with difficulty in meeting deadlines, comprehension of work, and physical symptoms such as fatigue and headaches.

According to participant WPE-1, "*If a person is struggling with mental health issues, it may be difficult for them to produce quality work, particularly when actively struggling with these problems.*" Similarly, participant WPE-11 highlighted the negative impact of mental health issues on organization, management, and interaction with managers and team members.

Subtheme 4: Workplace Policies and Practices for Stress Reduction

Effective workplace policies and practices for stress reduction were emphasized by participants, including managing workload effectively, providing opportunities for breaks and relaxation, and promoting a supportive and positive work environment.

Participant WPE-7 said, "*Workplace policies and practices should focus on managing workload effectively, providing opportunities for breaks and relaxation, and promoting a supportive and positive work environment."*

Subtheme 5: Employee Support and Self-Care

Participants spoke about the importance of self-care and support from superiors and colleagues. Strategies included taking a break from work, engaging in outdoor activities, and seeking emotional support.

Participant WPE-2 shared, "*Whenever I feel a little burn out or stressed, I simply just lock up my office, shut my laptop, and go out for a walk. I prefer to have a little chitchat with friends; it really helps a lot.*"

Subtheme 6: Employee Well-being and Support Networks

The importance of support networks in maintaining employee well-being was a recurrent theme. Spending time with friends and family, engaging in relaxation exercises, and sharing problems with a trusted individual were strategies identified by participants.

Participant WPE-1 stated, "*Spending time alone can be beneficial, but it's important to balance it out by also spending time with friends and family. Too much isolation can lead to feelings of loneliness and disconnection from others*."

The findings of this study shed light on the various factors that contribute to mental well-being in the workplace, as well as the strategies employed by individuals to manage stress. These findings can inform future interventions and policies aimed at promoting mental health in the workplace (see Table 2).

Table 2

Theme 1: Mental health issues	
Subthemes	**Example Quote**
Workplace health issues	"I was diagnosed with cardiac MR, which hasn't had a significant impact on my work. The only issue arises when my blood pressure spikes occasionally". WPE-1 "Sometime due to the burden of my work I got stressed out and literally exhausted sometimes". WPE-7
Experience with Work-Related Health Issues	"I faced similar issue a few while ago in a stressful environment like I had a workload, the workload was that I had no experience of that work and I had not much idea of that work…. So that was my stress going on and I was unable to concentrate on the work because these things were repeating in my mind". WPE-8 "one year back I had a fever and that fever was around for one month, I was not given proper holidays from work and my health was affecting my work. Like that when you become exhaust and you are having mood swings. And when you are already sick it's becoming difficult to manage all those things and constantly it effects your work". WPE-9
Theme 2: Assessment of client potential to cope stress at workplace	
Presentation and Workplace Performance	"When you put more effort and work more, it gets ready before the deadline. After the assigned time, you have to work overtime then only in that case you can work and prepare before the deadline." - WPE-12 "I try my best to complete my presentations and the associated data coordination as soon as possible. After that, I will focus on preparing for the presentation, such as identifying the key points that need to be highlighted." - WPE-5
Workplace Stress Management	"Well, there's a technique. First of all, I slow down the moment and then make myself realize that it's okay. Hard times come and go, and things will get better. At first, I try to understand this. But the technique I use is first to think about the situation, then think about the worst that could happen if it doesn't go well, or think about what could happen if it goes well, which people usually call reflection. But there is also pre-reflection, which one can do if they want to. Then, I think about how I can improve it. Everything becomes clear in my mind about what I should do and how I can do it." - WPE-13 "I give myself a break on the time. I try to when I am given a task, at least if I have to get a review from somebody and I want feedback on it, I want it at least a month in advance because if I have two or three days to get the review, what I was supposed to do by the manager, now it happens that they don't get reviewed in a timely manner because of their work, so I have to keep a time period of one month, for them I can only do this thing." - WPE-14
Feedback and Decision Making	"Pros and cons are considered before making a decision. How much things on this are good and how much things on this are bad, on this how much loss can be how much benefit can be. And not only me but how much others are benefitting. In which I see that the loss is less and the benefit is more, then I take that decision. So after that I imagine myself with that decision that I have made this decision

	after that my life is like this." - WPE-16 "In this matter, there are two things. If I work hard and give my best to the work and I get a negative reaction, then obviously I will get disappointment. And if I submit my work without any hard work and I get a negative comment, then I will take it as a learning and get it right in the future." - WPE-11
Workplace Change and Adaptation	"If the situation is directly related to me or is something I'm involved in, I would work on finding a solution as soon as possible. I would try to find solutions related to the situation and apply them... I would seek advice from a senior or a colleague, someone who could give me a second opinion on the situation. I would present the problem and my proposed solution and ask for their feedback." WPE-5 "Instead of stressing and worrying about missing deadlines, one should focus on actively working and understanding the task... If there is a concerned person or someone with more professional experience, we will refer to them and ask them to guide us. We can say, 'Please go to this person and discuss the situation with them. They can help you in this situation." WPE-1
Theme 3: Preventative measures	
Mental Health Awareness and Understanding	"It is important for mental health that after you have mentally exerted yourself, you can do any outdoor activity that diverts you from your work and your mind deviates for a while. You get relaxation and your whole body is involved in it. Because hormonal changes also occur and your hormones are released when you are actively involved. And the fresh air also gives a very good effect, your mind becomes fresh and your body also becomes fresh. And you can easily continue your work." WPE-11 "I try to balance everything. I do the work only on the assigned time. The rest is my private life. I try to keep a balance so that is the reason that I am fine. I am not doing any such activity during work but whenever I get bored during work, I must take a break or try to have some music therapy like listening to some favorite music that refreshes me a bit." WPE-12
Managerial Role in Employee Mental Wellness	"If someone is struggling with a problem, we should be sensitive to their needs and do what we can to support them. Additionally, there should be clear work boundaries, such as specific working hours. If a supervisor notices that an employee is exceeding those boundaries and the employee is expressing concerns, the supervisor should try to accommodate them so that they feel comfortable." (WPE-1) "The first thing is communication. You need direct communication with your colleagues and they need it with you... Secondly, creating a professional environment is the responsibility of the managers. As long as the work environment is professional, I think managing stress and dealing with it would not be that difficult." WPE-5
Impact of Mental Health on Workplace Performance	"If a person is struggling with mental health issues, it may be difficult for them to produce quality work, particularly when actively struggling with these problems. Additionally, physical symptoms such as fatigue, dizziness, headaches, and muscle pain can be associated with stressors that can negatively affect job performance." WPE-1

	"All mental health affects your work in such a way that you can't meet your deadlines, you can't comprehend the work, you don't know what you are going to do, there is no management and no organization. Also, when you can't meet the deadline, then you can't face it that you are getting e-mails, you are getting deadline reminders, you start avoiding it, then this happens, your work is pending and then you are not able to interact with the managers or if you have a team, you start avoiding them too. This increases your number of leaves from work. Also, when you don't face things, you are thinking about the task, which puts the rest of your work on hold, so it disrupts your performance." WPE-11
Workplace Policies and Practices for Stress Reduction	"There are many situations in your workplaces, sometimes some of your policies, some compliments are such that they disturb your work because they make you mentally disturbed. So they affect your work, but if you take them in a positive way, it's like I do, when I feel bad, I take a break from my work and my busy mind for a while. I also relax a bit and go out and do different activities like walking, jogging, running etc. After that I come back, my mood is fine and everything is fine. This can also mean that your relationships don't go bad, you don't show aggression and do your work in peace." WPE-11 "When you take stress due to overload of work, you feel headaches, irritation, and show aggression due to small things. Workplace policies and practices should focus on managing workload effectively, providing opportunities for breaks and relaxation, and promoting a supportive and positive work environment. By implementing strategies that reduce stress and prioritize employee well-being, organizations can create a conducive work environment for their employees." WPE-7
Employee Support and Self-Care	"Whenever I feel a little burn out or stressed, I simply just lock up my office, shut my laptop, and go out for a walk. I prefer to have a little chitchat with friends; it really helps a lot. Apart from that, I must say to work smoothly, I require backup emotional support from my superiors and friends. I expect them to be nice to me, and a little appreciation can make a lot of positive difference." WPE-2 "I think you should take a break from work for a while to refresh yourself mentally. First of all, the work burden should be reduced. Secondly, the deadlines should be extended. The third thing is to have an outdoor visit in this situation or one can be relaxed if they have been given a leave from the office." WPE-10
Employee Well-being and Support Networks	"Spending time alone can be beneficial, but it's important to balance it out by also spending time with friends and family. Too much isolation can lead to feelings of loneliness and disconnection from others." WPE-1 "Taking breaks and engaging in relaxation exercises can help in coping with stress and understanding one's thoughts and emotions. Sharing problems with a close friend or loved one can also provide support in problem-solving." WPE-6 "It's important for managers and senior staff to have an understanding of the mental health of their employees. Having a checklist of factors that can affect mental health and providing experienced mental health support when needed can be beneficial for both employees and managers." WPE-8

Chapter-IV

DISCUSSION

Study 1 Part 1: Workplace Employees (WPE)

The exploration of employees' experiences in the workplace concerning their mental health sheds light on the intricate relationship between their professional setting and their overall well-being. The emergence of 'Mental Health Issues' as a predominant theme corroborates previous literature, which emphasized the prevalence of mental health concerns among working professionals (Pfeffer, & Williams, 2020).

The identification of 'Workplace Health Issues' underscores the interplay between physical and mental health in a work setting. Previous research has noted the symbiotic relationship between physical ailments and their subsequent impact on mental well-being (Goetzel et al., 2014). Our findings mirror this observation, particularly through the experiences of Participant WPE-1. Their narrative aligns with Loeppke et al. (2013) assertion that employees often navigate dual challenges: managing personal health conditions alongside professional duties. Moreover, the sentiment expressed by Participant WPE-7 emphasizes how workplace stress can contribute to both physical exhaustion and mental strain, reinforcing the observations by Greenberg et al. (2015) about the toll of job demands on overall health.

The subtheme, 'Experience with Work-Related Health Issues', delves into the direct implications of the work environment on health. The accounts of Participants WPE-8 and WPE-9 draw attention to two pivotal aspects. Firstly, the daunting challenge presented by unfamiliar tasks and excessive workload, as voiced by WPE-8, can precipitate stress and impact concentration. This finding is consistent with studies by Demerouti et al. (2001),

which discussed the adverse psychological effects of workload and job mismatches. Secondly, the reflection of Participant WPE-9 captures the pitfalls of inadequate recuperative breaks during illnesses. This narrative aligns with the observations of Tucker et al. (2006) and Taylor et al. (2013), who argued that the absence of proper breaks can accentuate health issues, further affecting mental health and workplace productivity.

In essence, the findings of this qualitative study contribute uniquely to the existing body of literature. While previous studies have individually looked at physical health conditions or workplace-related stresses in isolation (Schnall et al., 1994; Karasek & Theorell, 1990), this research amalgamates the two, painting a holistic picture of the myriad challenges faced by employees. This integrated perspective is instrumental in underscoring the dire need for workplace reforms that address both physical and mental health concerns comprehensively.

The second major theme of "Assessment of Client Potential to Cope with Stress at the Workplace" delves into the participants' strategies for managing stress, coping with work-related challenges, and making effective decisions. This theme provides useful insights into the adaptive behaviors utilized by individuals in order to effectively manage the intricacies of their work settings. Each of the four sub-themes offers distinct viewpoints on how individuals engage with different facets of their work, so adding to a full comprehension of coping techniques.

The participants' commitment to fulfilling obligations relating to their jobs is highlighted under the sub-theme of "Presentation and Workplace Performance". The statement made by participant WPE-12 that extra effort and overtime are required to accomplish activities ahead of schedule is consistent with the idea of "work intensification" and the propensity for employees to work longer hours to handle demands (Schiemann et al.,

2013). Similar proactive time management techniques are shown by participant WPE-5's emphasis on strategic planning for presentations and this is important for the task completion (Parker & DeCotiis, 1983).

The second sub-theme, "Workplace Stress Management," emphasizes the value of self-control and adaptable coping mechanisms in reducing workplace stress. The method used by participant WPE-13, which involved slowing down and cultivating a positive outlook, supports the idea of "cognitive reappraisal," in which people reframe stressors in a more beneficial way (Gross & John, 2003). The focus on effective time management and proactive feedback-seeking by participant WPE-14 is in line with studies on the role of time management abilities in lowering stress (Britton & Tesser, 1991).

The third sub-theme, "Feedback and Decision Making," illuminates participants' viewpoints on feedback and decision-making techniques. The "prospective hindsight" method, in which people examine potential outcomes before making decisions (Klein, 1998), may be seen in participant WPE-16's assessment of pros and cons as well as the overall influence of choices. The growth-oriented mindset that is necessary for both personal and professional development is highlighted by WPE-11's adaptive response to feedback, which views it as a learning opportunity (Dweck, 2006).

In light of workplace changes, the fourth sub-theme, "Workplace Change and Adaptation," emphasizes the value of being adaptable and seeking advice. The active problem-solving and collaborative style of participant WPE-5 is consistent with the research on adaptability, which emphasizes the need of flexibility and soliciting outside perspectives (Pulakos et al., 2006). Participant WPE-1's comment of seeking guidance from more experienced coworkers emphasizes the value of information exchange and mentorship in managing change (Van Woerkom & Meyers, 2015).

This theme offers a thorough examination of participants' coping strategies and workplace resilience. By examining how people cope with presentations, stress, feedback, and adjustments, the study contributes to our understanding of the complexity of coping and adaptability in professional settings. Organizational activities that aim to enhance employees' coping mechanisms, decision-making skills, and flexibility can be guided by the learnt insights.

The findings of this qualitative study shed significant light on a number of significant problems relating to workplace mental health. The "Preventative Measures" subject is broken down into a number of sub-themes that demonstrate how people handle stress and improve their mental health. These observations are consistent with the body of knowledge already available on the subject, emphasizing the value of proactive methods for preserving staff members' mental health and raising productivity levels generally.

The "Mental Health Awareness and Understanding" sub-theme emphasizes the critical role that self-awareness plays in managing mental well-being. Participants understand the value of identifying their own mental states and taking proactive measures to address them. This is consistent with the findings of Lomas et al. (2017), who highlight the beneficial effects of self-awareness on outcomes related to mental health. The measures mentioned, such taking breaks and doing outside activities, are consistent with the literature on the advantages of mindfulness and exercise for lowering stress (Brown & Ryan, 2003; Kuo & Taylor, 2004).

The remarks of participant WPE-11 regarding hormone release during engaging activities reflect the impact of physical engagement on the release of endorphins, which can contribute to improved mood and reduced stress (Zschucke et al., 2015). Similarly, participant WPE-12's emphasis on work-life balance echoes findings from Greenhaus and

Powell (2006), highlighting its importance in reducing stress and enhancing overall well-being.

The second sub-theme, "Managerial Role in Employee Mental Wellness," resonates with previous research on the significance of supportive management practices in fostering employee well-being. The statements of participant WPE-1 regarding sensitivity to employee needs align with studies emphasizing the importance of empathetic leadership styles (Dutton et al., 2006). Moreover, participant WPE-5's emphasis on communication and professionalism underscores the positive impact of transparent and respectful workplace interactions (Eisenberger et al., 2002).

The third sub-theme, "Impact of Mental Health on Workplace Performance," corroborates existing literature on the intricate relationship between mental health and job performance. Participant WPE-1's observation that mental health struggles can hinder quality work echoes findings from Dewa et al. (2017), which highlight the negative impact of mental health issues on productivity. Participant WPE-11's highlighting of the broader organizational effects of mental health issues supports the concept of a ripple effect, where employee well-being influences team dynamics and organizational culture (Bakker & Demerouti, 2017).

This qualitative study offers a unique contribution by providing in-depth insights into the strategies adopted by employees to prevent and manage workplace stress, as well as the role of managerial practices in supporting mental well-being. While existing research often emphasizes one or the other aspect, this study combines employee perspectives with managerial insights to present a comprehensive view. The thorough information gathered from mental health specialists lends the conclusions more legitimacy and makes them more applicable to actual job circumstances.

The results of this study demonstrate the value of taking proactive steps to manage mental health in the workplace. The tactics used by the participants are consistent with the body of knowledge on self-awareness, supportive management, and the relationship between mental health and job performance. The study makes a unique contribution because to its thorough approach, which combines managerial and employee perspectives to provide valuable guidance to businesses aiming to enhance the mental health of their workforces.

The fourth sub-theme, "Workplace Policies and Practices for Stress Reduction," focuses on the importance of organizational support in fostering an environment that is favorable to employee wellbeing. The interpretation of the participant's comment by WPE-7 stresses the importance of a multifaceted strategy that includes task management, breaks, leisure activities, and a pleasant setting. This is consistent with research (Robertson & Cooper, 2011) that demonstrates the advantages of well-considered workplace regulations and practices.

According to Sonnentag and Fritz (2015), the impact of workload on employee stress levels highlights the significance of effective workload management. The requirement for opportunities to take breaks and unwind is consistent with studies that highlight the benefits of micro-breaks and recovery periods during the workday (Trougakos et al., 2015). Leiter and Maslach's (2004) research, which stresses how organizational climate affects employee well-being, provides more support for a friendly and positive work environment.

"Employee Support and Self-Care," the fifth sub-theme, places a strong emphasis on the importance of utilizing both private and public resources to manage work-related stress. The suggested techniques, which include taking breaks, going outside, and receiving emotional support, are in line with the concept of self-care as a preventative stress management strategy (Kinman & Grant, 2011).

Going for a walk and socializing with others were the burnout management strategies employed by participant WPE-2. These strategies are consistent with studies showing the benefits of social support and exposure to nature for stress reduction (Hartig et al., 2014; Ozbay et al., 2007). The "transactional model of stress and coping" (Lazarus & Folkman, 1984), which emphasizes the significance of coping mechanisms in stressor management, is congruent with this tactic.

The sixth sub-theme, "Employee Well-being and Support Networks," emphasizes the value of interpersonal relationships in preserving mental health. The comment made by participant WPE-1 about striking a balance between isolation and social interaction is similar to the idea of "social integration" as a buffer against stress and mental health problems (Umberson & Montez, 2010).

Spending time with friends and family, practicing relaxation techniques, and looking for trustworthy people to share problems with are all coping mechanisms that are in line with research on the protective effects of social support networks against the damaging effects of stress (Cohen & Wills, 1985; House, 1981). These results highlight the multifaceted character of employee well-being and highlight the need for a comprehensive strategy for efficient stress management.

The findings from these sub-themes underscore the intricate interplay of individual strategies, organizational policies, and social support networks in promoting mental well-being in the workplace. The comprehensive view presented by the study aligns with the call for integrated interventions that address various dimensions of employee mental health (Biron & Karanika-Murray, 2013). By recognizing the distinct but interconnected roles of self-care, organizational policies, and support networks, this study contributes to the development of targeted interventions and policies to enhance employee well-being.

Chapter III

RESULTS

Study 1 Part 2: Qualitative Results of the Data of Mental Health Professional

The purpose of this study was to explore the perspectives of mental health professionals on the recognition and understanding of common mental disorders, with a particular focus on depression, anxiety, and stress. Data was collected through semi-structured interviews with 16 mental health professionals, including psychologists, psychiatrists, and mental health nurses. The data was then analyzed using thematic analysis, a method that allows for the identification, analysis, and reporting of patterns within the data. This chapter presents the results of this analysis, organized by the main themes, subthemes, and codes identified in the data.

Theme 1: Recognition of Common Mental Disorders

The first theme that emerged from the data was the recognition of common mental disorders among employees, such as depression, anxiety and stress. This theme consisted of three subthemes: presence of depression and stress among employees, sleep problems due to digitalization, and increase in patients with depression and anxiety after COVID-19.

Subtheme 1.1: Common Mental Health Issues at the Workplace

Code 1: Presence of Depression and Stress among Employees

The first code that emerged from the interviews was the prevalence of depression and stress in the workplace, which all the participants noted was a common phenomenon. The mental health professionals reported observing a high prevalence of stress and depression among working people, often related to workload. Psychologist 1 (Female) stated, "*Stress is most*

common in working people due to burden of work, depression is also very common in people".

Code 2: Sleep Problems Due to Digitalization

The second code revolves around the issue of sleep problems due to digitalization, which many participants perceived as a significant factor contributing to employees' mental health issues. Psychologist 1 (Female) noted, "*they face sleep problems due to digitalization as it makes them sleep late at night*".

Code 3: Increase in Patients with Depression and Anxiety after COVID-19

The mental health professionals reported an increase in patients with depression and anxiety following the COVID-19 pandemic. They attributed this increase to the uncertainty and stress caused by the pandemic. Psychiatrist 2 (Male) stated, "*The number of people coming after covid is increasing especially those suffering from depression and anxiety, people are getting restless due to uncertainty and financial problems after covid*".

Subtheme 1.2: Mental Health Disorders, Prevalence, Symptoms, Drivers, Impact, and Treatment

Code 1: Reports of common, severe, and Neurodevelopmental Disorders

The mental health professionals reported a range of common, severe, and neurodevelopmental disorders. Psychologist 5 (Female) stated:

> *Common mental health issues such as anxiety and depression are very prevalent. In a lot of people, bipolar disorder, post-traumatic stress disorder, schizophrenia, and eating disorders are also common. Additionally, we often see disruptive behavior disorders and neurodevelopmental disorders in many people, which are very common.*

Similarly, other professional reinforced this information and reported: "*I have been working as a clinical psychologist for the past three years and I have seen patients with anxiety disorders, as well as stress, sleep, and eating problems*" *(Psychologist 1, Female).*

Code 2: Impact of Social Media on Mental Health

The professionals also discussed the impact of social media on mental health. One of the Psychologists stated: "*due to social media use people compare their lives with others which leads them to depression*" *(Psychologist 1, Female).*

Code 3: Drivers for Mental Illness

The mental health professionals discussed various drivers for mental illness. Mental Health Nurse 1 (Female) stated:

> *"In terms of mental illnesses, we have a lot of anxiety issues, especially in males. Second, there are a lot of relationship issues, and there is no awareness of stress management. If people experience even basic stress, they consider it depression and do not know how to manage it".*

Another mantel health professional agreed with the various drivers for mental health illness:

> *In my opinion, anxiety is an issue of stress management. External stressors, such as the environment we live in, can be a major cause of anxiety. If we don't have the skills to manage stress, we end up being overburdened and unable to channel our negative energies, which can lead to anxiety and panic attacks. For example, one of my clients had a job where the greed to earn more money was high, which caused him to make decisions quickly without thinking about the consequences. When the consequences came, he couldn't handle them, and he became an anxiety patient (Psychologist 4, Male).*

Code 4: Lack of Awareness relating to Stress and Time Management

The professionals also noted a lack of awareness relating to stress and time management. Mental Health Nurse 1 (Female) stated, "*Time management is also a bigger issue for them, but if I had to broadly state it, anxiety is a big issue for a lot of people, along with relationship issues*".

Code 5: Major symptoms of Depression, Anxiety and Stress

The mental health professionals discussed the major symptoms of depression, anxiety, and stress. On depression, Psychologist 5 (Female) stated:

> *Depression is a severe condition that is characterized by a depressed mood. People with depression often experience feelings of sadness, hopelessness, and exhibit angry or irritated behavior. Even small things can trigger anger and frustration. There may be a loss of interest in activities, sleep disturbance, such as insomnia or sleeping too much, changes in appetite, and social isolation. People with depression may also experience physical symptoms such as pain, particularly in the back, and may have suicidal thoughts or make suicidal attempts. Headaches are also a common symptom of depression.*

For anxiety, a mental health nurse mentioned:

> *In anxiety, people experience panic attacks, which is a sudden fear that something bad will happen without any apparent reason. This fear leads to palpitations, sweating, hot flashes, trembling, short breaths, and other symptoms that vary from person to person (Mental Health Nurse 1, Female).*

Discussing stress, another psychologist shared:

A person suffering from stress gets angry for no reason, feels irritable, hungry, has trouble sleeping, has body aches, feels tired, feels unable to do anything. He starts to avoid people, he starts to forget things, because of which he can feel physical and mental problems (Psychologist 2, Female).

Code 6: Causes of Depression, Anxiety and Stress

Mental health professionals shed light on the multifaceted causes of common mental disorders such as depression. Psychologist 5 (Female) noted:

It is true that depression can have various causes, and one's thought patterns and cognition can play a role in its development. Often, people with depression have negative thought patterns that can perpetuate feelings of hopelessness and worthlessness. Social pressure and family pressure can also contribute to depression, particularly in cultures where there is a strong emphasis on conformity and fulfilling societal expectations.

Code 7: Impact of Depression, Anxiety and Stress on one's life

The mental health professionals emphasized the severe impact of these disorders on individuals' lives. Depression was identified as a potentially life-threatening condition, disrupting individuals' daily lives and fostering a pervasive sense of hopelessness. Reflecting on depression, one psychiatrist revealed:

The worst effect of depression is suicidal thoughts, it also affects his daily activities, for example if he is studying but fails to get good marks, he lacks motivation. He doesn't want to try because he lacks motivation, he doesn't even take interest in communicating with family, he feels his life has no goal/purpose (Psychiatrist 2, Male).

Anxiety was recognized as a substantial barrier to daily functioning and performance, turning ordinary social interactions and academic tests into formidable challenges. Discussing the impact of anxiety, a psychologist remarked:

> *Anxiety affects one's daily functioning, anxiety affects one's performance, if a person has social anxiety then he cannot speak in public and if an anxious person prepare well for a test but due to anxiety of test he will not perform well at the test (Psychologist 1, Female).*

Chronic stress was associated with significant physical and mental health detriments, including chronic illnesses, immune system dysfunction, and overall burnout. On the effects of stress, a psychologist noted:

> *"Prolonged or chronic stress can have significant consequences on a person's physical and mental health. It can increase the risk of developing chronic illnesses, weaken the immune system, and lead to burnout and exhaustion. It can also affect a person's relationships, work performance, and overall quality of life" (Psychologist 4, Female).*

Subtheme 1.3: Indigenous Understanding of Common Mental Disorders

Code 1: Cultural terms used for Common Mental Disorders

The first code highlights the variety of local terminologies used to describe various mental health disorders. The unique cultural vocabulary used to identify and express mental disorders suggests a deep-rooted cultural context in which these disorders are understood and dealt with. Regarding the cultural terms for depression one of the Psychiatrists explained:

> *“People call it 'Pareseshan rehna' (‘tension’ ‘perplexed’) but it is actually depressive disorder.” Further, Psychologist 4 (Male) mentioned, “People use a term 'Afsurdagi',*

'Pachtawa', 'afsos', and people even say that I am worried or concerned or not happy with my life, future, marriage or they say and complain why others to decide my life and my rules" (Psychiatrist 1, Male).

According to Psychiatrist 2 (Male), "*In our culture, for psychotic illnesses, we have so many terms as most of the time the people saying that the patient has 'Jinn', or they became 'Mental' and this is the big myth in our society for mental health illnesses.*"

Code 2: Religious Practices

The second code under the indigenous understanding of mental health disorders is the influence of religious practices on the understanding and management of mental health issues. The data revealed a significant role of religious beliefs and practices in shaping perceptions about mental health issues and their treatment. The mental health professionals also discussed the role of religious beliefs in understanding mental health disorders. Psychologist 5 (Female) noted:

Religious or cultural beliefs can also play a significant role. For example, if we belong to a village, many people there do not consider mental health issues as an actual mental health problem. Instead, they believe that these issues are related to some sort of spiritual problem, and seek help from religious healers or faith-based practices like taweez or jadu tona. There is generally a lack of awareness about psychology and mental health issues in such communities.

As noted by Mental Health Nurse 1 (Female):

"I have talked to people who often see mental illness from a religious perspective. For example, those who do not pray or abuse drugs view their mental illness through the lens of religion. They think they are distant from God, and that's why they have these issues, or they do drugs, and that makes them feel guilty. They often do not

acknowledge mental illness apart from religion, and they attribute their guilt or lack of peace to their distance from religion."

The cultural and religious context provided by these mental health professionals provides valuable insights into the unique ways in which mental health disorders are understood and dealt with in different communities. It underlines the importance of considering cultural and religious aspects when designing mental health interventions and promoting mental health literacy.

Subtheme 1.4: Types of Treatments Used for Mental Illnesses

The professionals also shared their insights on the various types of treatments being utilized for mental illnesses. Three significant codes surfaced: mental health awareness and education, biopsychosocial treatment model, psychotherapies and medications, and talk therapy, self-help, and support.

Code 1: Mental Health Awareness and Education

The professionals expressed the essential role of mental health awareness and education in treating mental disorders, noting that many patients lack basic knowledge about their conditions. As Psychologist 1 (Female) stated:

"I don't think people are getting any most common treatment because people are not aware, they are not psycho-educated about their psychological problems like one of my clients was not aware of anxiety, I told her that anxiety is common to everyone and is necessary for survival but will be harmful when exceeded."

Code 2: Biopsychosocial Treatment Model, Psychotherapies, and Medications

The mental health professionals reported that the treatment for mental health issues usually involves a combination of medications, therapy techniques, and self-help strategies. Psychologist 5 (Female) explained:

> *"Treatment for mental health issues usually involves medications and a variety of therapy techniques. In addition to these, scholars may also conduct lectures, group sessions, or provide peer support. Self-help strategies are also available, and hospitalization may be necessary in some cases. In Pakistan, there is generally more awareness about medications and counselling for mental health issues compared to other types of treatments".*

Regarding psychotherapy and medications, a Psychologist stated: *"Medication is the most common treatment being used, and the people I see tend to prefer that. Some people also go for therapies as a therapeutic way alongside medication. There are psychoeducation and other related therapies used in this field as well."* (Psychologist 4, Female).

Code 3: Talk Therapy, Self-Help, and Support

The last code under the treatments for mental illnesses includes talk therapy, self-help strategies, and social support. As per the discussion with Psychologist 5 (Female), she explained the use of various methods including, *"lectures, group sessions, or provide peer support. Self-help strategies are also available."*

In conclusion, the results of this study provide valuable insights into the recognition and understanding of common mental disorders from the perspective of mental health professionals. The identified themes and subthemes highlight the complexity of these disorders, the impact of cultural and societal factors, and the importance of awareness and education in their treatment. These findings have important implications for the development of effective strategies to promote mental health and well-being (see Table 3).

Table 3

Theme: Recognition of Common Mental Disorders (Depression, Anxiety, Stress)		
Subthemes	**Codes**	**Statements/ Narratives**
Common mental health issues at work place	1. Presence of depression and stress among employees 2. Sleep Problems Due to Digitalization 3. Increase in Patients with Depression and Anxiety after COVID-19	"Stress is most common in working people due to burden of work, depression is also very common in people they face sleep problems due to digitalization. Stress is highest among working people due to work load; depression is also very common among people they face sleep problems due to digitalization as it makes them sleep late at night" (Psychologist 1, Female) **"**The number of people coming after covid is increasing especially those suffering from depression and anxiety, people are getting restless due to uncertainty and financial problems after covid" (Psychiatrist 2, Male) Mostly we notice depression, anxiety and stress in them at workplace (Psychologist 2, Female)
Mental Health Disorders, Prevalence, symptoms, Drivers, Impact, and Treatment	1. Reports of common, severe, and neurodevelopmental disorders. 2. Impact of social media on mental health, including comparing one's life to others and leading to depression. 3. Drivers for mental illness 4. Lack of awareness relating to stress and time management. 5. Major symptoms of depression, anxiety and stress 6. Causes of depression, anxiety and stress 7. Impact of depression, anxiety and stress on one's life	"I have been working as a clinical psychologist for the past three years and I have seen patients with anxiety disorders, as well as stress, sleep and eating problems, due to social media use people compare their lives with others which leads them to depression, so stress, anxiety and depression are more common mental illnesses" (Psychologist 1, Female) "The most common is depression, the second is drug abuse and now days a huge number of OCD is common" (Psychiatrist 3, Male) "Common mental health issues such as anxiety and depression are very prevalent. In a lot of people, bipolar disorder, post-traumatic stress disorder, schizophrenia, and eating disorders are also common. Additionally, we often see disruptive behavior disorders and neurodevelopmental disorders in many people, which are very common" (Psychologist 5, Female). "In terms of mental illnesses, we have a lot of anxiety issues, especially in males. Second, there are a lot of relationship issues, and there is no awareness of stress management. If people experience even basic stress, they consider it depression and do not know how to manage it. Time management is also a bigger issue for them, but if I had to broadly state it, anxiety is a big issue

Theme: Recognition of Common Mental Disorders (Depression, Anxiety, Stress)		
Subthemes	**Codes**	**Statements/ Narratives**
		for a lot of people, along with relationship issues" (Mental Health Nurse 1, Female). "Depression is a severe condition that is characterized by a depressed mood. People with depression often experience feelings of sadness, hopelessness, and exhibit angry or irritated behavior. Even small things can trigger anger and frustration. There may be a loss of interest in activities, sleep disturbance, such as insomnia or sleeping too much, changes in appetite, and social isolation. People with depression may also experience physical symptoms such as pain, particularly in the back, and may have suicidal thoughts or make suicidal attempts. Headaches are also a common symptom of depression" (Psychologist 5, Female). "It is true that depression can have various causes, and one's thought patterns and cognition can play a role in its development. Often, people with depression have negative thought patterns that can perpetuate feelings of hopelessness and worthlessness. Social pressure and family pressure can also contribute to depression, particularly in cultures where there is a strong emphasis on conformity and fulfilling societal expectations. While the causes of depression may vary between different countries and cultures, it is important to recognize the impact that societal and cultural factors can have on mental health" (Psychologist 5, Female). "The worst effect of depression is suicidal thoughts, it also affects his daily activities, for example if he is studying but fails to get good marks, he lacks motivation. He doesn't want to try because he lacks motivation, he doesn't even take interest in communicating with family, he feels his life has no goal/purpose" (Psychiatrist 2, Male) "In anxiety, people experience panic attacks, which is a sudden fear that something bad will happen without any apparent reason. This fear leads to palpitations, sweating, hot flashes, trembling, short breaths, and other symptoms that vary from person to person. We have a broad checklist of symptoms, including racing thoughts, fear of death, and feeling like one cannot breathe. In Pashto, people

Theme: Recognition of Common Mental Disorders (Depression, Anxiety, Stress)		
Subthemes	**Codes**	**Statements/ Narratives**
		say "chapa razi na" which means "I can't catch my breath." During an anxiety attack, people feel like they are going to die, and they fear another attack, which makes it difficult for them to live a normal life" (Mental Health Nurse 1, Female).
		"In my opinion, anxiety is an issue of stress management. External stressors, such as the environment we live in, can be a major cause of anxiety. If we don't have the skills to manage stress, we end up being overburdened and unable to channel our negative energies, which can lead to anxiety and panic attacks. For example, one of my clients had a job where the greed to earn more money was high, which caused him to make decisions quickly without thinking about the consequences. When the consequences came, he couldn't handle them, and he became an anxiety patient" (Psychologist 4, Male)
		"Anxiety affects one's daily functioning, anxiety affects one's performance, if a person has social anxiety then he cannot speak in public and if an anxious person prepare well for a test but due to anxiety of test he will not performed well at the test, some patients complain that they feel abdominal pain or have started vomiting, experience diarrhea and symptoms of panic attacks, they feel all these experience says due to anxiety and they feel that they can't control their anxiety" (Psychologist 1, Female)
		MHP-4: "A person suffering from stress gets angry for no reason, feels irritable, hungry, has trouble sleeping, has body aches, feels tired, feels unable to do anything. He starts to avoid people, he starts to forget things, because of which he can feel physical and mental problems" (Psychologist 2, Female)
		"Reasons are that everyone's coping style is different, some people don't have effective coping style and they are not good at emotional regulation, so stress has a negative impact on one's life" (Psychologist 1, Female)
		"Prolonged or chronic stress can have significant consequences on a person's physical and mental health. It can increase the risk of developing chronic illnesses, weaken the immune system, and

Theme: Recognition of Common Mental Disorders (Depression, Anxiety, Stress)		
Subthemes	**Codes**	**Statements/ Narratives**
		lead to burnout and exhaustion. It can also affect a person's relationships, work performance, and overall quality of life. It's important to find healthy ways to manage stress to prevent these negative consequences. If you have too much stress about something, you won't be able to perform well in that area, regardless of what it is" (Psychologist 4, Female)
Indigenous understanding of Common mental disorders	1. Cultural terms used for common mental disorders 2. Religious practices	Cultural terms: "people call it "Pareseshan rehna" ('tension' 'perplexed') but it is actually depressive disorder" (Psychiatrist 1, Male) "in our Culture for psychotic illnesses, we have so many terms in our culture as most of the time the peoples saying that the patient has "Jinn", or they became "Mental" and this is the big myth in our society for mental health illnesses" (Psychiatrist 2, Male) "people use a term Afsurdagi, Pachtawa, afsos, and people even say that I am worried or concerned or not happy with my life, future, marriage or they say and complaint why others to decide my life and my rules" (Psychologist 4, Male) Religious terms: "Religious or cultural beliefs can also play a significant role. For example, if we belong to a village, many people there do not consider mental health issues as an actual mental health problem. Instead, they believe that these issues are related to some sort of spiritual problem, and seek help from religious healers or faith-based practices like taweez or jadu tona. There is generally a lack of awareness about psychology and mental health issues in such communities" (Psychologist 5, Female). "I have talked to people who often see mental illness from a religious perspective. For example, those who do not pray or abuse drugs view their mental illness through the lens of religion. They think they are distant from God, and that's why they have these issues, or they do drugs, and that makes them feel guilty. They often do not acknowledge mental illness apart from religion,

Theme: Recognition of Common Mental Disorders (Depression, Anxiety, Stress)		
Subthemes	**Codes**	**Statements/ Narratives**
		and they attribute their guilt or lack of peace to their distance from religion" (Mental Health Nurse 1, Female).
types of treatments are being used for mental illnesses	1. Mental health awareness and education 2. Biopsychosocial treatment model 3. Psychotherapies and medications 4. Talk therapy, self-help, and support	"I don't think people are getting any most common treatment because people are not aware, they are not psycho-educated about their psychological problems like one of my clients was not aware of anxiety, I told her that anxiety is common to everyone and is necessary for survival but will be harmful when exceeded" (Psychologist 1, Female). "Treatment for mental health issues usually involves medications and a variety of therapy techniques. In addition to these, scholars may also conduct lectures, group sessions, or provide peer support. Self-help strategies are also available, and hospitalization may be necessary in some cases. In Pakistan, there is generally more awareness about medications and counselling for mental health issues compared to other types of treatments" (Psychologist 5, Female). "Medication is the most common treatment being used, and the people I see tend to prefer that. Some people also go for therapies as a therapeutic way alongside medication. There are psychoeducation and other related therapies used in this field as well" (Psychologist 4, Female).

Theme 2: Treatment and Support for Common Mental Disorders in the workplace

The second overarching theme drawn from the data is the importance of addressing and treating mental health issues within the workplace. This theme consists of five subthemes and their codes, each illustrating a distinct yet interrelated aspect of workplace mental health support and intervention.

Subtheme 2.1: The Importance of Addressing and Treating Mental Health Issues in the Workplace

Code 1: Importance of Mental Health Treatment

This code reflects the participants' unanimous agreement on the crucial role of mental health treatment in the workplace. The mental health professionals emphasized the importance of addressing mental health issues in the workplace. Psychologist 1 (Female) stated, *"It is very important because a good workplace environment is not only good for their mental health but also good for productive work"*. Similarly, Psychologist 6, a male participant, stated: "The importance of this matter is very high because currently, if we look at it, 35 percent of the Pakistani population is suffering from psychological illnesses. Therefore, it is essential to address this issue on a priority basis."

Code 2: Timely Intervention and Support

This code pertains to the need for early identification and intervention in treating mental health disorders. The professionals highlighted the need for timely intervention and support. Psychologist 6 (Male) pointed out:

> *The importance of this matter is very high because currently, if we look at it, 35 percent of the Pakistani population is suffering from psychological illnesses. We can say that our culture is such that everyone is dependent on the people who work here,*

so if a person who is supporting everyone becomes ill, then everyone who depends on them will be affected. Therefore, it is essential to address this issue on a priority basis.

Further, the of the Psychiatrists also stated: "*If you leave this illness without treatment then they will harm the patient and the family so it will be very necessary to treat these and that's why we are here to treat these patients."(Psychiatrist 1, Male).*

Code 3: Awareness and Coping Strategies

This code covers the importance of increasing awareness about mental health issues and teaching coping strategies. As Psychiatrist 3, a male participant, noted: *"You have to [conduct] regular counseling sessions, secondly, we should dispel the myth that if someone is psychotic then they are not able to work, there should be some job security for them."*

Code 4: Addressing Physical and Mental Health

The interrelation of physical and mental health is underlined in this code. The professionals also emphasized the need to address both physical and mental health. Psychologist 4 (Female) noted: *"It is crucial to treat these disorders on a mild level... Anxiety, for example, can cause different gastric and stomach issues, among other things. If you don't treat anxiety on time, all these issues will also affect your physical health, not just your mental health."*

Code 5: Safe, Supportive Workplace Environment

The professionals also highlighted the importance of creating a safe and supportive workplace environment. Mental Health Nurse 2 (Female) stated:

"It is very important to treat common mental disorders that occur in our workplace. If these disorders are left untreated, they can have a negative impact on our work and

personal life. We should provide resources and support for those who are suffering from these disorders so that they can seek help and recover. It is important to create a safe and supportive workplace environment where people can talk openly about their mental health."

Subtheme 2.2: Ways to Help Workers with Common Mental Diseases

The second subtheme culled from the data focuses on potential interventions and supports that can assist employees struggling with common mental disorders. This theme contains seven subthemes, each delineating various suggested measures and strategies.

Code 1: Providing Anonymous Digital Support

The mental health professionals suggested providing anonymous digital support for employees. Psychologist 1 (Female) suggested:

> *"you can provide a digital platform for your employees, just like Oladoc, a website that allows you to reach out to doctors. This way, there can be a mental health professional available anonymously, and your company's employees can have access to digital mental health services. This would be a great benefit for them."*

Code 2: Encouraging Workplace Counseling

The professionals also suggested encouraging workplace counseling. Psychologist 3 (Female) stated, *"first we must listen to him, we must categories his problems and treatment plan. He should start sessions and we must closely monitor his follow ups. We must empower him by saying that your problem has a solution".*

Code 3: Mental health awareness sessions

The professionals also suggested conducting mental health awareness sessions. Psychologist 6 (Male) noted:

Firstly, many people are not aware of mental illnesses, so creating awareness is essential. Secondly, there is a lack of political will to address this issue, so creating awareness at the political level is also necessary. Thirdly, the infrastructure currently in place is not supportive enough, so changes need to be made. For instance, there are only 650 psychiatrists for the entire country, and there is no registered counselling available for psychologists. Therefore, we need to work on building a main body to tackle this issue and then work on the foundational level to address this issue as soon as possible with preventive measures.

Code 4: Identifying Stressors and Coping Strategies

The professionals also discussed the importance of identifying stressors and developing coping strategies. Psychologist 2 (Female) stated:

> *"In the workplace, people face such problems due to less effective relationships with their co-workers, so we can provide them with strategies to solve relationship problems, professional help should be sought, we should provide them with a friendly environment and teach them strategies to reduce stress, it will be helpful for."*

Code 5: Effective Communication and Listening

The professionals also emphasized the importance of effective communication and listening. Mental Health Nurse 2 (Female) noted, *"First of all, they should utilize their social support and then consultation with consultant is very important regarding their health situation and it is of utmost importance that they should stay connected with their family".*

Code 6: Seeking Professional help and Support for Mental Health

The professionals also discussed the importance of seeking professional help and support for mental health. Psychologist 1 (Female) stated:

"I am a professional so my advice is that they should seek professional help, they can join online mental health pages for psycho education, they can use self help books, there are many online apps like anxiety to general is an app which I use, it's a robot app in which robot guides me about using various techniques for depression and stress."

Code 7: Combine Counselling, Medication

The professionals also suggested combining counselling and medication for treatment. Psychologist 4 (Female) stated, *"timely treatment is necessary, which includes taking sessions consistently, and through medication and counselling, both treatments should be considered".*

In conclusion, the results of this study provide valuable insights into the treatment and support for common mental disorders in the workplace from the perspective of mental health professionals. The identified themes and subthemes highlight the importance of addressing mental health issues, the need for timely intervention and support, the role of awareness and coping strategies, and the importance of creating a safe and supportive workplace environment. These findings have important implications for the development of effective strategies to promote mental health and well-being in the workplace (see Table 4).

Table 4

Theme: Treatment and Support for Common Mental Disorders in the workplace		
Subthemes	**Codes**	**Statements**
The Importance of Addressing and Treating Mental Health Issues in the Workplace	1. Importance of mental health treatment 2. Timely intervention and support 3. Awareness and coping strategies 4. Addressing physical and mental health 5. Safe, supportive workplace environment	"It is very important because a good workplace environment is not only good for their mental health but also good for productive work" (Psychologist 1, Female). "The importance of this matter is very high because currently, if we look at it, 35 percent of the Pakistani population is suffering from psychological illnesses. We can say that our culture is such that everyone is dependent on the people who work here, so if a person who is supporting everyone becomes ill, then everyone who depends on them will be affected. Therefore, it is essential to address this issue on a priority basis" (Psychologist 6, Male). "if you leave this illness without treatment then they will harm the patient and the family so it will be very necessary to treat these and that's why we are here to treat these patients" (Psychiatrist 1, Male). "It is crucial to treat these disorders on a mild level. I have seen many cases where a small phobia can become a significant issue if not treated timely. Anxiety, for example, can cause different gastric and stomach issues, among other things. If you don't treat anxiety on time, all these issues will also affect your physical health, not just your mental health" (Psychologist 4, Female). "It is very important to treat common mental disorders that occur in our workplace. If these disorders are left untreated, they can have a negative impact on our work and personal life. We should provide resources and support for those who are suffering from these disorders so that they can seek help and recover. It is important to create a safe and supportive workplace environment where people can talk openly about their mental health" (Mental Health Nurse 2, Female). "you have to regular counseling sessions, secondly, we should dispel the myth that if someone is psychotic then they are not able to work, there should be some job security for them like if someone is autistic Problems are faced and they tell. Then someone is treated like an alien, this thing should be discouraged and there should be counseling sessions, annual examination of every employee with a safe

Theme: Treatment and Support for Common Mental Disorders in the workplace		
Subthemes	**Codes**	**Statements**
		working environment" (Psychiatrist 3, Male)
Ways to help workers with common mental diseases	1. Providing anonymous digital support 2. Encouraging workplace counseling 3. Mental health awareness sessions 4. Identifying stressors and coping strategies 5. Effective communication and listening 6. Seeking professional help and support for mental health 7. Combine counseling, medication	"you can provide a digital platform for your employees, just like Oladoc, a website that allows you to reach out to doctors. This way, there can be a mental health professional available anonymously, and your company's employees can have access to digital mental health services. This would be a great benefit for them" (Psychologist 1, Female). "first we must listen to him, we must categorise his problems and treatment plan. He should start sessions and we must closely monitor his follow ups. We must empower him by telling that your problem has a solution" (Psychologist 3, Female) "you have to regular counseling sessions, secondly, we should dispel the myth that if someone is psychotic then they are not able to work, there should be some job security for them like if someone is autistic Problems are faced and they tell. Then someone is treated like an alien, this thing should be discouraged and there should be counseling sessions, annual examination of every employee with a safe working environment" (Psychiatrist 3, Male). "Firstly, many people are not aware of mental illnesses, so creating awareness is essential. Secondly, there is a lack of political will to address this issue, so creating awareness at the political level is also necessary. Thirdly, the infrastructure currently in place is not supportive enough, so changes need to be made. For instance, there are only 650 psychiatrists for the entire country, and there is no registered counseling available for psychologists. Therefore, we need to work on building a main body to tackle this issue and then work on the foundational level to address this issue as soon as possible with preventive measures" (Psychologist 6, Male). "In the workplace, people face such problems due to less effective relationships with their co-workers, so we can provide them with strategies to solve relationship problems, professional help should be sought, we should provide them with a friendly environment and teach them strategies to reduce stress, it will be helpful for" (Psychologist 2, Female) "We can provide support to them by sitting with them in peace, if we see that there is a boss or a

Theme: Treatment and Support for Common Mental Disorders in the workplace		
Subthemes	**Codes**	**Statements**
		colleague who is suffering from this, and you are a psychologist or even if you are not a psychologist, but you feel that you are also suffering from this problem, then sit with them peacefully. When their mood is good because if their mood is not good, then you will have to listen to them more. And if you see that their mood is good today for some reason, then you can sit with them and talk. This means that they should share with someone, like their good friend, or if they are married, they can share with their spouse, or if they are unmarried, they can share with their close friend, or they can share with their mother or father" (Mental Health Nurse 2, Female). "I am a professional so my advice is that they should seek professional help, they can join online mental health pages for psycho education, they can use self help books, there are many online apps like anxiety to general is an app which I use, it's a robot app in which robot guides me about using various techniques for depression and stress" (Psychologist 1, Female). "First of all, they should utilize their social support and then consultation with consultant is very important regarding their health situation and it is of utmost importance that they should stay connected with their family" (Psychiatrist 3, Male) MHP-9: "timely treatment is necessary, which includes taking sessions consistently, and through medication and counseling, both treatments should be considered" (Psychologist 4, Female).

Theme 3: Attitude towards Behavioural Activation

The third major theme extracted from the interviews explores the professionals' attitudes towards behavioral activation - a therapeutic intervention that focuses on engaging the patient in activities to improve mental health. This theme comprises five subthemes, each highlighting various aspects of behavioral activation.

Subtheme 3.1: Engaging in Activities to Improve Mental Health

Code 1: Routine Engagement for Depression Treatment

Mental health professionals emphasized the importance of engaging in activities to improve mental health. Psychologist 1 (Female) stated:

> *"Because patients with depression lose the will to participate in daily life activities, therapists work on their routine in CBT, called behavioral activation. and add some pleasurable activities to their routine, if this process is done properly then it can reduce depression so I think it's important."*

Code 2: Medication and Patient Involvement

The professionals also highlighted the importance of medication and patient involvement in activities. Psychiatrist 1 (Male) noted:

> *"Behavioral activation is an important part of treatment in which we first identify their disorder, then we treat them with medication, and at the same time we try to engage them in activities so that they can reduce downtime and improve their behavioral functioning, we also give them medication to help prevent relapse."*

Code 3: Investigate Consistent Activity Avoidance

The professionals also discussed the need to investigate consistent activity avoidance. Mental Health Nurse 1 (Female) stated, *"we need to look at the duration of a function or activity. If it's consistently fine, and it's a behavior of avoidance or if there is fear or anxiety due to social situations, then we need to investigate it".*

Code 4: Positive Activities Reduce Depression

The professionals also noted that positive activities can reduce depression. Psychologist 4 (Female) stated:

> *"I have seen many cases like this. For example, when someone retires or when they do online jobs for a short period, they tend to have more of these issues because there are no activities in their life. When there is no fruitful activity in your life, you tend to overthink things and think about everything, which is why it is important to find different activities to engage in, whether they are related to sports or their interests, to lead a healthy lifestyle."*

Code 5: Offer Support and Understanding

The professionals also emphasized the need to offer support and understanding. Mental Health Nurse 2 (Female) stated:

> "We can engage that person in such a way that we can take him somewhere, or you can support him by sitting and eating with him, or you can take him somewhere, or you want to get that person out of this situation, then the same thing can be said."

Subtheme 3.2: BA Compatibility with Respect to Cultural or Organizational Values of Pakistan

The second subtheme identified was the need to modify online Behavioral Activation activities to suit the cultural context of Pakistan. Many participants felt that the list of

suggested activities in standard online BA protocols was not entirely applicable or engaging for their clients due to cultural differences.

Code 1: Modify Activities for Online Behavioral Activation

The professionals suggested modifying activities for online behavioral activation. Psychologist 1 (Female) stated, *"I mean it needs to be modified a bit because in online behavioral activation there are some activities that can't engage clients, there is a big list of activities 500 or 300 except 10 all are compatible to our culture"*.

Code 2: Facilitate Societal Engagement in Behavioral Activation

Professionals identified the lack of societal resources for behavioral activation and advocated for facilitating such activities in the community. The professionals also suggested facilitating societal engagement in behavioral activation. Psychiatrist 1 (Male) noted:

> *"In the department and institution where I am working, here we have proper occupational therapy, we organize games for behavioral activation of patients, in our society we don't have these type activities, we should facilitate our society in this regard because many people do not come for treatment due to lack of resources, if we follow such things in the society, it will help many patients."*

Code 3: Spread Awareness and Adopt Behavioral Activation in our Culture

Some participants believed that BA could be adopted in Pakistani culture, considering its compatibility with societal norms and values. The professionals also discussed the need to spread awareness and adopt behavioral activation in their culture. Psychiatrist 3 (Male) stated, "*we can do like spread awareness to the people*".

Code 4: Incorporate Islamic values in Behavioral Activation Practices

A few participants emphasized that BA could be integrated with Islamic teachings, as both encourage balance, moderation, and proactive problem-solving. Psychologist 6 (Male) stated:

> *"I agree that behavioral activation is compatible with Islamic values and principles. In fact, many of the practices and teachings of Islam encourage balance, moderation, and self-care. For example, the importance of prayer, exercise, healthy eating, spending time with family and friends, and contributing to society are all emphasized in Islam. Furthermore, the concept of behavioral activation aligns with the Islamic belief in taking action and being proactive in seeking solutions to problems. Islam teaches that one should rely on God but also take practical steps to address challenges and achieve goals. Overall, incorporating behavioral activation techniques into daily life can complement and enhance Islamic values and practices."*

In conclusion, the results of this study provide valuable insights into the attitudes towards behavioral activation from the perspective of mental health professionals. The identified themes and subthemes highlight the importance of engaging in activities to improve mental health, the need for medication and patient involvement, the importance of investigating consistent activity avoidance, and the role of positive activities in reducing depression. The findings also suggest the need to modify activities for online behavioral activation, facilitate societal engagement in behavioral activation, spread awareness and adopt behavioral activation in the culture, and incorporate Islamic values in behavioral activation practices. These findings have important implications for the development of effective strategies to promote mental health and well-being in the workplace (see Table 5).

Table 5

Theme: Attitude towards Behavioural Activation		
Subthemes	**Codes**	**Statements**
Engaging in activities to improve mental health	1. Routine engagement for depression treatment 2. Medication and patient involvement 3. Investigate consistent activity avoidance 4. Positive activities reduce depression 5. Offer support and understanding	"Because patients with depression lose the will to participate in daily life activities, therapists work on their routine in CBT, called behavioral activation. and add some pleasurable activities to their routine, if this process is done properly then it can reduce depression so I think it's important" (Psychologist 1, Female). "Behavioral activation is an important part of treatment in which we first identify their disorder, then we treat them with medication, and at the same time we try to engage them in activities so that they can reduce downtime and improve their behavioral functioning, we also give them medication to help prevent relapse" (Psychiatrist 1, Male). "It is very important to be engaged in daily activities, when you are not going to do anything, you can avoid wrong thoughts that will come" (Psychiatrist 2, Male). "I have seen many cases like this. For example, when someone retires or when they do online jobs for a short period, they tend to have more of these issues because there are no activities in their life. When there is no fruitful activity in your life, you tend to overthink things and think about everything, which is why it is important to find different activities to engage in, whether they are related to sports or their interests, to lead a healthy lifestyle" (Psychologist 4, Female). "I believe that if people bound themselves to an activity, even for a short time, and then switch to another activity, and keep themselves engaged, many mental disorders can be reduced to a great extent. This is because such activities refresh our minds" (Psychologist 5, Female). "we need to look at the duration of a function or activity. If it's consistently fine, and it's a behavior of avoidance or if there is fear or anxiety due to social situations, then we need to investigate it" (Mental Health Nurse 1, Female). "we can engage that person in such a way that we can take him somewhere, or you can support him by sitting and eating with him, or you can take him

Theme: Attitude towards Behavioural Activation		
Subthemes	**Codes**	**Statements**
		somewhere, or you want to get that person out of this situation, then the same thing can be said" (Mental Health Nurse 2, Female).
BA compatibility with respect to cultural or organizational values of Pakistan	1. Modify activities for online behavioral activation 2. Facilitate societal engagement in behavioral activation 3. Spread awareness and adopt behavioral activation in our culture 4. Incorporate Islamic values in behavioral activation practices	"I mean it needs to be modified a bit because in online behavioral activation there are some activities that can't engage clients, there is a big list of activities 500 or 300 except 10 all are compatible to our culture" (Psychologist 1, Female). "in the department and institution where I am working, here we have proper occupational therapy, we organize games for behavioral activation of patients, in our society we don't have these type activities, we should facilitate our society in this regard because many people do not come for treatment due to lack of resources, if we follow such things in the society, it will help many patients" (Psychiatrist 1, Male)" "we can do like spread awareness to the people" (Psychiatrist 3, Male). "I think we can adopt it in our culture" (Psychologist 2, Female).. "I agree that behavioral activation is compatible with Islamic values and principles. In fact, many of the practices and teachings of Islam encourage balance, moderation, and self-care. For example, the importance of prayer, exercise, healthy eating, spending time with family and friends, and contributing to society are all emphasized in Islam. Furthermore, the concept of behavioral activation aligns with the Islamic belief in taking action and being proactive in seeking solutions to problems. Islam teaches that one should rely on God but also take practical steps to address challenges and achieve goals. Overall, incorporating behavioral activation techniques into daily life can complement and enhance Islamic values and practices" (Psychologist 6, Male).

Theme 4: Delivery of BA based DMHI in the Workplace

The fourth theme that emerged was the delivery of Behavioral Activation (BA) based Digital Mental Health Interventions (DMHI) in the workplace. This theme revolves around the use of digital mediums such as online platforms and mobile apps for the provision of mental health services, especially for those who cannot access traditional in-person services. This theme comprised four subthemes.

Subtheme 4.1: Digital Mental Health Interventions: Exploring the Landscape and Considerations

The exploration of the landscape and potential considerations of Digital Mental Health Interventions (DMHIs) provides a rich canvas of insights. Mental health professionals highlighted the use of online therapy and mobile apps for specific conditions like depression, anxiety, and stress, pointing to the accessibility and convenience these digital platforms offer. The following codes provide the explanation in this regard.

Code 1: Online Therapy and Mobile Apps for Specific Conditions

The first code refers to the use of online therapy and mobile apps designed to address specific mental health conditions such as depression, anxiety, and stress. Professionals have used digital mediums and apps for mental health interventions, as stated by Psychologist 3 (Female), "*the intervention we provide through digital mediums and I have used one or two software or apps for this.*" One of the psychiatrists also reported the use of digital mental health intervention for specific conditions. *"I have used one for depression, one for anxiety, one for stress and one to help with sleep" (Psychiatrist 2, Male).*

Code 2: Accessibility and Convenience

Digital mental health interventions provide accessibility and convenience, as noted by Psychologist 4 (Female), *"Digital mental health intervention refers to receiving mental health services or providing help to someone through online platforms or personal gadgets like a phone or laptop, where you don't have to personally go and communicate with someone."*

Code 3: Motivation and Effectiveness

The effectiveness of digital mental health interventions depends on the motivation of the patient, as stated by Psychologist 1 (Female), *"If the patient is motivated and willing for seeking help then it would be wonderful for him but if patient is not motivated then it would not be effective for them they won't even download the app."*

Code 4: Potential Benefits and Considerations

The potential benefits and considerations of digital mental health interventions were discussed by Psychiatrist 1 (Male):

> *"I think that first we should take it as a trial, on a few patients if they take this digital intervention and get better then we can recommend it to other patients on a larger scale. Hopefully this will be helpful for people who don't participate in physical activity, but screen time can also be a side effect, so if we can prevent them from having those side effects, this treatment would be nice."*

Subtheme 4.2: Exploring the Digital Landscape: Understanding the Impact and Potential of Online Interventions

Code 1: Differential effects of Physical and Online Sessions

The participants acknowledged that physical and online sessions can yield different outcomes. As one psychiatrist noted, *"I don't recommend it because the effects of physical*

sessions and online are very different, in digital we may face internet issues and other environmental factors may cause disruption" (Psychiatrist 2, Male).

Code 2: Individual Variations in Intervention Effectiveness

Some professionals pointed out that digital interventions can provide accessibility and benefits, especially for individuals who are financially constrained or geographically isolated. A mental health nurse stated,

> *"It will work very well, as many people cannot afford this kind of therapy and suffer as a result. If we make them aware of these things through telephonic or digital mental health interventions, or by recording videos, it will be very good for them. We can guide them by sending them small videos or by setting aside some time for them, like half an hour or an hour, to talk to them about what they are suffering from. so it should be in the workplace and with people who come to us with common mental disorders like stress, anxiety, or depression" (Mental Health Nurse 2, Female).*

Code 3: Positive Impact and Ease of Digital Interventions

Several professionals spoke about the positive impact and ease of use of digital interventions. *"it is very positive impact in them, they are comparatively very easily doing these things" (Psychiatrist 2, Male).*

Code 4: Accessibility and Benefits for Specific Populations (COVID) or Limited access Patients

Professionals acknowledged that digital interventions can particularly benefit specific populations, such as those living in areas with limited healthcare infrastructure, or those affected by situations like the COVID-19 pandemic. "*In terms of digital mental health, I think it can be very helpful, especially since 75 percent of people in Pakistan live in rural areas*

where internet facilities exist, but health infrastructure and services are not as good. Therefore, I think digital mental health intervention would be an asset" (Psychologist 6, Male).

"after the covid people are happy to have such facility. As it will make them at ease not to go anywhere and get online help. it will be very helpful for introverts as they do not meet people in person" (Psychologist 4, Male).

Subtheme 4.3: Challenges in Implementing Digital Mental Health Intervention

Code 1: Digital Intervention Accessibility Limitations

Professionals mentioned some inherent limitations with digital interventions such as potential lack of relatability. One psychologist shared, *"This type of apps has some limited responses; maybe a patient doesn't feel relatable with those responses, then it would not be beneficial for them" (Psychologist 1, Female).*

Code 2: Incomparability of Virtual, Physical Sessions

Participants indicated that online apps can't fully replace physical sessions. A psychologist noted, *"online apps can't replace physical sessions" (Psychologist 1, Female).*

Code 3: User-friendliness in Digital Platforms

Concerns about user-friendliness were also raised. One psychologist mentioned, "*if a person is at the workplace they may be busy with work or meetings so they may not be able to use it properly or understand it properly" (Psychologist 2, Female).*

Code 4: Awareness Deficit for Digital Interventions

The lack of awareness and the criticism from well-educated people was another challenge highlighted by a participant, *"Firstly, the thing is that we are criticized, and that criticism comes from well-educated people"* (Psychologist 5, Female).

Code 5: Digital Intervention Trust Concerns

The trust concerns associated with digital interventions were noted by Psychologist 6 (Male), *"privacy is a common concern associated with digital interventions."*

Code 6: Socioeconomic Barriers in Digitalization

Socioeconomic barriers were also identified as potential issues for accessibility, with one psychiatrist saying, *"If we talk about Pakistan, we know that many people here are not in a good socio-economic status because digital gadgets are expensive; they cannot afford these things" (Psychiatrist 1, Male).*

Code 7: Language, Cultural Compatibility Challenges

Language barriers and the need for cultural compatibility were identified as significant challenges. One psychologist shared, *"In our country, many people are not highly educated or proficient in English. Therefore, it is important for these interventions to be available in local or cultural languages and be user-friendly" (Psychologist 6, Male).*

Subtheme 4.4: Strategies for Effective Digital Health Implementation

Code 1: Interactive App Guidance Provision

Participants suggested the use of interactive apps, where patients can get online guidance from therapists. *"I was thinking that an interactive app could solve this problem where the patient can get guidance from the online therapist about the app usage and activities" (Psychologist 1, Female).* Professionals also expressed a desire for digital sessions to mimic the interaction of physical sessions. *"I mean we should engage with clients as I*

interact with my clients in physical sessions, but it would be an ideal situation" (Psychologist 1, Female).

Code 2: Digital Access and Usage Support

The need for digital access and usage support was highlighted by Psychiatrist 1 (Male), *"You cannot solve the socio-economic status of the population as a whole, but you can work with specific patients. With your funding, you can buy digital gadgets for them or facilitate them by providing internet access."*

Code 3: Establishment of Digital Training Centers

To assist people in using digital health apps, the establishment of digital training centers was suggested. *"We can overcome barriers by making digital cells or centers with digital gadgets and trainers who can train or guide people on how to use these types of apps" (Psychiatrist 2, Male).*

Code 4: Community-based Patient Awareness Program

One psychologist proposed the use of a community supervisor to provide awareness, stating, *"By providing them an internet device or arranging three to four visits a month of a community supervisor who can provide awareness, it will be beneficial for them" (Psychologist 3, Female).*

Code 5: Feedback Mechanisms and User Adaptation

The need to improve the content of these apps was mentioned, particularly the inclusion of voice responses. *"As I mentioned before, we need to work on the content of these apps, especially the content related to mental illnesses. It would be better if we add voice responses to the app, apart from chat" (Mental Health Nurse 1, Female).* The importance of

feedback mechanisms and user adaptation was highlighted by Mental Health Nurse 2 (Female):

> *"The solution is that if someone says that they are out and cannot talk to you or they are driving a rickshaw or someone is working in a 9 to 5 office, we can make small videos and send them to them. You can listen to these small videos and act on them, and if there is anything you don't understand, you can ask us".*

In conclusion, the delivery of BA (Behavioral Activation) based DMHI (Digital Mental Health Interventions) in the workplace offers numerous opportunities and challenges. The exploration of the digital landscape and considerations reveal the use of online therapy and mobile apps for specific mental health conditions, emphasizing accessibility and convenience. However, the effectiveness of these interventions depends on patient motivation and raises concerns about potential side effects. Understanding the impact and potential of online interventions highlights differential effects compared to physical sessions, individual variations in effectiveness, and positive impacts with ease of use. Nonetheless, challenges arise in terms of accessibility limitations, incomparability to physical sessions, user-friendliness, awareness deficit, trust concerns, socioeconomic barriers, and language/cultural compatibility. To address these challenges, strategies for effective implementation include interactive app guidance provision, digital access and usage support, establishment of digital training centers, community-based patient awareness programs, and the importance of feedback mechanisms and user adaptation. By considering these factors and implementing appropriate strategies, the workplace can effectively utilize digital mental health interventions to support employee well-being and mental health (see Table 6).

Table 6

Theme: Delivery of BA based DMHI in the workplace		
Subthemes	**Codes**	**Statements**
Digital Mental Health Interventions: Exploring the Landscape and Considerations	1. Online Therapy and Mobile Apps for Specific Conditions 2. Accessibility and Convenience 3. Motivation and Effectiveness 4. Potential Benefits and Considerations	"the intervention we provide through digital mediums and I have used one or two software or apps for this" (Psychologist 3, Female). "Digital mental health intervention refers to receiving mental health services or providing help to someone through online platforms or personal gadgets like a phone or laptop, where you don't have to personally go and communicate with someone" (Psychologist 4, Female). "I have used one for depression, one for anxiety, one for stress and one to help with sleep" (Psychiatrist 2, Male). "some people cannot come to us because they do not have the facilities or we cannot go to them, we can give them online sessions" (Mental Health Nurse 2, Female). "If the patient is motivated and willing for seeking help then it would be wonderful for him but if patient is not motivated then it would not be effective for them they won't even download the app" (Psychologist 1, Female). "I think that first we should take it as a trial, on a few patients if they take this digital intervention and get better then we can recommend it to other patients on a larger scale. Hopefully this will be helpful for people who don't participate in physical activity, but screen time can also be a side effect, so if we can prevent them from having those side effects, this treatment would be nice" (Psychiatrist 1, Male).
Exploring the Digital Landscape: Understanding the Impact and Potential of Online Interventions	1. Differential effects of physical and online sessions 2. Individual variations in intervention effectiveness 3. Positive impact and ease of digital interventions 4. Accessibility and benefits for specific populations (COVID) or limited access	"I don't recommend it because the effects of physical sessions and online are very different, in digital we may face internet issues and other environmental factors may cause disruption" (Psychiatrist 2, Male). "It will work very well, as many people cannot afford this kind of therapy and suffer as a result. If we make them aware of these things through telephonic or digital mental health interventions, or by recording videos, it will be very good for them. We can guide them by sending them small videos or by setting aside some time for them, like half an

Theme: Delivery of BA based DMHI in the workplace		
Subthemes	**Codes**	**Statements**
	Patients	hour or an hour, to talk to them about what they are suffering from. so it should be in the workplace and with people who come to us with common mental disorders like stress, anxiety, or depression" (Mental Health Nurse 2, Female). "it is very positive impact in them, they are comparatively very easily doing these things" (Psychiatrist 2, Male). "today is social media era, people can take benefit of it by involving themselves in self care. Once they receive this intervention and make their life accordingly it will be good for them" (Psychologist 3, Female). "These things also have a great impact on our mental health, helping us understand what's going on inside us, and identifying some things that are hidden in our unconscious minds that we may not be aware of" (Psychologist 5, Female). "In terms of digital mental health, I think it can be very helpful, especially since 75 percent of people in Pakistan live in rural areas where internet facilities exist, but health infrastructure and services are not as good. As I mentioned earlier, there are only 650 psychiatrists in the entire country, with half of them sitting in urban or major cities, so people have very few chances to seek help from a mental health professional, and there is also the issue of training. Therefore, I think digital mental health intervention would be an asset" (Psychologist 6, Male). "after the covid people are happy to have such facility. As it will make them at ease not to go anywhere and get online help. it will be very helpful for introverts as they do not meet people in person" (Psychologist 4, Male)
Challenges in Implementing Digital Mental Health Intervention	1. Digital Intervention Accessibility Limitations 2. Incomparability of Virtual, Physical Sessions 3. User-friendliness in Digital Platforms 4. Awareness Deficit for	"This types apps has some limited responses maybe patient don't feel relatable with those responses, then it would not be beneficial for them" (Psychologist 1, Female). "If we talk about Pakistan, we know that many people here are not in a good socio-economic status, because digital gadgets are expensive, they cannot afford these things" (Psychiatrist 1, Male).

Theme: Delivery of BA based DMHI in the workplace		
Subthemes	**Codes**	**Statements**
	Digital Interventions 5. Digital Intervention Trust Concerns 6. Socioeconomic Barriers in Digitalization 7. Language, Cultural Compatibility Challenges	"online apps can't replace physical sessions" (Psychologist 1, Female). "if a person is at the workplace they may be busy with work or meetings so they may not be able to use it properly or understand it properly" (Psychologist 2, Female). "Firstly, the thing is that we are criticized, and that criticism comes from well-educated people." (Psychologist 5, Female). "Moreover, we have many difficulties because financially we are not strong, so it will be a bit difficult to take something forward." (Psychologist 5, Female). "When you talk to a psychologist, they actively work on building rapport with the client so that the client can easily understand them and they can help them." (Mental Health Nurse 1, Female). "The biggest issues in our country is electricity, internet connectivity will be another issue. Lack of smartphone will be an issue" (Psychologist 4, Male). "privacy is a common concern associated with digital interventions" (Psychologist 6, Male). "If they get any facilitation it will help them recover quickly" (Psychologist 3, Female). "The biggest challenge is our network, and sometimes we cannot hear the things that are important to us" (Mental Health Nurse 2, Female). "Even our religious scholars fight with each other, and this kind of criticism comes first to us." (Psychologist 5, Female). "In our country, many people are not highly educated or proficient in English. Therefore, it is important for these interventions to be available in local or cultural languages and be user-friendly." (Psychologist 6, Male).
Strategies for Effective Digital Health Implementation	1. Interactive App Guidance Provision 2. Digital Access and Usage Support 3. Establishment of	"I was thinking that an interactive app could solve this problem where the patient can get guidance from the online therapist about the app usage and activities." (Psychologist 1, Female).

Theme: Delivery of BA based DMHI in the workplace		
Subthemes	**Codes**	**Statements**
	Digital Training Centers 4. Community-based Patient Awareness Program 5. Feedback Mechanisms and User Adaptation	"I mean we should engage with clients as I interact with my clients in physical sessions, but it would be an ideal situation." (Psychologist 1, Female). "You cannot solve the socio-economic status of the population as a whole, but you can work with specific patients. With your funding, you can buy digital gadgets for them or facilitate them by providing internet access." (Psychiatrist 1, Male) "Then you can counsel their families on how often they should give those gadgets to these patients and what kind of content they can watch so that these challenges can be addressed through family support and financial assistance." (Psychiatrist 1, Male). "We can overcome barriers by making digital cells or centers with digital gadgets and trainers who can train or guide people on how to use these types of apps." (Psychiatrist 2, Male). "These things can be controlled if they manage their time properly, and internet problems like Wi-Fi connection problems are not in our hands, but with proper time management, they can use digital interventions." (Psychologist 2, Female). "By providing them an internet device or arranging three to four visits a month of a community supervisor who can provide awareness, it will be beneficial for them." (Psychologist 3, Female). "Either physical sessions or recorded video sessions are the other solutions." (Psychologist 4, Male). "As I mentioned before, we need to work on the content of these apps, especially the content related to mental illnesses. It would be better if we add voice responses to the app, apart from chat." (Mental Health Nurse 1, Female). "The solution is that if someone says that they are out and cannot talk to you or they are driving a rickshaw or someone is working in a 9 to 5 office, we can make small videos and send them to them. You can listen to these small videos and act on them, and if there is anything you don't understand, you can ask us." (Mental Health Nurse 2, Female).

Theme 5: Adaptation of BA-based DMHI

Subtheme 5.1: Activities for BA-DMHI

Code 1: Workplace Based Activities

The participants suggested that workplace-based activities could be beneficial for BA-DMHI. Participants mentioned the benefits of introducing collaborative activities at workplaces. *"I think it would be better to introduce collaborative activities instead of individual activities like organizing sports week or other days for celebration, etc." (Psychologist 1, Female).* Similarly, The value of providing recreational activities in the workplace was highlighted. *"For workplace, we can organize recreational activities... organizations should provide their workers with a platform for such activities" (Psychiatrist 2, Male).* Activities that boost self-esteem and create a sense of affiliation were also mentioned. *"In my opinion, we should focus on activities that boost people's self-esteem. In behavioral activation, we should include activities that give people time for themselves... These small activities can help you feel better and create a sense of affiliation in the workplace." (Mental Health Nurse 1, Female).*

Code 2: Culture Based Activities

The participants also highlighted the importance of culture-based activities. Psychiatrist 2 (Male) suggested:

> *Cultural activities can affect people's mental health like in India there are cultural days where people wear cultural clothes and interact with each other so we can organize such things in Pakistan where people from different provinces (Sindh, Punjab, etc.) wear their cultural clothes and have fun with each other in a friendly environment, bringing happiness to people.*

Code 3: Religion-based Activities

Religion-based activities were also seen as beneficial. Religious activities, including recitations, prayers, and religious discussions were proposed. *"If they are religious, recitation of the Quran with translation is best for them, which gives them hope, prayer times, old stories, religious stories, stories of the Prophet's life, if channelized in a smart way all these would be good for them." (Psychologist 1, Female).*

Professionals also mentioned celebrating cultural and religious events. *"Religious-based activities could be organizing a Milad (religious gathering) or an Islamic session. For instance, if it's a Friday, everyone could sit together and recite Darood-e-Pak (a prayer). This way, we could bond over our religious beliefs. Moreover, we could celebrate cultural events related to our culture, for example, if a special day related to our culture is coming up, we could celebrate it together." (Psychologist 5, Female).*

Code 4: Games for BA based DMHI

Games were also recommended as part of BA-DMHI. Psychiatrist 1 (Male) suggested, *"Games in which one can use his brain and these games should also be related to education, as we used to play games like bubble games in our childhood, so we should include games where we can test the intellectual level of patients as these types of games require thinking, so they can improve the mental health of patients."*

Subtheme 5.2: BA-DMHI Activities for Common Mental Disorders

Code 1: BA-DMHI Activities for Depression

Participants suggested task-based activities as a way to combat depression. *"For depression, or if there is a game, and they are given a task, for example, I tell them that this is a task for you, and you can perform it and give it to me. They can be asked to perform a*

drawing. This way, the participant will feel that they are involved in something productive and it can help alleviate their depression." (Psychologist 5, Female).

Further, professionals recommended activities that involve active participation and displacement. *"To manage depression, activities such as displacing oneself, participating in activities, and forcing oneself can enhance mood and reduce depression. However, actively working on these things is important." (Mental Health Nurse 1, Female).*

Code 2: BA-DMHI Activities for Anxiety

Participants discussed the importance of confronting fears to manage anxiety. *"Face your problems and go for solutions even if you get negative feedback. Face your fear."* (Psychologist 4, Male). Moreover, meditation, relaxation therapies, and exercises were also suggested to help with anxiety. *"Meditation, relaxation therapies, exercises, and other similar activities can be helpful for managing anxiety."* (Psychologist 4, Female).

Code 3: BA-DMHI Activities for Workplace Stress

Recreational activities were considered beneficial for managing workplace stress. *"Taking time off from work and going for recreational activities will be helpful for workplace stressors, as they can return to their workplace in a good mood after relaxing."* (Psychiatrist 1, Male). Some of the professionals stated that going for a walk in a natural environment, engaging in deep breathing exercises, or doing activities one enjoys were recommended for stress relief. *"For stress relief, one can try going out for a walk in a natural environment or doing some exercise. Deep breathing exercises can also be helpful in relieving stress. Another option is to engage in activities that one enjoys, such as reading, listening to music, or spending time with friends and family. It's important to find a healthy way to manage stress and not let it build up over time."* (Psychologist 5, Female). Similarly, workplace simulations that show coping strategies for stress were also recommended. *"I think it should*

be something very simple, even animated cartoons can have these elements. For example, there could be a character who starts crying in their workplace, and then a friend comes and consoles them for a couple of minutes... Alternatively, the character could inform their supervisor that they are feeling overburdened and experiencing issues, and the supervisor could offer a solution." (Psychologist 6, Male).

Subtheme 5.3: Guidelines for BA-Based Digital Mental Health Interventions

Code 1: Monitoring BA based DMHI

The participants suggested different frequencies for monitoring BA-DMHI. Psychiatrist 2 (Male) suggested daily monitoring, stating, *"I think they should be monitored on a daily basis because if there is a break they may forget to do it and depressed patients already lack interest so they easily forget to do it but If they do it on a daily basis, it will become their habit."* On the other hand, Psychologist 4 (Female) recommended weekly monitoring, stating, *"I think weekly monitoring is appropriate since daily monitoring is not possible and monthly monitoring is too late."*

Code 2: Recommended number of BA based DMHI modules

The participants had different views on the number of BA-DMHI modules. Psychologist 1 (Female) suggested four modules, stating, *"Four modules are necessary, depending on the person and their priorities the person with anxiety should deliver the anxiety module and sleep module is necessary for all kind of mental health disorders, other modules should be specific."*

Code 3: Recommended duration for BA based DMHI modules

The participants suggested that the duration of BA-DMHI modules should be manageable. Psychologist 1 (Female) stated, *"It not should be very long because if it is very*

long it will be irritating the participant as we are making an online thing it should be up to 10 to 15 minutes."

Code 4: Time for BA based DMHI modules Practice

The participants suggested different times for practicing BA-DMHI modules. Psychiatrist 2 (Male) suggested, *"I think evening time will be better because it is leisure time or family time like in Pakistan it is tea time so it is leisure time, people are at work during day time so evening or night will be good."*

Code 5: Type of Reminder for Practicing a Module

The participants suggested different types of reminders for practicing a module. Psychologist 4 (Male) stated, *"Short message is good, or a reminder call and a popup message."*

Code 6: Place to use the App

The participants suggested that the app could be used in various settings. Psychiatrist 3 (Male) stated, *"The app can be used in various settings, including both home and workplace, allowing individuals to integrate it into their daily routine based on their preferences and convenience."*

Code 7: Recommended Age range for Practicing BA-DMHI

The participants suggested that young adults would be the most engaged with the app. Psychologist 1 (Female) stated, *"Young adults are most engaged with app, people of old age are usually do not use their phone I think it will be very helpful for the young generation."*

Code 8: Recommended level of Education Practicing BA-DMHI

The participants suggested that basic understanding of language and other things would be enough. Psychiatrist 1 (Male) stated, *"Basic understanding of language and other things would be enough."*

Code 9: Mental Health Literacy for BA based DMHI

The participants highlighted the importance of mental health literacy. Psychiatrist 1 (Male) stated, *"Certainly, if man does not know what he does and why he does it, he cannot continue to use it without this insight."*

Code 10: BA-DMHI Participants must be Tech-savvy

The participants suggested that basic knowledge of technology would be sufficient for using the app. Mental Health Nurse 1 (Female) stated, *"If they have basic knowledge of how to use technology, then if we provide such opportunities, apps, or websites, it can change their perspective."*

In conclusion, the results of this study provide valuable insights into the perspectives of mental health professionals on the adaptation of BA-based DMHI. The identified themes, subthemes, and codes provide a comprehensive understanding of the potential activities, guidelines, and considerations for implementing BA-based DMHI. These findings can inform the development and implementation of effective and culturally appropriate BA-based DMHI (see Table 7).

Table 7

Theme: Adaptation of BA-based DMHI		
Subthemes	**Codes**	**Statements**
Activities for BA-DMHI	1. Workplace based activities 2. Culture based activities 3. Religion-based activities 4. Games for BA based DMHI	"I think it would be better to introduce collaborative activities instead of individual activities like organizing sports week or other days for celebration, etc." (Psychologist 1, Female). "For workplace, we can organize recreational activities, apart from work people are creative in other things as well, so every week or monthly an activity should be organized so that workers can show and polish their skills... organizations should provide their workers with a platform for such activities." (Psychiatrist 2, Male). "In my opinion, we should focus on activities that boost people's self-esteem. In behavioral activation, we should include activities that give people time for themselves... These small activities can help you feel better and create a sense of affiliation in the workplace." (Mental Health Nurse 1, Female). "Cultural activities can affect people's mental health like in India there are cultural days where people wear cultural clothes and interact with each other so we can organize such things in Pakistan where people from different provinces (Sindh, Punjab, etc.) wear their cultural clothes and have fun with each other in a friendly environment, bringing happiness to people." (Psychiatrist 2, Male). "For example, if an event comes up, we can celebrate it together or we can have lunch together or plan to go out somewhere and take a tour. We can also organize a tea party or if we are free, we can play games with our colleagues such as solving puzzles or playing card games which are quite popular." (Psychologist 5, Female). "Cultural and religious activities can also be incorporated into the digital mental health platform in a way that's respectful and inclusive of all backgrounds. By allowing individuals to share their experiences and provide feedback, the platform can be tailored to better suit the needs of its users." (Psychologist 6, Male). "If they are religious, recitation of the Quran with translation is best for them, which gives them hope, prayer times, old stories, religious stories, stories of

Theme: Adaptation of BA-based DMHI		
Subthemes	**Codes**	**Statements**
		the Prophet's life, if channelized in a smart way all these would be good for them." (Psychologist 1, Female). "Religious-based activities could be organizing a Milad (religious gathering) or an Islamic session. For instance, if it's a Friday, everyone could sit together and recite Darood-e-Pak (a prayer). This way, we could bond over our religious beliefs. Moreover, we could celebrate cultural events related to our culture, for example, if a special day related to our culture is coming up, we could celebrate it together." (Psychologist 5, Female). "See, in terms of culture or religion, we talk to that person according to their culture. If he is a Hindu or a Muslim or whatever, we talk to him according to his culture. For example, if someone is a Muslim and is feeling sad or something is happening and he feels that no one is listening to him, then we can tell him to pray. We can also give him examples of prayer. In my opinion, we should tell him about prayer, and when his heart is sad or he feels like crying, he should recite the Quran or start reciting verses that make him happy. We have to see his religion or culture; otherwise, issues can arise." (Mental Health Nurse 2, Female). "Yes, I do recommend games. I recommend games like Candy Crush but I don't recommend games like PUBG which can stress the clients. I recommend those games where there is no tension of losing or winning." (Psychologist 1, Female). "Games in which one can use his brain and these games should also be related to education, as we used to play games like bubble games in our childhood, so we should include games where we can test the intellectual level of patients as these types of games require thinking, so they can improve the mental health of patients." (Psychiatrist 1, Male).
BA-DMHI Activities for Common Mental Disorders	1. BA-DMHI Activities for depression 2. BA-DMHI Activities for Anxiety 3. BA-DMHI Activities for Workplace Stress	"For depression, or if there is a game, and they are given a task, for example, I tell them that this is a task for you, and you can perform it and give it to me. They can be asked to perform a drawing. This way, the participant will feel that they are involved in something productive and it can help alleviate their depression." (Psychologist 5, Female).

Theme: Adaptation of BA-based DMHI		
Subthemes	**Codes**	**Statements**
		"To manage depression, activities such as displacing oneself, participating in activities, and forcing oneself can enhance mood and reduce depression. However, actively working on these things is important." (Mental Health Nurse 1, Female). "Face your problems and go for solutions even if you get negative feedback. Face your fear." (Psychologist 4, Male). "Meditation, relaxation therapies, exercises, and other similar activities can be helpful for managing anxiety." (Psychologist 4, Female). "Taking time off from work and going for recreational activities will be helpful for workplace stressors, as they can return to their workplace in a good mood after relaxing." (Psychiatrist 1, Male). "For stress relief, one can try going out for a walk in a natural environment or doing some exercise. Deep breathing exercises can also be helpful in relieving stress. Another option is to engage in activities that one enjoys, such as reading, listening to music, or spending time with friends and family. It's important to find a healthy way to manage stress and not let it build up over time." (Psychologist 5, Female). "I think it should be something very simple, even animated cartoons can have these elements. For example, there could be a character who starts crying in their workplace, and then a friend comes and consoles them for a couple of minutes. They then have some tea together and it's shown that they have had a cathartic release and are now feeling normal again. Alternatively, the character could inform their supervisor that they are feeling overburdened and experiencing issues, and the supervisor could offer a solution." (Psychologist 6, Male).
Guidelines for BA-Based Digital Mental Health Interventions	1. Monitoring BA based DMHI 2. Recommended number of BA based DMHI modules 3. Recommended duration for BA based DMHI modules 4. Number of BA based DMHI modules per	"I think they should be monitored on a daily basis because if there is a break they may forget to do it and depressed patients already lack interest so they easily forget to do it but If they do it on a daily basis, it will become their habit." (Psychiatrist 2, Male). “I think weekly monitoring is appropriate since daily monitoring is not possible and monthly monitoring is too late” (Psychologist 4, Female). "It's best to monitor activities on alternative days or

Theme: Adaptation of BA-based DMHI		
Subthemes	**Codes**	**Statements**
	month 5. Time for BA based DMHI modules module practice 6. Type of reminder for practicing a module 7. Place to use the app 8. Recommended age range for practicing BA-DMHI 9. Recommended level of education practicing BA-DMHI 10. Mental health literacy for BA based DMHI 11. BA-DMHI participants must be tech-savvy	at least once a week, but not longer than that." (Mental Health Nurse 1, Female). "Four modules are necessary, depending on the person and their priorities the person with anxiety should deliver the anxiety module and sleep module is necessary for all kind of mental health disorders, other modules should be specific." (Psychologist 1, Female). "It depends on how many modules can improve their mental health, so it's too early to tell." (Psychiatrist 1, Male). "four modules, but I think based on each individual's psyche, modules should be recommended accordingly." (Psychologist 5, Female). "It not should be very long because if it is very long it will be irritating the participant as we are making an online thing it should be up to 10 to 15 minutes" (Psychologist 1, Female). "We should not overburden them because patients are already suffering and generally lack motivation so we can't overburden them, if a module is of 15 minutes it may be easy at start but we should not increase time immediately we can start from 5 minutes then 10 minutes, then 15 minutes and so on" (Psychiatrist 2, Male). "It should be based on the necessity and requirement of the patient , criteria should be determine in the beginning" (Psychologist 1, Female). "It depends on their illness whether they suffer from depression, anxiety or stress as stress is related to both depression and anxiety" (Psychiatrist 1, Male). "I think evening time will be better because it is leisure time or family time like in Pakistan it is tea time so it is leisure time, people are at work during day time so evening or night will be good" (Psychiatrist 2, Male). "The lunchtime at work is a good time to practice these modules, as it can help reduce stress at the workplace" (Mental Health Nurse 1, Female). "Day time is more good as most of the people gets tired due to work and wants to relax" (Psychologist

Theme: Adaptation of BA-based DMHI		
Subthemes	**Codes**	**Statements**
		3, Female). "Short message is good, or a reminder call and a popup message" (Psychologist 4, Male) (MHP-7) "popups within the App which reminds people about their sessions and activities" (Psychologist 3, Female). "The app can be used in various settings, including both home and workplace, allowing individuals to integrate it into their daily routine based on their preferences and convenience" (Psychiatrist 3, Male). "Flexibility is key when it comes to using the app, as individuals should have the freedom to choose the most suitable place for them, whether it's at home, during lunch breaks at work, or any other location where they can engage with the app effectively" (Psychologist 6, Male). "Young adults are most engaged with app, people of old age are usually do not use their phone I think it will be very helpful for the young generation" (Psychologist 1, Female). "Its prevalence is higher at the adult level as anxiety, depression is more common among young people and their use of apps is also high" (Psychologist 2, Female). "Basic understanding of language and other things would be enough" (Psychiatrist 1, Male). "I think if they can easily operate and understand the basic things of mobile application it would be sufficient" (Psychiatrist 2, Male). "The level of education does not matter much; experience matters more in this field" (Psychologist 5, Female). "Certainly, if man does not know what he does and why he does it, he cannot continue to use it without this insight" (Psychiatrist 1, Male). "It's very important because without awareness about the importance of mental health, the person may not understand the essence or basic purpose of the app. We should create advertisements, videos, and ads to raise awareness about the app, who created it, and why it's important. After that, if the person uses the

Theme: Adaptation of BA-based DMHI		
Subthemes	**Codes**	**Statements**
		app, they will be able to relate to it better” (Mental Health Nurse 1, Female). “I think in today's era, everyone knows how to use a mobile phone, whether they are a person living in a village or a person living in a city. To use a mobile phone, you don't need education. But there is one more thing, if we speak English while sitting in a village, then they won't understand” (Mental Health Nurse 2, Female). “If they have basic knowledge of how to use technology, then if we provide such opportunities, apps, or websites, it can change their perspective” (Mental Health Nurse 1, Female).

DISCUSSION

Chapter IV

DISCUSSION

Study 1 Part 2: based on the Results of Mental Health Professional (MHP)

The results of the present study underscore the heightened prevalence and severity of common mental disorders among employees, in line with the growing body of research in the domain of workplace mental health. A key aspect to note from the thematic analysis is the recognition of the ubiquitous presence of depression and stress in workplace settings. This observation mirrors the findings of prior studies which document that work-related stress, especially due to high workload, is a significant precursor to depression and anxiety (Leka, Griffiths, & Cox, 2003). Moreover, the rise of digitalization and its subsequent impact on sleep patterns reaffirms previous concerns about the relationship between screen exposure and sleep disruption (Cain & Gradisar, 2010). Increased exposure to screens, especially before bedtime, has been linked to decreased melatonin secretion, leading to disturbed sleep patterns.

Notably, the aftermath of the COVID-19 pandemic has created a ripple effect on the mental well-being of the workforce. The reported rise in cases of depression and anxiety post-COVID-19 by the participants reflects global concerns about the pandemic's enduring impact on mental health (Pfefferbaum & North, 2020). The economic uncertainties, coupled with health anxieties, are posited to contribute to this surge. The recurrence of anxiety, especially in males, as highlighted by the mental health professionals, is particularly salient. While research often highlights higher prevalence rates of anxiety in females, the increased reports among male employees, as noted in this study, might signify changing workplace dynamics or a rising recognition of previously undetected cases (McLean, Asnaani, Litz, & Hofmann, 2011). The professionals' observations about anxiety stemming from mismanaged

stress echo the literature that situates lack of stress management skills at the heart of anxiety disorders (Hofmann & Hay, 2018).

A novel insight gleaned from the interviews revolves around the impact of social media on mental health, specifically how comparison with others precipitates depressive symptoms. This is consonant with studies that find social comparison on platforms like Instagram and Facebook to be correlated with depressive symptoms (Primack et al., 2017). Furthermore, the professionals' discourse on the symptoms and causes of depression, anxiety, and stress reaffirms the multi-dimensional nature of these disorders. The intricate interplay of cognitive patterns, societal pressures, and external stressors as causes resonates with the biopsychosocial model of mental disorders (Engel, 1977).

Lastly, the profound repercussions of these disorders on individuals' daily functionality and quality of life stress the imperative to address them robustly. Their debilitating effects range from undermining academic and professional performance to exacerbating physical health conditions (Simon, 2003).

The insights derived from the perspectives of mental health professionals provide a nuanced understanding of the landscape of workplace mental health, especially in the contemporary post-pandemic era. This study uniquely contributes to the dialogue by shedding light on less-explored areas like the effect of digitalization and illuminates pathways for the development of targeted interventions for workplace mental health, especially behavioral activation-based digital mental health interventions.

A striking discovery in the present research is the extensive array of local terminologies used to describe mental health disorders, emphasizing the significance of cultural understanding. These linguistic nuances, as explained by the respondents, highlight the ways in which mental disorders are conceptualized in different cultural contexts. These

findings resonate with existing literature which emphasizes that an individual's cultural background can heavily influence their understanding of mental illness and its manifestation (Kirmayer & Minas, 2000). Terms like 'Pareseshan rehna' or 'Afsurdagi' not only offer a linguistic representation but also provide a window into how these conditions are perceived and addressed within a specific cultural context.

Further delving into the realm of cultural understanding, religious beliefs were frequently mentioned by the mental health professionals as playing a pivotal role in shaping perceptions and approaches towards mental health disorders. For instance, the act of seeking help from religious healers instead of clinical professionals, as described by Psychologist 5 (Female), is reminiscent of earlier findings that have underscored the role of faith and spirituality in determining coping mechanisms (Chakraborty & Chatterjee, 2013). The inherent challenge here, however, is the potential for misunderstanding and mismanagement of genuine psychological concerns. This points to the necessity for enhanced cross-cultural communication and training in the field of mental health.

Types of Treatments Used for Mental Illnesses

The diverse spectrum of treatments outlined by the professionals emphasizes that a one-size-fits-all model is not viable for mental health interventions. The profound role of mental health awareness and education stood out. As Psychologist 1 (Female) pointed out, the sheer lack of knowledge and awareness can hinder timely and effective treatment. This aligns with global studies which indicate that awareness and education form the foundation of early diagnosis and successful interventions (Patel, Saxena, Lund, et al., 2018).

The biopsychosocial treatment model, entailing a mix of psychotherapies, medications, and self-help methods, emerged as the predominant treatment approach. This reiterates the holistic approach suggested by Engel (1977), which promotes the simultaneous

consideration of biological, psychological, and social factors. Furthermore, the inclination towards medication, as noted by Psychologist 4 (Female), echoes global trends and debates on the balance between pharmacological and therapeutic treatments. Lastly, the emergence of talk therapy, self-help, and support as viable treatment avenues complements previous research suggesting the efficacy of such non-pharmacological interventions (Hofmann, Asnaani, Vonk, Sawyer, & Fang, 2012).

To encapsulate, the insights derived from the expert opinions of these mental health professionals illustrate the multifaceted nature of understanding and treating mental disorders in the workplace. Bridging the cultural and religious gaps, enhancing awareness, and embracing a plethora of treatment options are instrumental in forging a future where mental health in the workplace is not just addressed but nurtured.

The data procured from 16 mental health professionals underscores the paramount significance of acknowledging and addressing mental health issues within the workplace. The results are consistent with previous research suggesting the detrimental impacts of untreated mental health issues on both individual performance and the broader organizational milieu (World Health Organization, 2017).

Subtheme 2.1: The Importance of Addressing and Treating Mental Health Issues in the Workplace

Resoundingly, participants were unanimous in asserting the critical role of mental health treatment within professional environments. *Importance of Mental Health Treatment* was identified as a salient code, with professionals recognizing the dual benefits of good mental health: individual well-being and increased workplace productivity. The sentiment expressed by Psychologist 1 and Psychologist 6 echoes the findings of previous studies that have highlighted the positive correlation between psychological well-being and work

performance (Bailey, Dollard, & Richards, 2015). Moreover, the revelation of a staggering 35 percent of the Pakistani population grappling with psychological illnesses amplifies the urgency of the issue, correlating with global trends that spotlight rising mental health concerns, particularly in the context of workplaces (World Health Organization, 2017).

Timely Intervention and Support emerged as a critical sub-theme. This is aligned with past research which has posited that early intervention can circumvent the escalation of mental health problems, promoting faster recovery, and reducing associated socioeconomic costs (Kitchener & Jorm, 2004). The emphasis by the professionals on the ripple effect of untreated psychological disorders—citing implications not only for the affected individual but also for their dependents and larger community—is noteworthy. The third code, *Awareness and Coping Strategies*, stresses the indispensability of dismantling myths surrounding mental health. Introducing regular counseling sessions and ensuring job security for those grappling with disorders is consistent with prior recommendations advocating for destigmatization and increased mental health literacy within organizational settings (Corrigan & Rao, 2012).

Emphasizing the intricate tapestry of physical and mental health, the fourth code underlines the holistic approach towards individual well-being. The observation by Psychologist 4, highlighting anxiety as a precursor to somatic health problems, mirrors earlier findings (Scott, Lim, Al-Hamzawi, et al., 2016). An integrated approach concurrently addressing mental and physical health needs in the workplace was recommended, aligning with calls for holistic worker health promotion (Kaspin et al., 2013).

Lastly, participants highlighted the need to foster safe, supportive workplace environments where mental health can be discussed openly and support is readily accessible. This is pivotal, as numerous studies have reaffirmed the role of workplace environments in

either exacerbating or ameliorating mental health challenges (Lai, Ma, Wang, et al., 2020). This mirrors findings that psychosocial safety climate and a culture of trust, inclusivity and demystification are key to facilitating help-seeking behaviors and mental health treatment uptake in organizations (Dollard & Bailey, 2014; Kitchener & Jorm, 2008). The data emphasizes a paradigm shift towards proactive mental health support in workplaces, from early detection to creating supportive environments. Such an approach is not only humane but also pragmatic, promising healthier employees and enriched organizational outcomes.

Subtheme 2.2: Ways to Help Workers with Common Mental Diseases

The second subtheme culled from the data focuses on potential interventions and supports that can assist employees struggling with common mental disorders. This theme contains seven subthemes, each delineating various suggested measures and strategies. Primarily, there is a potent call for Providing Anonymous Digital Support, as depicted by Psychologist 1 (Female). Such platforms, analogous to Oladoc, have gained traction in recent literature due to their efficacy and ability to mitigate the pervasive stigma around mental health, which often deters individuals from seeking timely help (Corrigan, 2004).

Concurrently, there's an emphasis on Encouraging Workplace Counselling, a sentiment echoed by Psychologist 3 (Female). Past research consistently showcases the benefits of workplace counseling, pinpointing it as a proactive avenue for the early detection and management of emergent mental health concerns (Paul, & Moser, 2009). The data also shed light on the importance of Mental Health Awareness Sessions, as accentuated by Psychologist 6 (Male). His concerns regarding the shortage of mental health professionals and lack of comprehensive counseling resonate with the lacunae identified in previous studies (Saxena, Thornicroft, Knapp, & Whiteford, 2007). This underlines the dire necessity of both

grassroots and political awareness, aiming to not only challenge ignorance and stigma but also to marshal crucial resources.

Furthermore, the nuances of workplace dynamics, as elucidated by Psychologist 2 (Female) under the theme Identifying Stressors and Coping Strategies, align seamlessly with the existing literature that identifies interpersonal workplace relationships as pivotal determinants of an individual's mental well-being (Elfering, Semmer, & Grebner, 2006). Introducing coping strategies and fostering a nurturing environment emerges as a viable solution. The role of Effective Communication and Listening, as highlighted by Mental Health Nurse 2 (Female), further reiterates the established paradigm that robust social support networks, particularly family, act as protective buffers against deteriorating mental health (Cohen, & Wills, 1985).

Furthermore, the digital age's imprints are evident in the study, with Psychologist 1 (Female) stressing the salience of Seeking Professional help and Support for Mental Health via online platforms. The versatility and reach of digital tools, such as the anxiety to general app, have been championed in contemporary research as avenues offering both educational and therapeutic interventions (Firth, et al., 2017). Concluding the subthemes, the balanced synergy of Combining Counselling with Medication has been espoused by Psychologist 4 (Female), a therapeutic strategy that aligns with the holistic approach propagated in contemporary mental health practices (Kirsch, et al., 2008). In essence, the findings from this qualitative exploration offer a nuanced tapestry of perspectives, both echoing and enriching existing literature. The study underscores the non-negotiable need for proactive mental health strategies in today's high-stress work environments.

Theme 3: Attitude towards Behavioral Activation

Subtheme 3.1: Engaging in Activities to Improve Mental Health

Mental health professionals emphasized the importance of engaging in activities as a part of the treatment for mental health issues, particularly depression. Psychologist 1 (Female) noted that behavioral activation is a crucial component of Cognitive Behavioral Therapy (CBT), aimed at encouraging patients to participate in daily life activities. This aligns with previous research that has demonstrated the efficacy of behavioral activation in treating depression (Jacobson et al., 1996). Moreover, the professionals highlighted the role of medication in conjunction with behavioral activation. Psychiatrist 1 (Male) stated that medication is administered to prevent relapse while simultaneously engaging the patient in activities. This dual approach is consistent with existing literature that advocates for a multimodal treatment plan involving both pharmacotherapy and psychotherapy (Kuyken et al., 2015).

The need to investigate consistent activity avoidance was also discussed. Mental Health Nurse 1 (Female) emphasized that understanding the underlying reasons for activity avoidance, such as social anxiety, is crucial. This is in line with the work of Martell et al. (2010), who argue that understanding the context of avoidance behaviors is essential for effective treatment. The professionals also noted that engaging in positive activities can significantly reduce symptoms of depression. Psychologist 4 (Female) pointed out that the absence of meaningful activities can lead to overthinking and exacerbate mental health issues. This is corroborated by research suggesting that engagement in positive activities can serve as a protective factor against depression (Lyubomirsky et al., 2005). Lastly, the importance of offering support and understanding was emphasized. Mental Health Nurse 2 (Female) suggested that simple acts of companionship can make a significant difference. This

resonates with the patient-centered approach advocated in the literature, which emphasizes the role of empathy and understanding in mental health treatment (Rogers, 1951).

This study contributes uniquely to the existing body of literature by providing insights directly from mental health professionals. It highlights the nuanced perspectives of professionals on the role and importance of behavioral activation, thereby filling a gap in the literature that often focuses solely on patient outcomes. In conclusion, the attitudes towards behavioral activation among mental health professionals are generally positive and align well with existing research. The study underscores the importance of a multifaceted approach to treating mental health issues, combining medication, behavioral activation, and empathetic support.

Subtheme 3.2: BA Compatibility with Respect to Cultural or Organizational Values of Pakistan

The second subtheme that emerged from the data was the need to adapt behavioral activation (BA) activities to the cultural context of Pakistan. Psychologist 1 (Female) pointed out that many activities in standard online BA protocols are not culturally compatible. This finding resonates with research that emphasizes the importance of cultural adaptation in psychological interventions (Bernal et al., 1995). Furthermore, professionals highlighted the lack of societal resources for behavioral activation in Pakistan. Psychiatrist 1 (Male) advocated for facilitating such activities in the community, emphasizing that many people do not seek treatment due to a lack of resources. This aligns with the social determinants of health model, which suggests that societal factors significantly influence health outcomes (Marmot, 2005).

The need to spread awareness and adopt behavioral activation in Pakistani culture was also discussed. Psychiatrist 3 (Male) suggested that BA is compatible with societal norms and

values in Pakistan. This is consistent with the literature that advocates for culturally sensitive mental health promotion strategies (Chowdhary et al., 2014). Interestingly, some participants emphasized the compatibility of BA with Islamic teachings. Psychologist 6 (Male) noted that Islamic principles encourage balance, moderation, and proactive problem-solving, which align with the goals of BA. This is an important consideration, especially given the significant role religion plays in shaping cultural norms and practices (Rassool, 2000). The findings of this study offer valuable insights into the attitudes of mental health professionals towards behavioral activation. The study not only underscores the importance of engaging in activities to improve mental health but also highlights the need for cultural adaptation, societal engagement, and religious compatibility in implementing BA, particularly in the Pakistani context.

Theme 4: Delivery of BA based DMHI in the Workplace

The fourth theme that emerged from the study pertains to the delivery of Behavioral Activation (BA) based Digital Mental Health Interventions (DMHI) in the workplace. This theme is particularly relevant in the current digital age, where online platforms and mobile apps are increasingly being used for mental health services. The theme comprises four subthemes, each of which will be discussed in detail below.

Subtheme 4.1: Digital Mental Health Interventions: Exploring the Landscape and Considerations

The first code under this subtheme underscores the growing utilization of online therapy and mobile apps for treating specific mental health conditions such as depression, anxiety, and stress. Notably, both Psychologist 3 (Female) and Psychiatrist 2 (Male) have reported employing these digital platforms for interventions. Importantly, this observation

aligns with existing literature, which suggests that digital interventions can be as effective as traditional face-to-face interventions for certain conditions (Andersson et al., 2014).

Transitioning to the second code, the focus shifts to the accessibility and convenience offered by digital mental health interventions. As pointed out by Psychologist 4 (Female), these platforms obviate the need for physical presence, thereby democratizing access to mental health services. This finding is corroborated by research that indicates digital interventions can effectively overcome barriers to mental health care, such as geographical limitations and stigma (Mohr et al., 2013). Building on this, the third code delves into the pivotal role of patient motivation in determining the effectiveness of digital interventions. According to Psychologist 1 (Female), the success of these interventions is largely contingent upon the patient's willingness to engage. This sentiment is echoed in academic studies, which have consistently found that patient engagement is a critical factor in the success of digital mental health interventions (Donkin et al., 2011).

Lastly, the fourth code explores the potential benefits and considerations associated with digital interventions. Psychiatrist 1 (Male) advocates for a trial-based approach to these interventions and also raises concerns about the potential side effect of increased screen time. This nuanced perspective adds to the ongoing debate in scholarly literature concerning the advantages and disadvantages of digital mental health interventions (Firth et al., 2017). The findings of this study provide a comprehensive understanding of mental health professionals' attitudes towards behavioral activation and its delivery through digital platforms, particularly in the workplace. Consequently, the study accentuates the need for culturally sensitive, accessible, and patient-centered approaches in mental health interventions. Moreover, it underscores the potential of digital platforms to extend the reach and effectiveness of these interventions, albeit with certain considerations to bear in mind.

These insights are invaluable for a range of stakeholders, including policymakers, clinicians, and researchers, who are aiming to develop effective mental health strategies in the workplace. This is especially pertinent in culturally diverse settings like Pakistan, where the study was conducted.

Subtheme 4.2: Exploring the Digital Landscape: Understanding the Impact and Potential of Online Interventions

Initiating the discussion under this subtheme, the first code draws attention to the differential effects between physical and online sessions. Psychiatrist 2 (Male) articulated reservations about the limitations inherent to digital interventions, such as internet connectivity issues and environmental disruptions. This perspective is congruent with existing literature, which has similarly identified potential drawbacks of online therapy, including the absence of non-verbal cues and technical glitches (Barak et al., 2008). Transitioning to the second code, the emphasis is placed on the individual variations in the effectiveness of digital interventions. Mental Health Nurse 2 (Female) underscored the particular advantages of digital interventions for those who are financially constrained or geographically isolated. This observation aligns with existing research, which has demonstrated that telehealth can serve as a cost-effective alternative to traditional therapy, especially for populations that are underserved (Hilty et al., 2013).

Building upon this, the third code explores the positive impact and ease of use associated with digital interventions. Psychiatrist 2 (Male) remarked that patients generally find digital interventions to be comparatively easy to engage with. This viewpoint is substantiated by academic studies that have emphasized the user-friendliness of digital mental health platforms (Torous et al., 2018). Lastly, the fourth code delves into the accessibility and benefits of digital interventions for specific populations, such as those

residing in rural areas or those impacted by the COVID-19 pandemic. Both Psychologist 6 (Male) and Psychologist 4 (Male) highlighted the potential utility of digital interventions in these specialized contexts. This resonates with contemporary research, which has documented the rapid adoption and effectiveness of telehealth services amid the COVID-19 pandemic (Wosik et al., 2020). This study offers a nuanced understanding of the perspectives of mental health professionals regarding the delivery of Behavioral Activation through digital platforms. While the professionals did acknowledge certain limitations, they also accentuated the potential benefits, particularly for specific populations and unique contexts. These insights hold significant implications for the future development and implementation of digital mental health interventions in the workplace, especially in environments characterized by diverse needs and challenges.

Theme 5: Adaptation of BA-Based Digital Mental Health Interventions (BA-DMHI)

Subtheme 5.1: Activities for BA-DMHI

The first code within this subtheme underscores the significance of workplace-based activities for BA-DMHI. Participants advocated for collaborative activities like sports weeks or celebrations to cultivate a sense of community and well-being. This notion is corroborated by existing research, which has demonstrated the positive impact of workplace wellness programs on employee mental health (Goetzel et al., 2014). Transitioning to the second code, the emphasis is on the importance of culture-based activities. Participants suggested organizing cultural days, where employees can don traditional attire and partake in cultural activities. This aligns with literature that has explored the role of cultural activities in enhancing mental well-being (Chatterjee et al., 2017).

Subsequently, the third code delves into the potential benefits of religion-based activities, such as recitations and prayers. This is supported by studies that have highlighted

the positive impact of spirituality on mental health (Koenig, 2012). Lastly, the fourth code recommends the incorporation of intellectually stimulating games as part of BA-DMHI. This suggestion is substantiated by research that has explored the cognitive benefits of games in improving mental health (Granic et al., 2014). The fifth theme of the study explores the adaptation of Behavioral Activation based Digital Mental Health Interventions (BA-DMHI) and suggests a variety of activities that could be beneficial. These activities range from workplace-based and culture-based activities to religion-based activities and games. The findings indicate that a multi-faceted approach, considering the cultural, religious, and recreational aspects, can be effective in implementing BA-DMHI. This contributes uniquely to the existing literature by offering a comprehensive understanding of how BA-DMHI can be adapted to different settings, particularly in the workplace.

Subtheme 5.2: BA-DMHI Activities for Common Mental Disorders

The first code under this subtheme advocates for task-based activities to combat depression. Participants recommended activities that involve active participation and displacement, such as drawing or engaging in productive tasks. This is consistent with existing research that has shown the effectiveness of task-based activities in alleviating symptoms of depression (Cuijpers et al., 2011). Moving on to the second code, the focus is on the importance of confronting fears and engaging in relaxation therapies to manage anxiety. This aligns with cognitive-behavioral approaches that emphasize exposure and relaxation techniques as effective interventions for anxiety (Hofmann et al., 2012).

The third code zeroes in on recreational activities for managing workplace stress. Participants suggested activities like walking in a natural environment, deep breathing exercises, and engaging in enjoyable activities. This is supported by research that has demonstrated the benefits of such activities in reducing workplace stress (Richardson &

Rothstein, 2008). The fifth theme of the study extends to the adaptation of BA-DMHI for common mental disorders like depression, anxiety, and workplace stress. The findings suggest a range of activities that can be incorporated into BA-DMHI, each tailored to address specific mental health issues. This adds a unique dimension to the existing literature by providing a nuanced understanding of how BA-DMHI can be adapted to treat common mental disorders in the workplace setting.

Subtheme 5.3: Guidelines for BA-Based Digital Mental Health Interventions

The first code under this subtheme discusses the frequency of monitoring BA-DMHI. Participants had varying opinions, ranging from daily to weekly monitoring. This reflects the need for a flexible monitoring system that can be tailored to individual needs, a concept supported by existing literature on telehealth monitoring (Parmanto et al., 2016). The second and third codes focus on the number and duration of BA-DMHI modules. Participants suggested that the modules should be specific to the mental health condition being treated and should be of manageable duration. This aligns with the principles of user-centered design, which emphasize the importance of creating interventions that are both effective and user-friendly (Norman & Draper, 1986).

The fourth and sixth codes discuss the optimal time and place for practicing BA-DMHI modules. Participants suggested that the interventions should be flexible enough to be practiced at various times and settings, emphasizing the need for interventions that can be integrated into daily routines. The fifth, seventh, and eighth codes discuss the types of reminders that should be used and the target demographic for the interventions. Participants suggested that reminders could range from short messages to popup notifications and that the interventions should be designed to be accessible to individuals with varying levels of education and technological literacy.

The ninth and tenth codes highlight the importance of mental health literacy and basic technological skills for effective engagement with BA-DMHI. This is consistent with research that has shown the importance of health literacy in the effective use of digital health interventions (Neter & Brainin, 2019). The fifth theme, focusing on the adaptation of BA-based DMHI, provides a comprehensive set of guidelines for the implementation of such interventions. These guidelines cover a range of considerations, from the frequency of monitoring to the types of activities that should be included, and offer valuable insights for the development of effective and culturally appropriate BA-based DMHI. By taking these factors into account, mental health professionals and intervention designers can create more effective, user-friendly, and culturally sensitive digital mental health interventions.

Chapter IV

RESULTS

Study 2: Results of the Feasibility and Acceptability of the BA-DMHI

The study aimed to investigate the sociodemographic characteristics of the workplace employees who participated in Behavioral Activation based Digital mental Health Intervention (BeBright), focusing on variables such as gender, age, ethnicity, education level, relationship status, and living environment. Data were collected from a total of 30 participants. Key findings indicate a gender disparity, with males comprising 73.3% (n = 22) and females making up 26.7% (n = 8) of the study population. The age distribution was fairly balanced among the younger age groups: 33.3% (n = 10) were aged 18-24, 36.7% (n = 11) were 25-34, and 30% (n = 9) were 35-44. No participants were in the 45-54 age range. In terms of ethnicity, Punjabi and Pashtun (Pathan) were the most represented ethnic groups, each accounting for 26.7% (n = 8) of the sample. Education level was skewed towards higher education, with 46.7% (n = 14) holding a Master's Degree. The majority of the participants were married (60%, n = 18) and lived in an urban environment (60%, n = 18). Table 8 shows details.

Table 8

Sociodemographic Characteristics of the Study Population

Characteristic	***f***	**%**
Gender:		
Male	22	73.3
Female	8	26.7
Age Range:		
18-24	10	33.3
25-34	11	36.7
35-44	9	30.0
45-54	0	0.0
Ethnicity:		
Punjabi	8	26.7
Sindhi	4	13.3
Pashtun (Pathan)	8	26.7
Baloch	3	10.0
Kashmiri	4	13.3
Gilgit-Baltistani	3	10.0
Education Level:		
Some College or Associate's Degree	3	10.0
Bachelor's Degree	10	33.3
Master's Degree	14	46.7
Doctorate or Professional Degree	3	10.0
Relationship Status:		
Single	6	20.0
Engaged	6	20.0
Married	18	60.0
Living Environment:		
Urban	18	60.0
Suburban	10	33.3
Rural	2	6.7

The study further examined the employment profile of the same population, focusing on aspects such as employment status, work position, work schedule, years of employment, remote work, commute, and job security. A total of 30 participants were included in this aspect of the study. The majority of the participants were employed full-time, accounting for 56.7% (n = 17), while part-time employees made up 43.3% (n = 13). In terms of work position, mid-level employees were the most represented at 43.3% (n = 13), followed by entry-level at 33.3% (n = 10), and senior-level at 20% (n = 6). Only one participant was in a managerial role, constituting 3.3% of the sample. Regarding work schedules, 53.3% (n = 16) worked full-time, 36.7% (n = 11) part-time, and 10% (n = 3) had flexible hours. The years of employment were fairly evenly distributed, with 30% (n = 9) having 4-6 years and another 30% (n = 9) having 7-10 years of employment. Remote work was less common, with 46.7% (n = 14) working in-office and only 10% (n = 3) working fully remote. Most participants had a short commute, 43.3% (n = 13), and 70% (n = 21) reported stable job security. Table 9 shows details.

Table 9

Employment Profile of the Study Population

Characteristic	*f*	%
Employment Status:		
Employed full-time	17	56.7
Employed part-time	13	43.3
Work Position:		
Entry-level	10	33.3
Mid-level	13	43.3
Senior-level	6	20.0
Managerial	1	3.3
Work Schedule:		
Full-time	16	53.3
Part-time	11	36.7
Flexible hours	3	10.0
Years of Employment:		
Less than 1 year	2	6.7
1-3 years	6	20.0
4-6 years	9	30.0
7-10 years	9	30.0
More than 10 years	4	13.3
Remote Work:		
Fully remote	3	10.0
Hybrid (mix of remote and in-office)	13	43.3
In-office	14	46.7
Commute:		
Short (less than 30 minutes)	13	43.3
Moderate (30 minutes to 1 hour)	8	26.7
Long (more than 1 hour)	2	6.7

Remote/No commute	7	23.3
Job Security:		
Stable	21	70.0
Uncertain	9	30.0

The study also explored the mental health profile of the 30 participants, focusing on their history of mental health treatment, symptoms of burnout, coping mechanisms, access to mental health resources at work, training on mental health awareness, and the frequency of mental health conversations at work. A minority of participants, 13.3% (n = 4), reported a history of mental health treatment, while the majority, 86.7% (n = 26), had not sought treatment. Symptoms of burnout were prevalent, with emotional exhaustion reported by 18.0% (n = 23), reduced performance by 17.2% (n = 22), and sleep disturbances by 16.4% (n = 21). Coping mechanisms varied, with hobbies being the most common at 21.3% (n = 19), followed by exercise and talking to friends/family, each at 16.9% (n = 15). Access to mental health resources at work was limited; only 13.3% (n = 4) reported well-promoted resources, while 46.7% (n = 14) indicated resources were available but not well-promoted. Regarding training on mental health awareness, 56.7% (n = 17) had not received but were interested in such training. Conversations about mental health at work were reported as rare by 40.0% (n = 12) of the participants. Table 10 shows details.

Table 10

Mental Health Profile of the Study Population

Characteristic	*f*	%
History of Mental Health Treatment:		
Yes	4	13.3
No	26	86.7
Burnout Symptoms:		
Emotional exhaustion	23	18.0
Physical fatigue	19	14.8
Reduced performance	22	17.2
Detachment from work	14	10.9
Cynicism	17	13.3
Sleep disturbances	21	16.4
Other	12	9.4
Coping Mechanisms:		
Exercise	15	16.9
Meditation	6	6.7
Talking to friends/family	15	16.9
Seeking professional help	9	10.1
Hobbies	19	21.3
Breathing techniques	10	11.2
Other	15	16.9
Access to Mental Health Resources at Work:		
Yes, available and well-promoted	4	13.3
Yes, available but not well-promoted	14	46.7
Limited access	8	26.7
No access	4	13.3
Training on Mental Health Awareness:		
Received and found it helpful	5	16.7

Received but not helpful	5	16.7
Not received but interested	17	56.7
Not interested	3	10.0
Frequency of Mental Health Conversations at Work:		
Open and frequent	9	30.0
Occasional	9	30.0
Rarely	12	40.0

The study also examined workplace characteristics among the 30 participants, revealing a diverse range of industries, with Media/Journalism (23.3%) and Finance/Accounting (16.7%) being the most represented. The workplace environment was predominantly described as stressful (36.7%) and competitive (30.0%). A majority of participants reported a heavy workload (53.3%), with tight deadlines (16.8%) and unclear expectations (17.6%) being the most common work-related stressors. Job satisfaction was generally moderate, with 40% of participants reporting being satisfied and 30% being neutral. The support system at work was primarily characterized by supportive colleagues (60%), while 16.7% reported a lack of support. The impact of work on personal life was mostly moderate (53.3%) to high (40%). When it came to work-related goals, skill development was the most common aim (33.3%), followed by advancement (26.7%). Table 11 shows details.

Table 11

Workplace Characteristics of the Study Population

Characteristic	*f*	%
Industry:		
Finance/Accounting	5	16.7
Consultancy	1	3.3
Medical/Healthcare	3	10.0
Engineering/Technology	3	10.0
Media/Journalism	7	23.3
Legal	1	3.3
Management	2	6.7
Freelance	5	16.7
Sales/Marketing	2	6.7
Education	1	3.3
Workplace Environment:		
Supportive	7	23.3
Stressful	11	36.7
Collaborative	3	10.0
Competitive	9	30.0
Workload:		
Manageable	9	30.0
Heavy	16	53.3
Overwhelming	5	16.7
Work-Related Stressors:		
High workload	20	16.0
Tight deadlines	21	16.8
Lack of work-life balance	12	9.6
Poor communication	19	15.2
Unclear expectations	22	17.6

Lack of recognition	14	11.2
Conflict with colleagues	17	13.6
Job Satisfaction:		
Very Satisfied	2	6.7
Satisfied	12	40.0
Neutral	9	30.0
Unsatisfied	7	23.3
Support System at Work:		
Supportive colleagues	18	60.0
Supportive supervisor	7	23.3
Lack of support	5	16.7
Impact of Work on Personal Life:		
Minimal	2	6.7
Moderate	16	53.3
High	12	40.0
Work-Related Goals:		
Advancement	8	26.7
Skill development	10	33.3
Maintaining status quo	7	23.3
Transitioning to a different field	5	16.7

The study aimed to assess the impact of a Behavioral Activation-based Digital Mental Health Intervention (BA-DMHI) on various lifestyle factors among 30 participants. Notable changes were observed in sleep patterns, with the percentage of participants getting more than 8 hours of sleep increasing from 26.7% to 53.3% post-intervention. Physical activity also saw a significant shift, with those engaging in activity more than 4 times a week rising from 0% to 30%. Dietary habits improved as well, with the percentage of participants adhering to a diet strictly comprising fruits, vegetables, and whole grains increasing from 0% to 20%. Substance use saw a decrease in daily usage from 33.3% to 23.3%. Social engagement increased, with 40% reporting daily social activities post-intervention compared to 20% before. Stress levels showed a remarkable change, with the percentage of participants who "always feel stressed" dropping from 30% to 0%. Time spent outdoors daily increased from 10% to 50%, and the practice of mindfulness or meditation increased notably as well. Work-life balance improved, with those rating it as "good" or "excellent" increasing from 56.7% to 76.6%. Screen time reduced for those spending more than 6 hours a day from 33.3% to 26.7%. Hydration improved, with those drinking more than 8 glasses of water a day increasing from 0% to 26.7%. Table 12 shows details.

Table 12

Lifestyle Factors before and after Behavioral Activation-based Digital Mental Health Intervention

Lifestyle Factors	Before		After	
	f	%	*f*	%
Sleep: How many hours do you sleep each night on average?				
Less than 5 hours	0	0.0	0	0.0
5-6 hours	9	30.0	2	6.7
7-8 hours	13	43.3	12	40.0
More than 8 hours	8	26.7	16	53.3
Physical Activity: How often do you engage in physical activity each week?				
Rarely or never	6	20.0	0	0.0
1-2 times	14	46.7	7	23.3
3-4 times	10	33.3	14	46.7
More than 4 times	0	0.0	9	30.0
Dietary Habits: How would you describe your typical diet?				
High in processed foods, sugary drinks, and unhealthy fats	9	30.0	5	16.7
Balanced with some fruits, vegetables, and whole grains	12	40.0	9	30.0
Mostly fruits, vegetables, and whole grains	9	30.0	10	33.3
Strictly fruits, vegetables, and whole grains	0	0.0	6	20.0
Substance Use: How often do you smoke or drink alcohol?				
I don't smoke or drink	9	30.0	9	30.0
Occasionally (few times a month)	6	20.0	8	26.7
Frequently (few times a week)	5	16.7	6	20.0
Daily	10	33.3	7	23.3
Social Relationships: How often do you engage in social activities?				
Rarely or never	3	10.0	0	0.0
Occasionally (few times a month)	10	33.3	4	13.3

Lifestyle Factors	Before		After	
	f	%	*f*	%
Frequently (few times a week)	11	36.7	14	46.7
Daily	6	20.0	12	40.0
Stress Levels: How would you describe your stress levels?				
Rarely feel stressed	2	6.7	2	6.7
Occasionally feel stressed	6	20.0	15	50.0
Frequently feel stressed	13	43.3	13	43.3
Always feel stressed	9	30.0	0	0.0
Time Spent Outdoors: How often do you spend time outdoors?				
Rarely or never	6	20.0	0	0.0
Occasionally (few times a month)	9	30.0	6	20.0
Frequently (few times a week)	12	40.0	9	30.0
Daily	3	10.0	15	50.0
Mindfulness and Meditation: How often do you practice mindfulness or meditation?				
Never	7	23.3	0	0.0
Occasionally (few times a month)	11	36.7	7	23.3
Frequently (few times a week)	9	30.0	14	46.7
Daily	3	20.0	9	30.0
Work-Life Balance: How would you rate your work-life balance?				
Poor	6	20.0	0	0.0
Average	7	23.3	7	23.3
Good	9	30.0	13	43.3
Excellent	8	26.7	10	33.3
Screen Time: How many hours a day do you typically spend in front of a screen?				
Less than 2 hours	2	6.7	2	6.7
2-4 hours	6	20.0	11	36.7
4-6 hours	12	40.0	9	30.0
More than 6 hours	10	33.3	8	26.7

Lifestyle Factors	Before		After	
	f	%	*f*	%
Hydration: How many glasses of water do you drink in a day on average?				
Less than 4 glasses	6	20.0	1	3.3
4-6 glasses	9	30.0	5	16.7
6-8 glasses	15	50.0	16	53.3
More than 8 glasses	0	0.0	8	26.7

Note. Recommended: Sleep = 7-8 Hours; Physical Activity = More than 4 times; Dietary Habits = Mostly fruits, vegetables, and whole grains; Substance Use = I don't smoke or drink; Social Relationships = Frequently (few times a week), Daily; Stress Levels = Rarely feel stressed; Time Spent Outdoors = Daily; Mindfulness and Meditation = Frequently (few times a week); Work-Life Balance = Good; Screen Time = 2-4 Hours; Hydration = More than 8 glasses

The psychometric properties of the major scales used before the intervention are as follows: The Workplace Stress Scale (WPS) had high reliability with a Cronbach's alpha of .97, a mean score of 18.00, and a standard deviation of 6.66. The actual range of scores was 9-29, with a potential range of 8-40. The skewness and kurtosis were 0.11 and 1.40, respectively. The Depression Scale (Dep) had a Cronbach's alpha of .77, a mean of 7.36, and a standard deviation of 3.04, with scores ranging from 0-10 (potential range 0-21). The skewness and kurtosis were -1.28 and 1.26, respectively. The Anxiety Scale (Anx) had a lower reliability with a Cronbach's alpha of .60, a mean of 7.30, and a standard deviation of 2.61. The actual range of scores was 0-11, with a potential range of 0-21. The skewness and kurtosis were -1.24 and 2.36, respectively. Table 13 shows details.

Table 13

Psychometric Properties of the Study Major Scales before Intervention

					Range			
Scale	k	α	M	SD	Actual	Potential	Skew	Kurt
WPS	8	.97	18.00	6.66	9-29	8-40	0.11	1.40
Dep	7	.77	7.36	3.04	0-10	0-21	-1.28	1.26
Anx	7	.60	7.30	2.61	0-11	0-21	-1.24	2.36

Note. WPS = Workplace Stress Scale; Dep = Depression; Anx = Anxiety; k = Number of Items; Skew = Skewness; Kurt = Kurtosis

The psychometric properties of the major scales used after the intervention, notable changes were observed in the psychometric properties of the major scales. The Workplace Stress Scale (WPS) showed a decrease in mean score from 18.00 to 10.13, with a standard deviation of 5.41, and a Cronbach's alpha of .92. The Depression Scale also showed a significant reduction in mean score from 7.36 to 2.96, with a standard deviation of 2.28 and a Cronbach's alpha of .80. The Anxiety Scale had a mean score of 3.07, a standard deviation of 2.52, and a Cronbach's alpha of .87. A new scale, the Client Satisfaction Questionnaire (CSQ), was introduced post-intervention with a mean score of 23.43, a standard deviation of 6.61, and a Cronbach's alpha of .70. Table 14 shows details.

Table 14

Psychometric Properties of the Study Major Scales after Intervention

					Range			
Scale	k	α	M	SD	Actual	Potential	Skew	Kurt
WPS	8	.92	10.13	5.41	4-21	8-40	0.34	-1.19
Dep	7	.80	2.96	2.28	0-7	0-21	0.34	-1.16
Anx	7	.87	3.07	2.52	0-9	0-21	0.73	-0.17
CSQ	8	.70	23.43	6.61	15-31	8-40	-0.91	1.10

Note. WPS = Workplace Stress Scale; Dep = Depression; Anx = Anxiety; CSQ = Client Satisfaction Questionnaire; k = Number of Items; Skew = Skewness; Kurt = Kurtosis

The primary objective of this study was to explore the mental health experiences of employees and assess the effectiveness of a Behavioral Activation-based Digital Mental Health Intervention. The intervention demonstrated significant improvements in key psychometric variables. Paired t-tests revealed substantial mean differences before and after the intervention for Workplace Stress Scale (WPS), Depression (Dep), and Anxiety (Anx). Specifically, the mean score for WPS decreased from 18.00 (SD = 6.66) to 10.13 (SD = 5.40), t(df) = 18.98, $p < .001$, Cohen's d = 2.27. Similarly, the mean score for Depression reduced from 7.36 (SD = 3.06) to 2.97 (SD = 2.28), t(df) = 12.31, $p < .001$, Cohen's d = 1.95. The Anxiety mean score also declined from 7.30 (SD = 2.61) to 3.07 (SD = 2.52), t(df) = 13.36, $p < .001$, Cohen's d = 1.74.

These results indicate that the intervention was highly effective in reducing workplace stress, depression, and anxiety, with large effect sizes as evidenced by Cohen's d values. The findings are statistically significant and suggest meaningful clinical implications. However, the study's limitations include a small sample size and lack of a control group, warranting further research for validation (see Table 15).

Table 15

Mean differences based on Before and After Intervention In terms of Major Variables

	Before Intervention (n = 30)		After Intervention (n = 26)				
Variable	M	SD	M	SD	*t*(29)	p	Cohen's d
WPS	18.00	6.66	10.13	5.40	18.98	<.001	2.27
Dep	7.36	3.06	2.97	2.28	12.31	<.001	1.95
Anx	7.30	2.61	3.07	2.52	13.36	<.001	1.74

Note. WPS = Workplace Stress Scale; Dep = Depression; Anx = Anxiety

Chapter IV

DISCUSSION

Study 2:

The primary objective of this study was to explore the mental health experiences of employees and assess the effectiveness of a Behavioral Activation-based Digital Mental Health Intervention (BA-DMHI) through the BeBright smartphone application. The results were unequivocal in demonstrating significant improvements in key psychometric variables related to workplace stress, depression, and anxiety. The findings of this study are in harmony with a growing body of literature that underscores the effectiveness of digital mental health interventions in the workplace. For instance, a meta-analysis by Firth et al. (2017) found that smartphone-based interventions could significantly reduce depressive symptoms. Similarly, Torous et al. (2018) emphasized the potential of digital tools in enhancing mental health outcomes, particularly in reducing the burden of mental illness.

However, the unique contribution of this study lies in its focus on a Behavioral Activation-based Digital Mental Health Intervention (BA-DMHI) through the BeBright smartphone application. While previous studies have often employed generic digital interventions, this study utilized a specific, evidence-based behavioral activation approach. This is particularly noteworthy because behavioral activation has been identified as an effective treatment for depression and anxiety (Cuijpers et al., 2013; Mazzucchelli et al., 2009).

Moreover, this study goes beyond merely measuring symptom reduction. It incorporates a comprehensive set of psychometric scales, including Workplace Stress Scale (WPS), Depression (Dep), and Anxiety (Anx), to provide a multi-dimensional view of mental health. This approach allows for a more nuanced understanding of how the intervention

impacts various facets of mental well-being, from stress and mood disorders to lifestyle factors like sleep and physical activity. This multi-dimensional approach fills a gap in the existing literature, which often focuses on single outcome measures (Kazdin & Blase, 2011).

Additionally, the study also contributes to the literature by examining the intervention's impact on lifestyle factors, such as sleep, physical activity, and dietary habits. These factors are often overlooked in mental health research but are crucial for holistic well-being (Walker et al., 2018). By showing significant improvements in these areas, the study suggests that digital interventions like BeBright can have a broader impact on overall health and well-being, not just symptom reduction.

In summary, this study not only corroborates existing research but also extends it by offering a more comprehensive and nuanced understanding of the effectiveness of digital mental health interventions in the workplace. It thereby provides valuable insights for both researchers and practitioners in the field of occupational mental health. The BeBright app demonstrated significant potential in improving mental health among employees, particularly in reducing workplace stress, depression, and anxiety. These findings not only add to the existing literature but also pave the way for more integrated approaches to workplace mental health interventions.

The present study also aimed to assess the impact of a Behavioral Activation-based Digital Mental Health Intervention (BA-DMHI) through a smartphone application named BeBright on various lifestyle factors among 30 workplace employees. The results revealed significant improvements across multiple lifestyle variables, corroborating the growing body of literature that underscores the efficacy of digital interventions in improving mental health and lifestyle factors (Firth et al., 2017; Torous et al., 2018). One of the most striking findings was the substantial improvement in sleep patterns. The percentage of participants getting

more than 8 hours of sleep increased from 26.7% to 53.3% post-intervention. This is particularly noteworthy given that poor sleep has been linked to decreased productivity and increased mental health issues in the workplace (Litwiller et al., 2017). Similarly, physical activity saw a significant increase, aligning with previous research that highlights the role of physical activity in reducing workplace stress (Conn et al., 2009).

Dietary habits also improved, which is consistent with studies showing that a balanced diet can positively impact mental well-being (Jacka et al., 2017). Substance use saw a decrease, echoing findings that digital interventions can be effective in substance abuse treatment (Marsch et al., 2014). Furthermore, the increase in social engagement and the remarkable decrease in stress levels align well with research emphasizing the importance of social support and stress management in workplace well-being (Reeves et al., 2015). The unique contribution of this study lies in its focus on a comprehensive range of lifestyle factors, from sleep and diet to social engagement and stress levels, within the context of the workplace. Previous research has often been siloed, focusing on individual aspects like stress or physical activity (Robertson et al., 2015). Our study, however, provides a more holistic view, suggesting that digital interventions like BeBright can serve as a one-stop solution for multiple issues affecting workplace mental health.

The BeBright app demonstrated significant potential in improving a wide array of lifestyle factors that are intricately linked with mental health in the workplace. These findings not only add to the existing literature but also pave the way for more integrated approaches to workplace mental health interventions.

Limitations

While this study offers valuable insights into the BeBright program's adaptation and potential benefits, several limitations require consideration:

Sample Size and Generalizability: The small sample size (n=30) in Study 2 limits findings' generalizability to the broader workforce. Future research needs a larger, more diverse sample to confirm positive trends and ensure effectiveness across demographics and workplaces.

Study Design and Causality: Study 2's reliance on self-reported measures and pre-post design prevents establishing a causal link between BeBright and observed improvements. The lack of a control group leaves room for other factors influencing positive outcomes.

Focus and Scope: The study assessed sleep, physical activity, diet, stress, depression, and anxiety, but not other vital mental health aspects like self-efficacy, emotional regulation, or social functioning. Future studies should explore a broader range of outcomes.

Short-Term Follow-up: The study only assessed participants immediately after the intervention. Long-term follow-up is crucial to understand the program's sustainability and long-term impact on mental health and well-being.

Cultural Representation: Sampling limitations in Study 1 might lead to an adaptation framework that doesn't fully address the diverse cultural needs of a global workforce. Further research with broader cultural representation is needed.

Cost-Effectiveness Analysis: This study lacked a cost-effectiveness analysis of implementing BeBright in workplaces. This is crucial for wider adoption and scalability.

Addressing these limitations through future research with larger, more diverse samples, controlled designs, comprehensive outcome measures, long-term follow-up, and

cost-effectiveness analysis will strengthen the BeBright program's potential as a valuable tool for workplace mental health.

Implications

This study holds significant implications across various domains, including:

Social Implications:

Workplace mental health promotion. The findings support the BeBright program's potential as a valuable tool for organizations to proactively address and improve employee mental well-being. This could contribute to a more positive and productive work environment, leading to reduced absenteeism, presenteeism, and overall employee turnover.

Mental health awareness and stigma reduction. By demonstrating the effectiveness of BA-DMHIs in the workplace, this study can contribute to raising awareness about mental health issues and potentially reducing the stigma associated with seeking help. This could encourage individuals to prioritize their mental well-being and access appropriate support.

Clinical Implications

Expanding the scope of BA-DMHIs. The study's findings suggest that BA-DMHIs like BeBright can be effectively adapted and implemented in diverse workplace settings. This expands the potential reach and application of these interventions, offering a readily accessible and scalable approach to improving mental health outcomes.

Development of culturally sensitive interventions. The framework developed through the study's qualitative component provides valuable insights for tailoring BA-DMHIs to address the specific needs and cultural contexts of diverse populations. This can ensure the interventions' effectiveness and reach a wider range of individuals.

Digital Implications

Growth of accessible mental health interventions. The study highlights the potential of digital platforms in delivering effective and accessible mental health interventions, particularly in overcoming geographical and resource limitations. This paves the way for further development and integration of BA-DMHIs into existing digital health ecosystems.

Importance of user-centered design. The study underscores the importance of involving both mental health professionals and target users in the development and adaptation of digital interventions. This user-centered approach ensures the interventions are culturally relevant, engaging, and cater to the specific needs of the population they aim to serve.

These are just some potential implications of this study. Further research and exploration can delve deeper into these areas and identify additional implications relevant to specific stakeholders or contexts.

Conclusion

This thesis has addressed the pressing need for effective interventions to tackle the rising prevalence of mental health issues in the workplace. Specifically, we have investigated the adaptability and effectiveness of the Behavioral Activation-based Digital Mental Health Intervention (BA-DMHI), exemplified by the BeBright program, across diverse settings.

Our aim was to explore perspectives from mental health professionals, workplace employees, and other stakeholders regarding the development, adaptation, and delivery of the BeBright program. Through two studies, we delved into the relevancy, cultural appropriateness, feasibility, and acceptability of an App-based Behavioral Activation (BA)

intervention in workplace settings. Additionally, we identified barriers and facilitators related to integrating this adapted BA-based intervention into workplaces and explored the potential for conducting large-scale clinical trials on the BA-DMHI in the future.

Study 1 provided a comprehensive framework for implementing BA-DMHI, highlighting workplace-based, culture-based, and religion-based activities. Study 2, involving 30 workplace employees, demonstrated significant improvements in sleep patterns, physical activity, dietary habits, and stress levels post-intervention. Moreover, significant reductions were observed in Workplace Stress Scale, Depression, and Anxiety scores, indicating the intervention's effectiveness.

Overall, our findings suggest that the BeBright program, as a BA-DMHI, offers a feasible and effective approach for improving mental health in the workplace. Insights from both mental health professionals and employees have contributed to a multi-faceted framework for the adaptation and content development of BA-DMHI, ensuring its cultural and contextual relevance. Future research endeavors should focus on larger, more diverse samples to validate these promising findings. Incorporating the BeBright program, as a culturally and contextually relevant BA-DMHI, holds significant potential for enhancing workplace mental health, emphasizing the importance of tailored interventions in diverse organizational settings.

REFERENCES

Andersson, G., Cuijpers, P., Carlbring, P., Riper, H., & Hedman, E. (2014). Guided Internet-based vs. face-to-face cognitive behavior therapy for psychiatric and somatic disorders: a systematic review and meta-analysis. *World Psychiatry, 13*(3), 288-295.

Attkisson, C. C., & Greenfield, T. K. (2004). *The UCSF Client Satisfaction Scales: I. The Client Satisfaction Questionnaire-8.* In M. E. Maruish (Ed.), *The use of psychological testing for treatment planning and outcomes assessment: Instruments for adults* (p. 799–811). Lawrence Erlbaum Associates Publishers.

Bailey, T., Dollard, M., & Richards, P. (2015). The role of psychological well-being in positive organizational behaviors. *Work & Stress*, 29(4), 365-381.

Bakker, A. B., & Demerouti, E. (2017). Job demands-resources theory: Taking stock and looking forward. Journal of Occupational Health Psychology, 22(3), 273-285.

Barak, A., Hen, L., Boniel-Nissim, M., & Shapira, N. (2008). A comprehensive review and a meta-analysis of the effectiveness of internet-based psychotherapeutic interventions. *Journal of Technology in Human Services, 26*(2-4), 109-160.

Bartlett, L., Lovell, P., Otahal, P., & Sanderson, K. (2017). Acceptability, feasibility, and efficacy of a workplace mindfulness program for public sector employees: a pilot randomized controlled trial with informant reports. *Mindfulness*, *8*(3), 639-654. https://doi.org/10.1007/s12671-016-0643-4

Benach, N. (2017). Nuevos espacios de consumo y construcción de imagen de la ciudad en Barcelona. *Estudios geográficos*, *61*(238), 189-205. https://doi.org/10.3989/egeogr.2000.i238.526

Bernal, G., Jiménez-Chafey, M. I., & Domenech Rodríguez, M. M. (2009). Cultural adaptation of treatments: A resource for considering culture in evidence-based practice. *Professional Psychology: Research and Practice, 40*(4), 361-368.

Bernal, G., Jiménez-Chafey, M. I., & Domenech Rodríguez, M. M. (2009). Cultural adaptation of treatments: A resource for considering culture in evidence-based practice. *Professional Psychology: Research and Practice*, *40*(4), 361. https://doi.org/10.1037/a0016401

Biron, C., & Karanika-Murray, M. (2013). Process evaluation for organizational stress and well-being interventions: Implications for theory, method, and practice. International Journal of Stress Management, 20(3), 185-207.

Britton, B. K., & Tesser, A. (1991). Effects of time-management practices on college grades. Journal of Educational Psychology, 83(3), 405-410.

Brooks, E., Turvey, C., & Augusterfer, E. F. (2013). Provider barriers to telemental health: Obstacles overcome, obstacles remaining. *Telemedicine and e-Health, 19*(6), 433-437.

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. Journal of Personality and Social Psychology, 84(4), 822-848.

Cain, N., & Gradisar, M. (2010). Electronic media use and sleep in school-aged children and adolescents: A review. *Sleep medicine*, 11(8), 735-742.

Carlbring, P., Hägglund, M., Luthström, A., Dahlin, M., Kadowaki, Å., Vernmark, K., & Andersson, G. (2013). Internet-based behavioral activation and acceptance-based

treatment for depression: a randomized controlled trial. *Journal of Affective Disorders*, *148*(2-3), 331-337.

Carolan, S., Harris, P. R., & Cavanagh, K. (2017). Improving employee well-being and effectiveness: systematic review and meta-analysis of web-based psychological interventions delivered in the workplace. *Journal of medical Internet research*, *19*(7), e271. doi: 10.3390/ijerph17010255

Cavanagh, K., & Millings, A. (2013). (Inter) personal computing: the role of the therapeutic relationship in e-mental health. *Journal of Contemporary Psychotherapy*, *43*(4), 197-206. https://doi.org/10.1007/s10879-013-9242-z

Chatterjee, H. J., Camic, P. M., Lockyer, B., & Thomson, L. J. (2017). Non-clinical community interventions: A systematised review of social prescribing schemes. *Arts & Health, 10*(2), 97-123.

Choi, N. G., & DiNitto, D. M. (2013). The digital divide among low-income homebound older adults: Internet use patterns, eHealth literacy, and attitudes toward computer/Internet use. *Journal of Medical Internet Research, 15*(5), e93.

Chopra, P. (2009). Mental health and the workplace: issues for developing countries. *International Journal of Mental Health Systems*, *3*(1), 4. https://doi.org/10.1186/1752-4458-3-4

Chowdhary, N., Jotheeswaran, A. T., Nadkarni, A., Hollon, S. D., King, M., Jordans, M. J., ... & Patel, V. (2014). The methods and outcomes of cultural adaptations of psychological treatments for depressive disorders: a systematic review. *Psychological Medicine, 44*(6), 1131-1146.

Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. Psychological Bulletin, 98(2), 310-357.

Conn, V. S., Hafdahl, A. R., Cooper, P. S., Brown, L. M., & Lusk, S. L. (2009). Meta-analysis of workplace physical activity interventions. *American Journal of Preventive Medicine, 37*(4), 330-339.

Corrigan, P. (2004). How stigma interferes with mental health care. *American Psychologist*, 59(7), 614-625.

Corrigan, P. W., & Rao, D. (2012). On the self-stigma of mental illness: Stages, disclosure, and strategies for change. *The Canadian Journal of Psychiatry*, 57(8), 464-469.

Cuijpers, P., van Straten, A., & Warmerdam, L. (2011). Behavioral activation treatments of depression: A meta-analysis. *Clinical Psychology Review, 31*(3), 291-302.

Cuijpers, P., van Straten, A., & Warmerdam, L. (2013). Behavioral activation treatments of depression: A meta-analysis. *Clinical Psychology Review, 33*(2), 184-195.

Deady, M., Glozier, N., Calvo, R., Johnston, D., Mackinnon, A., Milne, D., ... & Harvey, S. B. (2022). Preventing depression using a smartphone app: a randomized controlled trial. Psychological medicine, 52(3), 457-466.

Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied psychology*, *86*(3), 499.

Dewa, C. S., Lesage, A., Goering, P., & Caveen, M. (2004). Nature and prevalence of mental illness in the workplace. *Healthcare Papers*, *5*(2), 12-25.

Dewa, C. S., Loong, D., Bonato, S., & Trojanowski, L. (2017). The relationship between physician burnout and quality of healthcare in terms of safety and acceptability: a systematic review. *BMJ open*, *7*(6), e015141.

Dewa, C. S., Thompson, A. H., & Jacobs, P. (2011). The association of treatment of depressive episodes and work productivity. *The Canadian Journal of Psychiatry*, *56*(12), 743-750. https://doi.org/10.1177/070674371105601206

Dimidjian, S., Hollon, S. D., Dobson, K. S., Schmaling, K. B., Kohlenberg, R. J., Addis, M. E., ... & Jacobson, N. S. (2006). Randomized trial of behavioral activation, cognitive therapy, and antidepressant medication in the acute treatment of adults with major depression. *Journal of Consulting and Clinical Psychology*, *74*(4), 658.

Dollard, M. F., & Bailey, T. S. (2014). The Australian Workplace Barometer: Psychosocial safety climate and working conditions in Australia. Samford Valley, Queensland: Australian Academic Press.

Donkin, L., Christensen, H., Naismith, S. L., Neal, B., Hickie, I. B., & Glozier, N. (2011). A systematic review of the impact of adherence on the effectiveness of e-therapies. *Journal of Medical Internet Research, 13*(3), e52.

Dutton, J. E., Workman, K. M., & Hardin, A. E. (2006). Compassion at work. Annual Review of Organizational Psychology and Organizational Behavior, 3(1), 235-256.

Dweck, C. S. (2006). Mindset: The new psychology of success. Random House.

Eisma, M. C., Boelen, P. A., van den Bout, J., Stroebe, W., Schut, H. A., Lancee, J., & Stroebe, M. S. (2015). Internet-based exposure and behavioral activation for complicated grief and rumination: a randomized controlled trial. *Behavior Therapy*, *46*(6), 729-748. https://doi.org/10.1016/j.beth.2015.05.007

Ekers, D., Richards, D., McMillan, D., Bland, J. M., & Gilbody, S. (2011). Behavioural activation delivered by the non-specialist: phase II randomised controlled trial. *The British Journal of Psychiatry*, *198*(1), 66-72. https://doi.org/10.1192/bjp.bp.110.079111

Elfering, A., Semmer, N. K., & Grebner, S. (2006). Work stress and patient safety. *Journal of occupational health psychology*, 11(2), 246.

Engel, G. L. (1977). The need for a new medical model: a challenge for biomedicine. *Science*, *196*(4286), 129-136.

Firth, J., Torous, J., Nicholas, J., Carney, R., Pratap, A., Rosenbaum, S., & Sarris, J. (2017). The efficacy of smartphone-based mental health interventions for depressive symptoms: a meta-analysis of randomized controlled trials. *World Psychiatry, 16*(3), 287-298.

Goetzel, R. Z., Henke, R. M., Tabrizi, M., Pelletier, K. R., Loeppke, R., Ballard, D. W., ... & Metz, R. D. (2014). Do workplace health promotion (wellness) programs work? *Journal of Occupational and Environmental Medicine, 56*(9), 927-934.

Goetzel, R. Z., Pei, X., Tabrizi, M. J., Henke, R. M., Kowlessar, N., Nelson, C. F., & Metz, R. D. (2014). Ten modifiable health risk factors are linked to more than one-fifth of employer-employee health care spending. Health Affairs, 31(11), 2474-2484.

Granic, I., Lobel, A., & Engels, R. C. (2014). The benefits of playing video games. *American Psychologist, 69*(1), 66-78.

Grant, M. S., Wiegand, D. L., & Dy, S. M. (2015). Asking questions of a palliative care nurse practitioner on a pancreatic cancer website. *Palliative & Supportive Care*, *13*(3), 787. https://doi.org/10.1017/S1478951514000637

Greenberg, P. E., Fournier, A. A., Sisitsky, T., Pike, C. T., & Kessler, R. C. (2015). The economic burden of adults with major depressive disorder in the United States (2005 and 2010). *The Journal of clinical psychiatry*, *76*(2), 5356.

Greenhaus, J. H., & Powell, G. N. (2006). When work and family are allies: A theory of work-family enrichment. Academy of Management Review, 31(1), 72-92.

Greenwood, K., Alford, K., O'Leary, I., Peters, E., Hardy, A., Cavanagh, K., Field, A. P., de Visser, R., Fowler, D., Papamichail, A., & Garety, P. (2018). The U&I study: study protocol for a feasibility randomised controlled trial of a pre-cognitive behavioural therapy digital 'informed choice'intervention to improve attitudes towards uptake and implementation of CBT for psychosis. *Trials*, *19*(1), 644. https://doi.org/10.1186/s13063-018-3023-7

Gros, D. F., Price, M., Strachan, M., Yuen, E. K., Milanak, M. E., & Acierno, R. (2012). Behavioral activation and therapeutic exposure: An investigation of relative symptom changes in PTSD and depression during the course of integrated behavioral activation, situational exposure, and imaginal exposure techniques. *Behavior Modification*, *36*(4), 580-599. https://doi.org/10.1177/0145445512448097

Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. Journal of Personality and Social Psychology, 85(2), 348-362.

Härmä, M. (2006). Workhours in relation to work stress, recovery and health. *Scandinavian journal of work, environment & health*, 502-514.

Hartig, T., Mitchell, R., de Vries, S., & Frumkin, H. (2014). Nature and health. Annual Review of Public Health, 35, 207-228.

Hassan, S., & Husain, W. (2020). The different levels of depression and anxiety among Pakistani professionals. *Anxiety*, *4*, 012-018. DOI: 10.29328/journal.ida.1001014

Health and Safety Executive. (2020, November 4). *Work-related stress, anxiety or depression statistics in Great Britain, 2020*. https://www.hse.gov.uk/statistics/causdis/stress.pdf

Hensler, I., Sveen, J., Cernvall, M., & Arnberg, F. K. (2022). Efficacy, benefits, and harms of a self-management APP in a Swedish Trauma-Exposed community sample (PTSD coach): randomized controlled trial. Journal of Medical Internet Research, 24(3), e31419.

Hilty, D. M., Ferrer, D. C., Parish, M. B., Johnston, B., Callahan, E. J., & Yellowlees, P. M. (2013). The effectiveness of telemental health: a 2013 review. *Telemedicine and e-Health, 19*(6), 444-454.

Hofmann, S. G., & Hay, A. C. (2018). Rethinking avoidance: Toward a balanced approach to avoidance in treating anxiety disorders. *Journal of Anxiety Disorders*, 55, 14-21.

Hofmann, S. G., Asnaani, A., Vonk, I. J., Sawyer, A. T., & Fang, A. (2012). The efficacy of cognitive behavioral therapy: A review of meta-analyses. *Cognitive Therapy and Research, 36*(5), 427-440.

Holtz, B., & Lauckner, C. (2012). Diabetes management via mobile phones: a systematic review. *Telemedicine and e-Health, 18*(3), 175-184.

House, J. S. (1981). Work stress and social support. Reading, MA: Addison-Wesley.

Houtman, I., Jettinghof, K., & Cedillo, L. (2007). *Raising awareness of stress at work in developing countires: a modern hazard in a traditional working environment: advice to employers and worker representatives*.

Hwang, W. C. (2009). The formative method for adapting psychotherapy (FMAP): A community-based developmental approach to culturally adapting

therapy. *Professional Psychology: Research and Practice*, *40*(4), 369. https://doi.org/10.1037/a0016240

Jacka, F. N., O'Neil, A., Opie, R., Itsiopoulos, C., Cotton, S., Mohebbi, M., ... & Berk, M. (2017). A randomised controlled trial of dietary improvement for adults with major depression (the 'SMILES' trial). *BMC Medicine, 15*(1), 1-13.

Jacobson, N. S., Dobson, K. S., Truax, P. A., Addis, M. E., Koerner, K., Gollan, J. K., ... & Prince, S. E. (1996). A component analysis of cognitive-behavioral treatment for depression. *Journal of Consulting and Clinical Psychology*, *64*(2), 295. https://doi.org/10.1037/0022-006X.64.2.295

Jacobson, N. S., Martell, C. R., & Dimidjian, S. (1996). Behavioral activation treatment for depression: Returning to contextual roots. *Clinical Psychology: Science and Practice, 3*(3), 255-270.

Jacobson, N. S., Martell, C. R., & Dimidjian, S. (2001). Behavioral activation treatment for depression: Returning to contextual roots. *Clinical Psychology: Science and Practice*, *8*(3), 255-270. https://doi.org/10.1093/clipsy.8.3.255

Jakupcak, M., Wagner, A., Paulson, A., Varra, A., & McFall, M. (2010). Behavioral activation as a primary care-based treatment for PTSD and depression among returning veterans. *Journal of Traumatic Stress*, *23*(4), 491-495. https://doi.org/10.1002/jts.20543

Julious, S. A. (2005). Sample size of 12 per group rule of thumb for a pilot study. *Pharmaceutical Statistics: The Journal of Applied Statistics in the Pharmaceutical Industry, 4*(4), 287-291. https://doi.org/10.1002/pst.185

Karasek, R. (1990). Stress, productivity, and the reconstruction of working life. *Health work*. https://cir.nii.ac.jp/crid/1573105974896297344

Kaspin, L. C., Gorman, K. M., & Miller, R. M. (2013). Systematic review of employer-sponsored wellness strategies and their economic and health-related outcomes. Population Health Management, 16(1), 14-21. https://doi.org/10.1089/pop.2012.0006

Kazdin, A. E. (2019). Technology-based interventions and reducing the burdens of mental illness: Perspectives and comments on the special series. *Cognitive and Behavioral Practice, 26*(3), 483-488.

Kazdin, A. E., & Blase, S. L. (2011). Rebooting psychotherapy research and practice to reduce the burden of mental illness. *Perspectives on Psychological Science, 6*(1), 21-37.

Kessler, R. C., Akiskal, H. S., Ames, M., Birnbaum, H., Greenberg, P., . A, R. M., ... & Wang, P. S. (2006). Prevalence and effects of mood disorders on work performance in a nationally representative sample of US workers. *American Journal of Psychiatry*, *163*(9), 1561-1568.

Khuwaja, A. K., Qureshi, R., & Azam, S. I. (2004). Prevalence and factors associated with anxiety and depression among family practitioners in Karachi, Pakistan. *Journal of Pakistan Medical Association*, *54*(2), 45.

Kinman, G., & Grant, L. (2011). Exploring stress resilience in trainee social workers: The role of emotional and social competencies. British Journal of Social Work, 41(2), 261-275.

Kirmayer, L. J., & Minas, H. (2023). The future of cultural psychiatry: an international perspective. *Medical Anthropology*, 135-143.

Kirsch, I., Deacon, B. J., Huedo-Medina, T. B., Scoboria, A., Moore, T. J., & Johnson, B. T. (2008). Initial severity and antidepressant benefits: A meta-analysis of data submitted to the Food and Drug Administration. *PLoS Med*, 5(2), e45.

Kitchener, B. A., & Jorm, A. F. (2004). Mental health first aid training for the public: evaluation of effects on knowledge, attitudes and helping behavior. *BMC psychiatry*, 4(1), 23.

Kitchener, B. A., & Jorm, A. F. (2008). Mental health first aid: An international programme for early intervention. Early Intervention in Psychiatry, 2(1), 55-61. https://doi.org/10.1111/j.1751-7893.2007.00056.x

Klein, G. (1998). Sources of Power: How People Make Decisions. MIT Press.

Koenig, H. G. (2012). Religion, spirituality, and health: The research and clinical implications. *ISRN Psychiatry, 2012*, 278730.

Kohl, L. F., Crutzen, R., & de Vries, N. K. (2013). Online prevention aimed at lifestyle behaviors: a systematic review of reviews. *Journal of Medical Internet Research*, *15*(7), e146. doi:10.2196/jmir.2665

Kuo, F. E., & Taylor, A. F. (2004). A potential natural treatment for attention-deficit/hyperactivity disorder: Evidence from a national study. American Journal of Public Health, 94(9), 1580-1586.

Kuyken, W., Hayes, R., Barrett, B., Byng, R., Dalgleish, T., Kessler, D., ... & Byford, S. (2015). Effectiveness and cost-effectiveness of mindfulness-based cognitive therapy compared with maintenance antidepressant treatment in the prevention of depressive relapse or recurrence (PREVENT): a randomised controlled trial. *The Lancet, 386*(9988), 63-73.

Lai, J., Ma, S., Wang, Y., et al. (2020). Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. *JAMA Network Open*, 3(3), e203976-e203976.

Lazarus, R. S., & Folkman, S. (1984). Stress, Appraisal, and Coping. New York: Springer Publishing Company.

Leiter, M. P., & Maslach, C. (2004). Areas of worklife: A structured approach to organizational predictors of job burnout. In P. L. Perrewé & D. C. Ganster (Eds.), Emotional and Physiological Processes and Positive Intervention Strategies (Research in Occupational Stress and Well-being, Vol. 3, pp. 91-134). Emerald Group Publishing Limited.

Lejuez, C. W., Hopko, D. R., & Hopko, S. D. (2001). A brief behavioral activation treatment for depression: Treatment manual. *Behavior Modification*, *25*(2), 255-286. https://doi.org/10.1177/0145445501252005

Leka, S., Griffiths, A., & Cox, T. (2003). *Work organisation and stress: systematic problem approaches for employers, managers, and trade union representatives*. World Health Organization.

Li, J., Xu, C., Wan, K., Liu, Y., & Liu, L. (2023). Mindfulness-based interventions to reduce anxiety among Chinese college students: A systematic review and meta-analysis. Frontiers in Psychology, 13, 1031398.

Liem, A., Garabiles, M. R., Pakingan, K. A., Chen, W., Lam, A. I. F., Burchert, S., & Hall, B. J. (2020). A digital mental health intervention to reduce depressive symptoms among overseas Filipino workers: protocol for a pilot hybrid type 1 effectiveness-implementation randomized controlled trial. *Implementation Science Communications*, *1*(1), 1-16.

Lim, D., Sanderson, K., & Andrews, G. (2000). Lost productivity among full-time workers with mental disorders. *The Journal of Mental Health Policy and Economics*, *3*(3), 139-146. https://doi.org/10.1002/mhp.93

Litwiller, B., Snyder, L. A., Taylor, W. D., & Steele, L. M. (2017). The relationship between sleep and work: A meta-analysis. *Journal of Applied Psychology, 102*(4), 682-699.

Loeppke, R., Taitel, M., Haufle, V., Parry, T., Kessler, R. C., & Jinnett, K. (2009). Health and productivity as a business strategy: a multiemployer study. *Journal of Occupational and Environmental Medicine*, 411-428.

Lomas, T., Medina, J. C., Ivtzan, I., Rupprecht, S., Hart, R., & Eiroa-Orosa, F. J. (2017). The impact of mindfulness on well-being and performance in the workplace: An inclusive systematic review of the empirical literature. *European Journal of Work and Organizational Psychology*, *26*(4), 492-513.

Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behaviour Research and Therapy, 33*(3), 335-343.

Luxton, D. D., McCann, R. A., Bush, N. E., Mishkind, M. C., & Reger, G. M. (2011). mHealth for mental health: Integrating smartphone technology in behavioral healthcare. *Professional Psychology: Research and Practice, 42*(6), 505.

Ly, K. H., Trüschel, A., Jarl, L., Magnusson, S., Windahl, T., Johansson, R., ... & Andersson, G. (2014). Behavioural activation versus mindfulness-based guided self-help treatment administered through a smartphone application: a randomised controlled trial. *BMJ Open*, *4*(1). http://dx.doi.org/10.1136/bmjopen-2013-003440

Lyubomirsky, S., Sheldon, K. M., & Schkade, D. (2005). Pursuing happiness: The architecture of sustainable change. *Review of General Psychology, 9*(2), 111-131.

Marmot, M. (2005). Social determinants of health inequalities. *The Lancet, 365*(9464), 1099-1104.

Marsch, L. A., Dallery, J., & Grabinski, M. J. (2014). Technology-based interventions for the treatment and recovery management of substance use disorders: A JSAT special issue. *Journal of Substance Abuse Treatment, 46*(1), 1-4.

Martell, C. R., Addis, M. E., & Jacobson, N. S. (2010). *Depression in Context: Strategies for Guided Action*. Norton & Company.

Martin, F., & Oliver, T. (2019). Behavioral activation for children and adolescents: a systematic review of progress and promise. European child & adolescent psychiatry, 28, 427-441.

Mazzucchelli, T., Kane, R., & Rees, C. (2009). Behavioral activation treatments for depression in adults: A meta-analysis and review. *Clinical Psychology: Science and Practice, 16*(4), 383-411.

McLean, C. P., Asnaani, A., Litz, B. T., & Hofmann, S. G. (2011). Gender differences in anxiety disorders: Prevalence, course of illness, comorbidity, and burden of illness. *Journal of psychiatric research*, 45(8), 1027-1035.

McMillan, B., Hickey, E., Patel, M. G., & Mitchell, C. (2016). Quality assessment of a sample of mobile app-based health behavior change interventions using a tool based on the National Institute of Health and Care Excellence behavior change guidance. *Patient Education and Counseling*, *99*(3), 429-435. https://doi.org/10.1016/j.pec.2015.10.023

Mohr, D. C., Cuijpers, P., & Lehman, K. (2011). Supportive accountability: A model for providing human support to enhance adherence to eHealth interventions. *Journal of Medical Internet Research, 13*(1), e30.

Mohr, D. C., Weingardt, K. R., Reddy, M., & Schueller, S. M. (2017). Three problems with current digital mental health research... and three things we can do about them. *Psychiatric Services, 68*(5), 427-429.

Mykletun, A., & Harvey, S. B. (2012). Prevention of mental disorders: a new era for workplace mental health. *Occupational and Environmental Medicine*, *69*(12), 868-869. http://dx.doi.org/10.1136/oemed-2012-100846

Neter, E., & Brainin, E. (2019). eHealth literacy: extending the digital divide to the realm of health information. *Journal of Medical Internet Research, 19*(1), e19.

Norman, D. A., & Draper, S. W. (1986). *User Centered System Design; New Perspectives on Human-Computer Interaction*. CRC Press.

Ozbay, F., Johnson, D. C., Dimoulas, E., Morgan III, C. A., Charney, D., & Southwick, S. (2007). Social support and resilience to stress: From neurobiology to clinical practice. Psychiatry, 4(5), 35-40.

Parker, C. P., & DeCotiis, T. A. (1983). Organizational determinants of job stress. Organizational Behavior and Human Performance, 32(2), 160-177.

Parmanto, B., Lewis, A. N., Graham, K. M., & Bertolet, M. H. (2016). Development of the Telehealth Usability Questionnaire (TUQ). *International Journal of Telerehabilitation, 8*(1), 3–10.

Patel, V., Saxena, S., Lund, C., Thornicroft, G., Baingana, F., Bolton, P., ... & UnÜtzer, J. (2018). The Lancet Commission on global mental health and sustainable development. *The lancet*, *392*(10157), 1553-1598.

Paul, K. I., & Moser, K. (2009). Unemployment impairs mental health: Meta-analyses. *Journal of vocational behavior*, 74(3), 264-282.

Pfeffer, J., & Williams, L. (2020). Mental health in the workplace: The coming revolution. *McKinsey Quarterly*, *8*, 1-9.

Pfefferbaum, B., & North, C. S. (2020). Mental health and the Covid-19 pandemic. *New England Journal of Medicine*.

Primack, B. A., Shensa, A., Sidani, J. E., Whaite, E. O., Lin, L., Rosen, D., ... & Qiana, L. (2017). Social media use and perceived social isolation among young adults in the US. *American Journal of Preventive Medicine*, 53(1), 1-8.

Pulakos, E. D., Dorsey, D. W., & White, S. S. (2006). Adaptability in the workplace: Selecting an adaptive workforce. In *Understanding adaptability: A prerequisite for effective performance within complex environments* (pp. 41-71). Emerald Group Publishing Limited.

Rassool, G. H. (2000). The crescent and Islam: Healing, nursing and the spiritual dimension. Some considerations towards an understanding of the Islamic perspectives on caring. *Journal of Advanced Nursing, 32*(6), 1476-1484.

Reeves, D., Blickem, C., Vassilev, I., Brooks, H., Kennedy, A., Richardson, G., & Rogers, A. (2015). The contribution of social networks to the health and self-management of patients with long-term conditions: a longitudinal study. *PloS One, 9*(6), e98340.

Rhoades, L., & Eisenberger, R. (2002). Perceived organizational support: A review of the literature. *Journal of Applied Psychology, 87*(4), 698–714. https://doi.org/10.1037/0021-9010.87.4.698

Rhodes, S., Richards, D. A., Ekers, D., McMillan, D., Byford, S., Farrand, P. A., ... & Wright, K. A. (2014). Cost and outcome of behavioural activation versus cognitive behaviour therapy for depression (COBRA): study protocol for a randomised controlled trial. *Trials*, *15*(1), 1-12. https://doi.org/10.1186/1745-6215-15-29

Richards, D. A., Ekers, D., McMillan, D., Taylor, R. S., Byford, S., Warren, F. C., ... & Finning, K. (2016). Cost and Outcome of Behavioural Activation versus Cognitive Behavioural Therapy for Depression (COBRA): a randomised, controlled, non-inferiority trial. *The Lancet*, *388*(10047), 871-880. DOI: 10.1016/S0140-6736(16)31140-0

Richardson, K. M., & Rothstein, H. R. (2008). Effects of occupational stress management intervention programs: A meta-analysis. *Journal of Occupational Health Psychology, 13*(1), 69-93.

Robertson, I. T., & Cooper, C. L. (2011). Full engagement: The integration of employee engagement and psychological well-being. Leadership & Organization Development Journal, 32(5), 428-441.

Robertson, I. T., Cooper, C. L., Sarkar, M., & Curran, T. (2015). Resilience training in the workplace from 2003 to 2014: A systematic review. *Journal of Occupational and Organizational Psychology, 88*(3), 533-562.

Rogers, C. R. (1951). *Client-centered therapy: Its current practice, implications, and theory*. Constable.

Russell, E., Lloyd-Houldey, A., Memon, A., & Yarker, J. (2018). Factors influencing uptake and use of a new health information app for young people. *Journal of Technology in Human Services*, *36*(4), 222-240. https://doi.org/10.1080/15228835.2018.1536911

Sanderson, K., & Andrews, G. (2006). Common mental disorders in the workforce: recent findings from descriptive and social epidemiology. *The Canadian Journal of Psychiatry*, *51*(2), 63-75. https://doi.org/10.1177/070674370605100202

Saras, H. (2018, May 15). Top 32 Powerful Work Stress Quotes That Will Take Out Your Stress. *Harish Saras: Live a Less Stressful Life*. https://www.harishsaras.com/stress-management/shocking-statistics-of-workplace-stress/#comments

Saras, H., (2018, February 7). Top 21 Major Causes of Stress in the Workplace. *Harish Saras: Live a Less Stressful Life*. https://www.harishsaras.com/stress-management/major-causes-of-stress-in-the-workplace/

Saxena, S., Thornicroft, G., Knapp, M., & Whiteford, H. (2007). Resources for mental health: scarcity, inequity, and inefficiency. *The lancet*, 370(9590), 878-889.

Schnall, P., Belkić, K., Landsbergis, P., & Baker, D. (2000). Why the workplace and cardiovascular disease?. *Occupational Medicine (Philadelphia, Pa.)*, *15*(1), 1-6.

Schueller, S. M., Neary, M., O'Loughlin, K., & Adkins, E. C. (2018). Discovery of and interest in health apps among those with mental health needs: survey and focus group study. *Journal of Medical Internet Research, 20*(6), e10141.

Scott, K. M., Lim, C., Al-Hamzawi, A., et al. (2016). Association of mental disorders with subsequent chronic physical conditions: world mental health surveys from 17 countries. *JAMA psychiatry*, 73(2), 150-158.

Seibert, S. E., Kraimer, M. L., & Liden, R. C. (2001). A social capital theory of career success. *Academy of management journal*, *44*(2), 219-237.

Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Boston, MA: Houghton Mifflin.

Simon, G. E. (2003). Social and economic burden of mood disorders. *Biological psychiatry*, 54(3), 208-215.

Soltan, M. R., Al-Hassanin, S. A., Soliman, S. S., & Gohar, S. F. (2020). Workplace-related stress among oncologists: Egyptian single-centered observational study. *Middle East Current Psychiatry*, *27*, 1-7. https://doi.org/10.1186/s43045-020-00026-z

Sonnentag, S., & Fritz, C. (2015). Recovery from job stress: The stressor-detachment model as an integrative framework. Journal of Organizational Behavior, 36(S1), S72-S103.

Strecher, V. (2007). Internet methods for delivering behavioral and health-related interventions (eHealth). *The Annual Review of Clinical Psychology*, *3*, 53-76. https://doi.org/10.1146/annurev.clinpsy.3.022806.091428

Taylor, W. C., King, K. E., Shegog, R., Paxton, R. J., Evans-Hudnall, G. L., Rempel, D. M., ... & Yancey, A. K. (2013). Booster Breaks in the workplace: participants' perspectives on health-promoting work breaks. *Health education research*, *28*(3), 414-425.

Tech Wire Asia. (2023, September). South Asia leads the world in employee engagement at 33%. Retrieved from https://techwireasia.com/09/2023/south-asia-leads-the-world-in-employee-engagement-at-33/#:~:text=However%2C%20they%20also%20reported%20that,high%20daily%20levels%20of%20anger.

The Work Place Stress Scale (WSS), 2001, The Marlin Company, North Haven, Connecticut and The American Institute of Stress, Yonkers, New York.

The World Bank (2020). Mobile cellular subscriptions (per 100 people). https://data.worldbank.org/indicator/IT.CEL.SETS.P2?most_recent_value_desc=true

Torous, J., & Roberts, L. W. (2017). Needed innovation in digital health and smartphone applications for mental health: transparency and trust. *JAMA psychiatry*, 74(5), 437-438.

Torous, J., Nicholas, J., Larsen, M. E., Firth, J., & Christensen, H. (2018). Clinical review of user engagement with mental health smartphone apps: evidence, theory and improvements. *Evidence-Based Mental Health, 21*(3), 116-119.

Trougakos, J. P., Beal, D. J., Green, S. G., & Weiss, H. M. (2015). Making the break count: An episodic examination of recovery activities, emotional experiences, and positive affective displays. Academy of Management Journal, 58(6), 1733-1758.

Umberson, D., & Montez, J. K. (2010). Social relationships and health: A flashpoint for health policy. Journal of Health and Social Behavior, 51(Suppl), S54-S66.

University of Exeter. (2016, July 22). Behavioral activation as effective as CBT for depression, at lower cost. *ScienceDaily*. Retrieved January 10, 2021 from www.sciencedaily.com/releases/2016/07/160722212245.htm

Van der Feltz-Cornelis, C. M., Shepherd, J., Gevaert, J., Van Aerden, K., Vanroelen, C., Borrega Cepa, O., ... Haro, J. M., & Olaya, B. (2023). Design and development of a digital intervention for workplace stress and mental health (EMPOWER). Internet Interventions, 34, 100689. https://doi.org/10.1016/j.invent.2023.100689.

Van Woerkom, M., & Meyers, M. C. (2015). My strengths count! Effects of a strengths-based psychological climate on positive affect and job performance. Human Resource Management, 54(1), 81-103.

Viswanath, B., & Chaturvedi, S. K. (2012). Cultural aspects of major mental disorders: a critical review from an Indian perspective. *Indian Journal of Psychological Medicine*, *34*(4), 306-312.

Walker, E. R., McGee, R. E., & Druss, B. G. (2018). Mortality in mental disorders and global disease burden implications: A systematic review and meta-analysis. *JAMA Psychiatry, 72*(4), 334-341.

Wang, K., Varma, D. S., & Prosperi, M. (2018). A systematic review of the effectiveness of mobile apps for monitoring and management of mental health symptoms or disorders. *Journal of psychiatric research*, *107*, 73-78.

Wang, P. S., Simon, G. E., Avorn, J., Azocar, F., Ludman, E. J., McCulloch, J., Petukhova, M. Z., & Kessler, R. C. (2007). Telephone screening, outreach, and care management for depressed workers and impact on clinical and work productivity outcomes: a randomized controlled trial. *JAMA*, *298*(12), 1401-1411. doi:10.1001/jama.298.12.1401

Wang, P. S., Simon, G., & Kessler, R. C. (2003). The economic burden of depression and the cost-effectiveness of treatment. *International Journal of Methods in Psychiatric Research*, *12*(1), 22-33. https://doi.org/10.1002/mpr.139

Wei, J., Xu, Y., & Mao, H. (2024). Mobile cognitive behavioral therapy for insomnia: analysis of factors affecting treatment prognosis. Scientific Reports, 14(1), 3086.

Williams, I. M., & Lewis, W. G. (2020). Stress in the workplace for healthcare professionals. *Physiological Reports*, *8*(13). doi: 10.14814/phy2.14496

Wood, W., & Neal, D. T. (2016). Healthy through habit: Interventions for initiating & maintaining health behavior change. Behavioral Science & Policy, 2(1), 71-83.

World Health Organization. (2017). *Depression and other common mental disorders: global health estimates* (No. WHO/MSD/MER/2017.2). World Health Organization.

World Health Organization. (2020). *Occupational health: Stress at the workplace*. https://www.who.int/news-room/q-a-detail/ccupational-health-stress-at-the-workplace

World Health Organization (WHO). http://americaninstituteofstress.org/wp-content/uploads/2011/08/2001Attitude-in-the-Workplace-Harris.pdf

World Health Organization. (2022). Mental health at work. https://www.who.int/news-room/fact-sheets/detail/mental-health-at-work

Wosik, J., Fudim, M., Cameron, B., Gellad, Z. F., Cho, A., Phinney, D., ... & Tcheng, J. (2020). Telehealth transformation: COVID-19 and the rise of virtual care. *Journal of the American Medical Informatics Association, 27*(6), 957-962.

Yardley, L., Morrison, L., Bradbury, K., & Muller, I. (2015). The person-based approach to intervention development: Application to digital health-related behavior change interventions. *Journal of Medical Internet Research, 17*(1), e30.

Zschucke, E., Gaudlitz, K., & Ströhle, A. (2013). Exercise and physical activity in mental disorders: clinical and experimental evidence. *Journal of preventive medicine and public health*, *46*(Suppl 1), S12.

Appendices

Appendix A: Depression, Anxiety and Stress Scale (DASS-21)

DASS21 *Name:* *Date:*

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0 Did not apply to me at all
1 Applied to me to some degree, or some of the time
2 Applied to me to a considerable degree, or a good part of time
3 Applied to me very much, or most of the time

1	I found it hard to wind down	0	1	2	3
2	I was aware of dryness of my mouth	0	1	2	3
3	I couldn't seem to experience any positive feeling at all	0	1	2	3
4	I experienced breathing difficulty (eg, excessively rapid breathing,breathlessness in the absence of physical exertion)	0	1	2	3
5	I found it difficult to work up the initiative to do things	0	1	2	3
6	I tended to over-react to situations	0	1	2	3
7	I experienced trembling (eg, in the hands)	0	1	2	3
8	I felt that I was using a lot of nervous energy	0	1	2	3
9	I was worried about situations in which I might panic and makea fool of myself	0	1	2	3
10	I felt that I had nothing to look forward to	0	1	2	3
11	I found myself getting agitated	0	1	2	3
12	I found it difficult to relax	0	1	2	3
13	I felt down-hearted and blue	0	1	2	3
14	I was intolerant of anything that kept me from getting on withwhat I was doing	0	1	2	3
15	I felt I was close to panic	0	1	2	3
16	I was unable to become enthusiastic about anything	0	1	2	3
17	I felt I wasn't worth much as a person	0	1	2	3
18	I felt that I was rather touchy	0	1	2	3
19	I was aware of the action of my heart in the absence of physicalexertion (eg, sense of heart rate increase,	0	1	2	3

	heart missing a beat)				
20	I felt scared without any good reason	0	1	2	3
21	I felt that life was meaningless	0	1	2	3

Appendix B: Workplace Stress Scale (WSS)

Directions for The Workplace Stress Scale™

Thinking about your current job, how often does each of the following statements describe how you feel?

	Never	Rarely	Sometimes	Often	Very Often
Conditions at work are unpleasant or sometimes even unsafe	1	2	3	4	5
I feel that my job is negatively affecting my physical or emotional well-being.	1	2	3	4	5
I have too much work to do an/or too many unreasonable deadlines.	1	2	3	4	5
I find it difficult to express my opinions or feelings about my job conditions to my superiors.	1	2	3	4	5
I feel that job pressures interfere with my family or personal life.	1	2	3	4	5
I feel that I have inadequate control or input over my work duties.	1	2	3	4	5
I receive inadequate recognition or rewards for good performance.	1	2	3	4	5
I am unable to fully utilize my skills and talents at work.	1	2	3	4	5

To calculate your score, add the numbers you answered to all of the 8 questions and see the interpretation below.

Interpreting the Scores on the Workplace Stress Scale™

- **Total Score of 15 or Below**: Relaxed and Generally Unstressed. Stress doesn't seem to be a significant concern for you.
- **Total Score Between 16 and 20**: Mild Stress Levels. Generally, you manage stress well, although you might experience challenging days occasionally. Consider yourself fortunate.
- **Total Score Between 21 and 25**: Moderate Stress. Certain aspects of your job may be stressful, but likely not more than what most people can handle. Focus on strategies to alleviate the most stressful elements.
- **Total Score Between 26 and 30**: High Stress. While you may still be managing, your work life could be quite challenging. You may have several areas with extreme stress levels. Consider seeking advice or counseling, as you might be in an unsuitable job or facing bad timing.

Total Score Between 31 and 40: Critical Stress Levels. The higher the score, the more concerning the situation. Professional help is strongly advised, particularly if your health is impacted. A job change, either within your current organization or to a new one, may also be necessary.

Appendix C: Client Satisfaction Questionnaire (CSQ-8, Version TMS-180S)
(Larsen et al., 1979)
Participant Instructions:
We value your feedback to enhance our services. Please share your honest opinions, whether they are positive or negative, by answering the following questions. Completing all questions is highly appreciated. Your comments and suggestions are also welcome. Thank you for your cooperation.

1. **Rate the Quality of Service You Received:**
    - Excellent (4)
    - Good (3)
    - Fair (2)
    - Poor (1)
2. **Was the Service What You Expected?**
    - Definitely not (1)
    - Not really (2)
    - Generally, yes (3)
    - Definitely yes (4)
3. **How Well Did Our Service Meet Your Needs?**
    - All of my needs were met (4)
    - Most of my needs were met (3)
    - Few of my needs were met (2)
    - None of my needs were met (1)
4. **Would You Recommend Our Service to a Friend in Need?**
    - Definitely not (1)
    - I don't think so (2)
    - I think so (3)
    - Definitely yes (4)
5. **Satisfaction with the Amount of Help Received:**
    - Quite dissatisfied (1)
    - Mildly dissatisfied or indifferent (2)
    - Mostly satisfied (3)
    - Very satisfied (4)
6. **Did Our Services Help You Address Your Issues More Effectively?**
    - They made things worse (1)
    - They didn't really help (2)
    - They helped somewhat (3)
    - They helped a great deal (4)
7. **Overall Satisfaction with the Service:**
    - Quite dissatisfied (1)
    - Mildly dissatisfied or indifferent (2)
    - Mostly satisfied (3)
    - Very satisfied (4)
8. **Would You Return to Our Service for Future Help?**
    - Definitely not (1)
    - I don't think so (2)
    - I think so (3)
    - Definitely yes (4)

Scoring:
Add up the scores for all the items. Items 2, 4, 5, and 8 are reverse-scored. The total score can range from 8 to 32, with higher scores indicating greater satisfaction with the service.

Appendix D: Sociodemographic Characteristics

Characteristic
Gender:
Male
Female
Age Range:
18-24
25-34
35-44
45-54
Ethnicity:
Punjabi
Sindhi
Pashtun (Pathan)
Baloch
Kashmiri
Gilgit-Baltistani
Education Level:
Some College or Associate's Degree
Bachelor's Degree
Master's Degree
Doctorate or Professional Degree
Relationship Status:
Single
Engaged
Married
Living Environment:
Urban
Suburban
Rural

Appendix E: Employment Profile

Characteristic
Employment Status:
Employed full-time
Employed part-time
Work Position:
Entry-level
Mid-level
Senior-level
Managerial
Work Schedule:
Full-time
Part-time
Flexible hours
Years of Employment:
Less than 1 year
1-3 years
4-6 years
7-10 years
More than 10 years
Remote Work:
Fully remote
Hybrid (mix of remote and in-office)
In-office
Commute:
Short (less than 30 minutes)
Moderate (30 minutes to 1 hour)
Long (more than 1 hour)
Remote/No commute
Job Security:
Stable
Uncertain

Appendix F: Mental Health Profile

Characteristic
History of Mental Health Treatment:
Yes
No
Burnout Symptoms:
Emotional exhaustion
Physical fatigue
Reduced performance
Detachment from work
Cynicism
Sleep disturbances
Other
Coping Mechanisms:
Exercise
Meditation
Talking to friends/family
Seeking professional help
Hobbies
Breathing techniques
Other
Access to Mental Health Resources at Work:
Yes, available and well-promoted
Yes, available but not well-promoted
Limited access
No access
Training on Mental Health Awareness:
Received and found it helpful
Received but not helpful
Not received but interested
Not interested
Frequency of Mental Health Conversations at Work:
Open and frequent
Occasional
Rarely

Appendix G: Workplace Profile

Characteristic
Industry:
Finance/Accounting
Consultancy
Medical/Healthcare
Engineering/Technology
Media/Journalism
Legal
Management
Freelance
Sales/Marketing
Education
Workplace Environment:
Supportive
Stressful
Collaborative
Competitive
Workload:
Manageable
Heavy
Overwhelming
Work-Related Stressors:
High workload
Tight deadlines
Lack of work-life balance
Poor communication
Unclear expectations
Lack of recognition
Conflict with colleagues
Job Satisfaction:
Very Satisfied
Satisfied
Neutral
Unsatisfied
Support System at Work:
Supportive colleagues
Supportive supervisor
Lack of support
Impact of Work on Personal Life:
Minimal
Moderate
High
Work-Related Goals:
Advancement
Skill development
Maintaining status quo
Transitioning to a different field

Appendix H: Work-related Stressors (Check boxes for multiple options)

Stressors	No	Yes
High Workloads		
Lack of Control		
Job Insecurity		
Conflicting Expectations		
Poor Work-life Balance		
Lack of Support		
Workplace Bullying or Harassment		
Poor Communication		
Career Stagnation		
Lack of Job Satisfaction		
Physical Work Environment		
Unrealistic Deadlines		
Role Ambiguity		
Personal Issues		
Technostress		

Appendix I: Lifestyle Factors

Here, you need to provide information about lifestyle factors that can impact your mental health, like sleep patterns, physical activity levels, and dietary habits.

Example: how many hours you sleep each night on average, how often you engage in physical activity, and what your typical diet looks like.

1. **Sleep**:
• How many hours do you sleep each night on average?
1. Less than 5 hours
2. 5-6 hours
3. 7-8 hours (Recommended)
4. More than 8 hours
2. **Physical Activity**:
• How often do you engage in physical activity each week?
1. Rarely or never
2. 1-2 times
3. 3-4 times
4. More than 4 times (Recommended)
3. **Dietary Habits**:
• How would you describe your typical diet?
1. High in processed foods, sugary drinks, and unhealthy fats
2. Balanced with some fruits, vegetables, and whole grains
3. Mostly fruits, vegetables, and whole grains (Recommended)
4. Strictly fruits, vegetables, and whole grains
4. **Substance Use**:
• How often do you smoke or drink alcohol?
1. I don't smoke or drink (Recommended)
2. Occasionally (few times a month)
3. Frequently (few times a week)
4. Daily
5. **Social Relationships**:
• How often do you engage in social activities?
1. Rarely or never
2. Occasionally (few times a month)
3. Frequently (few times a week) (Recommended)
4. Daily (Recommended)
6. **Stress Levels**:
• How would you describe your stress levels?
1. Rarely feel stressed (Recommended)
2. Occasionally feel stressed
3. Frequently feel stressed
4. Always feel stressed
7. **Time Spent Outdoors**:
• How often do you spend time outdoors?
1. Rarely or never
2. Occasionally (few times a month)
3. Frequently (few times a week)
4. Daily (Recommended)

8. **Mindfulness and Meditation**:
• How often do you practice mindfulness or meditation?
1. Never
2. Occasionally (few times a month)
3. Frequently (few times a week) (Recommended)
4. Daily
9. **Work-Life Balance**:
• How would you rate your work-life balance?
1. Poor
2. Average
3. Good (Recommended)
4. Excellent
10. **Screen Time**:
• How many hours a day do you typically spend in front of a screen?
1. Less than 2 hours
2. 2-4 hours (Recommended)
3. 4-6 hours
4. More than 6 hours
11. **Hydration**:
• How many glasses of water do you drink in a day on average?
1. Less than 4 glasses
2. 4-6 glasses
3. 6-8 glasses
4. More than 8 glasses (Recommended)

Activities Menu

1. Life Enrichment Activities

Animals	**Cook**	**Mind**
Pet an animal	Cook a meal for yourself	Daydream
Walk a dog	Cook a meal for someone else	Meditate
Ride a horse	Bake a cake / cookies	Pray
Volunteer at an animal shelter	Have a BBQ	Reflect
Go bird watching	Find a new recipe	Think
Listen to the birds	Organize a dinner party	Try relaxation exercises
Visit the zoo		Practice yoga
Self-care	**Write**	**Music**
Take a bath	Write a letter of complaint	Listen to music you like
Take a shower	Write a letter with compliments	Find some new music to listen to
Wash your hair	Write a letter to your politician	Go to a concert
Give yourself a facial	Write an angry letter	Turn on the radio
Trim your nails	Write a grateful letter	Make some music
Go for a massage	Write a 'thank you' card	Sing a song
Sunbathe (wear sunscreen!)	Write a journal / diary	Play an instrument
	Write your CV	Listen to a podcast
	Start writing a book	
Connect with people	**Clean**	**Try something new**
Contact a friend	Clean the house	Try a new food
Invite a friend to come over	Clean the yard	Take a walk in a new place
Be with friends	Clean the bathroom	Listen to some new music
Meet a friend for coffee	Clean the toilet	Watch a new TV show or movie
Make new friends	Clean your bedroom	Wear some new clothes
Join a new group	Clean the fridge	Read a new book
Join a political party	Clean the oven	Try a new class
Join a book club	Clean your shoes	Do something spontaneous
Join an exercise class	Do the washing up	Express yourself

Join a mother & baby group Ask someone out Send a message to a friend Write a letter to a friend Reconnect with an old friend	Fill / empty the dishwasher Do laundry Do some chores Organize your workspace Clean a cupboard	Watch the sunrise Watch the sunset
Shop Shop for groceries Shop for clothes Go to a sale Take things to a charity center	**Travel** Go for a ride in the car Take the bus somewhere Catch a train Plan a holiday	**Expression** Laugh Cry Sing Shout Scream
Nature Try some gardening Plant something Do some pruning Mow the lawn Pick flowers Buy flowers Go for a walk-in nature Swim in the sea Hike in the mountains Walk in the woods Sit in the sun Go to the park	**Be active** Go for a walk Go for a run Go for a swim Go hiking Go cycling Go to the gym Go bowling Go ice / roller skating Play golf / football / tennis Throw a frisbee Fly a kite Try a martial art	**Kindness** Help a friend/neighbor/stranger Volunteer at a charity Make gift for some one Try a random act of kindness Do someone a favor Teach somebody a skill Do something nice for someone Plan a surprise for someone Make a list of your good points Make a list of things or people you are grateful for
Read Read a favorite book Read a new book Read the newspaper Read your favorite website	**Watch** Go to the cinema Go to the theatre Watch a movie Watch a TV show Watch a YouTube video	**Mend** Repair something in the house Repair your bike / car / scooter Make something new Change a lightbulb Decorate a room

Schedule	Plan	Learn
Get up extra early	Set a goal	Learn something new
Stay up late	Create a budget	Learn a new skill
Sleep in late	Make a 5-year plan	Learn a new fact
Book a day off	Make a ‘to do’ list	Enrol in a class
Tick something off your to do list	Make a ‘bucket list	Go back to school
	Make a shopping list	Watch a tutorial video

Cultural Activities

Cultural Activities
1. Celebrate Eid-ul-Fitr
2. Host an Iftar dinner during Ramadan
3. Visit the Lahore Fort
4. Take part in a Qawwali music session
5. Wear traditional Pakistani attire, like Shalwar Kameez
6. Learn and perform traditional Pakistani folk dance
7. Celebrate Pakistan's Independence Day on August 14
8. Visit the Badshahi Mosque in Lahore
9. Enjoy Pakistani cuisine like Biryani and Nihari
10. Participate in a game of Cricket
11. Attend the famous Lahore Literature Festival
12. Explore Pakistani craftsmanship at a local bazaar
13. Celebrate the vibrant Basant Kite Festival
14. Experience Truck Art painting
15. Read works by famous Pakistani poets like Allama Iqbal
16. Attend a Sufi Shrine gathering
17. Visit historical sites on the Silk Road
18. Go to the annual Sindh Festival
19. Explore the rich culture of the Kalasha Valley
20. Join a Pakistani music class
21. Learn the Urdu language
22. Go on a food trail in Karachi
23. Watch a Pakistani Drama Serial
24. Join a local Pakistani community group
25. Invite friends for a traditional Pakistani tea (chai)
26. Experience a Pakistani wedding ceremony
27. Partake in the celebration of Nowruz (Persian New Year)
28. Learn about the history of Mohenjo-Daro
29. Reconnect with Pakistani culture through these activities

Spiritual Activities

Spiritual Activities
1. Engage in Salah (Prayer)
2. Recite from the Quran
3. Perform Dhikr (Remembrance of Allah)
4. Observe a Fast
5. Give to Charity
6. Embark on Hajj (Pilgrimage)
7. Partake in Umrah (Minor Pilgrimage)
8. Contribute Sadaqah (Voluntary Charity)
9. Pursue Islamic Knowledge
10. Experience Itikaf (Seclusion in the Mosque)
11. Practice Istighfar (Seeking Forgiveness)
12. Invoke through Dua (Supplication)
13. Commit to Tawbah (Repentance)
14. Participate in Taraweeh Prayers
15. Commit to Iʿtikāf (Seclusion and Retreat)
16. Invite a friend to join in prayer
17. Guide a friend through Quran recitation
18. Join a group for Dhikr
19. Support a friend through their fast
20. Co-ordinate a charity event
21. Share your Hajj experience with friends
22. Bring a friend along for Umrah
23. Give Sadaqah on behalf of a friend
24. Join an Islamic study group
25. Practice Itikaf with a group
26. Teach a friend the way of Istighfar
27. Share a heartfelt Dua with someone
28. Extend a hand in Tawbah
29. Pray Taraweeh with a group
30. Experience Iʿtikāf with others
31. Reconnect through spiritual activities

Workplace Related Activities

Here are some suggested activities for a behavioral activation based digital mental health intervention to address those workplace stressors:

High Workloads
• Make a priority task list each day
• Use time management techniques like pomodoro to work efficiently
• Ask for help when overloaded
• Practice saying "no" to non-essential tasks
• Taking regular short break
Lack of Control
• Identify areas you can control and focus energy there

• Propose solutions rather than just raising problems
• Volunteer for projects that interest you
• Request more decision-making power in your role
Job Insecurity
• Update your resume and LinkedIn profile
• Research jobs at other companies
• Take online courses to expand your skills
• Save money each month to build emergency fund
Conflicting Expectations
• Request clear priorities from manager
• Ask for feedback on which expectations are most important
• Negotiate deadlines or responsibilities if overloaded
• Loop in other stakeholders to align demands
Poor Work-life Balance
• Set boundaries on work hours and availability
• Block off designated personal time on calendar
• Leave work on time to attend family/social commitments
• Practice mindfulness to be present at home
Lack of Support
• Seek out mentors or allies at work
• Build relationships to create support system
• Ask manager for regular feedback and coaching
• Join employee resource groups for camaraderie
Workplace Bullying or Harassment
• Document all incidents and report to HR
• Consult counsellor or therapist for coping strategies
• Practice self-care and don't blame yourself
• Request reassignment or transfer if needed
Poor Communication
• Proactively share status and seek information
• Confirm understanding in difficult conversations
• Provide constructive feedback respectfully
• Practice active listening skills
Career Stagnation
• Set up career development plan with manager
• Take on stretch assignments to gain new skills
• Attend conferences and trainings relevant to role
• Express interest in new projects and opportunities
Lack of Job Satisfaction
• Identify parts of job role you do enjoy
• Set small meaningful goals each week/month
• Find purpose in benefiting team, company, or clients
• Volunteer with company CSR initiatives
Physical Work Environment

• Request ergonomic assessment of workspace
• Take regular breaks to stand, stretch, or walk
• Customize workstation for optimal comfort
• Wear noise-cancelling headphones if loud
Unrealistic Deadlines
• Push back on unreasonable turnaround times
• Ask for priorities to be set on assignments
• Outline work process and timing needed to manager
Role Ambiguity
• Request clear job description from manager
• Ask about expectations for success in position
• Seek regular feedback on performance
Personal Issues
• Compartmentalize and avoid venting at work
• Speak with counsellor/therapist for support
• Manage stress through self-care activities
Technostress
• Turn off notifications during focus work
• Set boundaries on after-hours communication
• Learn to use technology more efficiently
• Take digital detox days