Call Centre Influence on the Delivery of Mental Health Services Among Young People: A Case of One2one Call Centre in Nairobi County

Call Centre Influence on the Delivery of Mental Health Services Among Young People: A Case of One2one Call Centre in Nairobi County

[1*]Mutwiri Robert Kimathi, [2]Dr Caroline Kawila, [3]Mr Musa Olouch

Post Graduate Student: Kenya Methodist University

https://orcid.org/0000-0002-9161-2795

[2,3]Lecturer, Department of Health Systems Management

Kenya Methodist University

Abstract

Purpose: The purpose of this study was to examine the influence of call centers on the delivery of mental health services among young people in Nairobi County. Specifically, the study aimed to investigate the impact of crisis intervention, round-the-clock availability, resource sharing, and follow-ups on mental health service delivery.

Methodology: The study employed a descriptive-cross-sectional research design to assess the impact of call centers on mental health service delivery. The target demographic consisted of healthcare providers affiliated with the one2one Call Centre in Nairobi County. A sample size of 112 respondents was selected using basic random selection methods. Data was collected through the distribution of questionnaires, and Statistical Package for Social Science (SPSS) version 25 was utilized for data analysis. Descriptive statistics such as mean, standard deviation, frequencies, and percentages were employed, along with correlation and regression analysis to evaluate the relationships between research variables.

Findings: The study found that crisis intervention, round-the-clock availability, and resource sharing had a positive impact on the delivery of mental health services among young people in Nairobi County. Specifically, crisis intervention strategies were shown to significantly enhance the overall mental health support system, ensuring timely assistance for young individuals in need. Furthermore, maintaining round-the-clock availability allowed service providers to cater to the diverse needs and schedules of young people seeking assistance, thereby improving the overall delivery of mental health services across the county.

Unique Contribution to Theory, Practice, and Policy: This study makes several contributions to theory, practice, and policy in the field of mental health service delivery. Firstly, it adds to the body of literature on the effectiveness of call centers in enhancing accessibility and reachability of mental health services, particularly among young people. Secondly, the findings provide valuable insights for healthcare practitioners and policymakers on the importance of crisis intervention, round-the-clock availability, and resource sharing in improving mental health service delivery.

Key Words: *Call Centre's, Crisis Intervention, Round-The-Clock Availability, Resource Sharing, Follow-Ups*

Introduction

The escalating global issue of youth mental health necessitates timely and effective services. Innovative call centres have emerged as accessible platforms for young individuals to anonymously discuss their concerns via phone, text, or chat, reducing stigma and encouraging help-seeking (McGorry *et al.,* 2022). These 24/7 centres offer immediate aid during crises, bridging short-term support and long-term care referrals. Strategic health system management involves resource allocation, seamless integration of call centres with mental health services, and a focus on training and data security. Recognizing call centres' role and management implications enables health systems to enhance their responsiveness to youth mental health needs, ultimately fostering improved well-being and resilience.

In recent years, technological advancements and an increased awareness of the essence of timely mental health intervention have significantly transformed mental health services (Ebert *et al.,* 2018). Among the key contributors to this evolution are call centers, which have become pivotal components in crisis intervention, ensuring round-the-clock availability, and facilitating resource sharing, and conducting follow-ups (Zito *et al.,* 2018). The integrated approach enhances the effectiveness and accessibility of mental health services by offering immediate support during crises, breaking down the constraints of traditional office hours through 24/7 availability, and serving as information hubs for resource dissemination.

Call centers act as frontline responders during mental health crises, providing immediate and compassionate support to individuals facing acute distress. Their timely intervention serves as a crucial bridge to more comprehensive mental health care (Magill, Siegel & Pike, 2020). Operating around the clock, call centers address the unpredictable nature of mental health issues, ensuring individuals in distress have continuous access to support. This accessibility transcends the limitations of traditional office hours, catering to the diverse needs of the population and contributing to a more inclusive and responsive mental health support system (Gruber *et al.,* 2021).

Additionally, call centers serve as central repositories of mental health information, guiding individuals to relevant services and resources, thereby empowering them to actively engage in their mental health journeys (McGorry *et al.,* 2022). The inclusion of follow-ups in the call center's role further ensures ongoing support, monitoring progress, and optimizing interventions to promote sustained mental well-being. This comprehensive approach reflects the evolving landscape of mental health services, leveraging technology and timely interventions for a more accessible and effective delivery of care.

On a global scale there is an increasing awareness of the health-care issues connected with mental diseases (Gunnell *et al.,* 2018). Young people are predominantly susceptible to mental health issues, yet only a minority seek therapy or assistance during this critical period (Bullot *et al.,* 2017). Globally, it is estimated that 14% of adolescents ranging 10 to 19 years are affected by conditions

related to mental health (WHO, 2021). Among these, behavior problems, depression, and anxiety are the most common. In the United States of America (U.S.A), around 20% of children and adolescents suffer from mental health conditions, leading to annual inpatient and outpatient healthcare costs totaling $247 billion (Bardach *et al.,* 2014). Similarly, 13% of young individuals aged 5 to 19 in the United Kingdom (U.K.) are affected by mental illnesses (Sadler *et al.,* 2018), and the figure stands at 14% for young people in Australia (Hafekost *et al.,* 2021).

The WHO devised a framework for health-care delivery. The service delivery pillar is supported by the human resources for health and health management information systems pillars (Menear et al., 2019). Compared to the general population, young individuals with mental health issues experience decreased physical well-being, prolonged hospital stays, and diminished healthcare quality due to both their conditions and life circumstances (Bowman *et al.,* 2017). Mental health challenges not only compromise the well-being of young individuals but also correlate with academic underachievement and failure to complete high school (Olusunmade *et al.,* 2019). Those who leave high school early are more prone to unemployment, leading to lasting effects on their future educational achievements, job prospects, and earning capabilities (Mitchell *et al.,* 2021). Healthcare use and treatment expenses for young persons with mental illnesses are often greater than for their counterparts (Fleming *et al.,* 2020; Segal *et al.,* 2018).

Kelly et al. (2018) found that individuals 18 to 25 years old exhibit greater levels of depression compared to other age brackets within the general populace. This age group encounters distinct stressors and challenges while transitioning into adulthood, given the expectations to shoulder adult responsibilities (Benson & Elder, 2020). Many young adults in this age range grapple with significant distress as they navigate multiple life changes, striving to make sense of their evolving circumstances (Pretorius et al., 2019). The emotional and personal issues affiliated with this phase of a young person's lifecycle, as well as the strategies employed to address these concerns (World Health Organization, 2018), hold immense importance.

In Kenya, adopting a collaborative framework that integrates Informal Health Providers (IHPs) is well-suited to address the challenges in the mental healthcare system. Similar to other African nations, Kenya grapples with a shortage of mental health professionals. Many individuals, especially those residing in rural areas, turn to IHPs such as Traditional Healers (T.H.s) and Faith Healers (F.H.s) for mental health treatments (Petersen *et al.,* 2020). Despite recent efforts to establish formal communication channels between formal and informal healthcare providers (Musyimi *et al.,* 2019), involving IHPs through task-sharing could be a significant approach to tackle Kenya's mental health issues. However, there is limited understanding of the challenges faced by IHPs when integrating into a system that addresses mental health problems.

In Kenya, the prevalence of mental health issues among young people has raised questions about the effectiveness of existing support systems (Kumar *et al*., 2021). One central support system is

the "one2one Call Center," which has gained prominence for its potential to provide mental health services to the youth population. The one2one Call Center is a unique platform that offers young people confidential and non-judgmental mental health support (McGorry *et al*., 2022). However, despite its growing popularity, there is a dearth of comprehensive research that systematically explores the influence of the call centre on the delivery of mental health services among this demographic.

Nairobi County's urban population and diverse socio-economic backgrounds complicate mental health service delivery (Downs *et al.,* 2019). Understanding how the Call centre addresses barriers related to stigma, limited access to traditional mental health services, and the unique needs of young people will be crucial for policymakers, healthcare providers, and organizations working in the mental health sector. Additionally, investigating the role of technology-mediated interventions, such as the call centre, in reaching marginalized and underserved youth populations is of paramount importance.

Statement of the Problem

The Kenya Mental Health Policy (2015-2030) is a crucial initiative aiming to establish accessible and comprehensive mental health services, particularly recognizing the importance of youth-focused interventions in light of demographic changes, urbanization, and the exacerbated impact of COVID-19 (Mathai et al., 2022; Mwavua et al., 2023). However, existing challenges include limited information dissemination, unclear support pathways, and a shortage of mental health professionals. To bridge these gaps, call centres are identified as pivotal, especially during periods of restrictions, offering a potential solution to enhance outreach and support mechanisms (Mathai et al., 2022).

The gravity of the mental health burden in Kenya is underscored by credible data, with the Kenya Ministry of Health (2019) report revealing that approximately 25% of the population experiences a mental health disorder at some point in their lives, with depression and anxiety disorders being the most prevalent at around 10% (Mathai et al., 2022). Furthermore, the World Health Organization (2021) alarming statistic of just one psychiatrist for every 500,000 people emphasizes the critical need for urgent action to address the scarcity of mental health resources and infrastructure, ensuring that adequate support and services are readily available to alleviate the escalating mental health crisis in the country.

In Nairobi County, 50% live in informal settlements, mostly under 24, facing societal challenges linked to mental health. This group encounters psychosocial and environmental factors, including poverty and caregiver mental health issues (Osborn *et al.,* 2020). The inability to access in-person support intensifies concerns (Pfefferbaum & North, 2020). This research explores call centres' impact on youth mental health services. Despite the need for solutions, only some studies exist. Mutiso et al. (2019) examined the impacts of mhGAP-IG in a rural setting, while Mwavua et al.

(2023) studied a digital mental health platform during COVID-19. There is a lack of studies on call centres and youth mental health services, making this research necessary. This study, therefore, sought to examine call centre's influence on the delivery of mental health services among young people in Nairobi County.

Objectives of the Study

Purpose of the study

The study aimed to establish the call centre's influence on the delivery of mental health services among young people in Nairobi County.

Specific Objectives

  i. To evaluate the influence of crisis intervention on the delivery of mental health services among young people in Nairobi County

  ii. To examine the influence of round-the-clock availability on the delivery of mental health services among young people in Nairobi County

  iii. To determine the influence of resource sharing on the delivery of mental health services among young people in Nairobi County

  iv. To establish the influence of follow-ups on the delivery of mental health services among young people in Nairobi County

LITERATURE REVIEW

Delivery of Mental Health Services among Young People

The study delves into mental health services among young individuals in this section. Crisis resolution assumes a central role, representing the immediate response and management of mental health challenges faced by youth. Referral rates stand as critical markers, signifying the accessibility and utilization of mental health services, thereby ensuring timely and appropriate interventions. Enhancing coping skills among young individuals is a crucial indicator, reflecting their resilience and adeptness in navigating mental health difficulties.

As reported by the World Health Organization (2019), 10-20% of children and adolescents globally experience mental health disorders, half of which manifest by age 14. This alarming rate emphasizes the critical need for sufficient mental health services for young individuals. Yet, providing access to these services presents a significant obstacle. Research has shown that nearly 75% of young people dealing with mental health problems do not receive the necessary treatment (Patel *et al.,* 2018). Factors such as stigma, lack of awareness, and limited resources contribute significantly to this gap in treatment.

In Kenya, delivering mental health services among young people is a pressing concern, given the rising prevalence of mental health issues within this demographic. According to a study by the African Journal of Psychiatry, approximately 15-20% of Kenyan adolescents suffer from mental health disorders. (Ndetei *et al.,* 2016) This alarming statistic underscores the urgency of adequate mental health service provision for Kenyan youth. However, access to mental health services remains limited in Kenya. The country's mental health system faces challenges, including a shortage of trained mental health professionals and inadequate funding. A report from the World Health Organization indicates that Kenya has only 83 practicing psychiatrists and 427 psychiatric nurses, resulting in a significant treatment gap. (WHO, 2020).

Crisis Intervention and Mental Health Services Delivery

Asarnow et al. (2019) investigated the link between late teenage and young adult depression, suicidal thoughts, and the interpersonal psychological theory of suicide (IPTS). The cross-sectional research included late teens and young adults aged 18 to 25. The research utilized self-report measures to assess depressive symptoms, suicidal thoughts, and variables associated with the IPTS, including perceived burdensomeness and thwarted belongingness. The results indicated that late teens and young adults with higher levels of perceived burdensomeness and thwarted belongingness experienced increased depressive symptoms and a heightened risk of suicidal thoughts. The study concluded that IPTS factors significantly impacted the mental well-being of late adolescents and young adults.

King et al. (2020) aimed to assess the effectiveness of the 'Teen Options for Change' (TOC) intervention in connecting these high-risk individuals with appropriate mental health services and reducing their suicidal behaviors. The researchers conducted a randomized controlled trial involving 87 young patients (ages 12-18) who screened positive for suicide risk during their visit to an urban emergency department. The participants were assigned to either the TOC intervention group or a control group that received enhanced usual care. The TOC intervention consisted of a manualized brief therapy session and a safety planning intervention. Participants in the intervention group were provided with a safety plan coping skill, and linked to follow-up mental health care. Participants in the TOC group reported more significant reductions in suicidal ideation at the three-month follow-up compared to the control group. The TOC group also reported a higher likelihood of engaging in outpatient mental health services post-intervention. The intervention demonstrated acceptability among both participants and emergency department staff.

Round-the-Clock Availability and Mental Health Services Delivery

Grist et al. (2020) explored the relationship between the perceived availability of mental health services in schools and the feelings of stigma among students. The study employed a cross-sectional survey design involving secondary school students. Participants were asked about their perceptions of the availability of mental health support services within their school and their

feelings about the stigma associated with seeking help for mental health issues. The study also considered demographic variables such as age and gender. The study found a significant association between the perceived presence of mental health provision in schools and reduced feelings of stigma among students. Students who believed their school had solid mental health support reported lower levels of stigma. This suggests that the availability of mental health services within schools may contribute to a more supportive environment that fosters open discussions about mental health and reduces the fear of judgment associated with seeking help.

Kiima and Jenkins (2020) studied the influence of the availability and utilization of mental health services at Kenya's primary healthcare level. The study adopted a systematic approach, utilizing qualitative and quantitative methods to gather data. The study offered a well-rounded perspective on the subject matter. The study findings indicated a limited availability of mental health services, a lack of specialized staff, inadequate training, and varying degrees of integration of mental health into primary care. The study contributed valuable insights into the factors that influence individuals' decisions to seek mental health care. The study concluded that availability significantly influenced the utilization of mental health services at Kenya's primary health care level.

Resource Sharing and Mental Health Services Delivery

Stirman et al. (2019) studied the influence of resource sharing on community mental health. The study focused on the strategies for implementing a chronic care model in rural and low-income urban settings. The study employed a mixed-methods approach, combining qualitative interviews and quantitative assessments to explore the strategies and barriers related to resource sharing in these settings. Through in-depth interviews with mental health providers and administrators, the study highlighted the importance of collaboration, communication, and partnership among community stakeholders. The study established that the collaborations facilitated the sharing of resources, such as expertise, funding, and personnel, to support the implementation of the Chronic Care Model.

Nadeem et al. (2021) conducted a study on the impact of resource sharing and collaboration on children's mental health services: the impact of pooled funding. The study examined the experiences of organizations or agencies involved in children's mental health services that have adopted pooled funding mechanisms. The study found that resource sharing, collaboration, and service delivery efficiency were closely related. Additionally, the study contributed to understanding how different stakeholders, including government agencies, non-profit organizations, and community groups, can work together more effectively to support children's mental health.

Follow-ups and Mental Health Services Delivery

Koenen and Ratanatharathorn (2017) studied the influence of follow-up interventions on post-traumatic stress disorder symptoms. The study systematically searched relevant databases to identify studies investigating the impact of follow-up interventions on PTSD symptoms. They applied strict inclusion and exclusion criteria to select studies that met specific quality standards. The selected studies were then subjected to a meta-analysis statistical method. The study found that follow-up interventions significantly reduced PTSD symptoms. This could include information on the average reduction in symptoms, the variability across different interventions, and potential factors that moderated the effectiveness of follow-up strategies. The study informed mental health professionals about the value of implementing follow-up interventions to treat PTSD. The study concluded that follow-up interventions significantly influenced post-traumatic stress disorder symptoms.

Olfson et al. (2022) the continuity of antidepressant treatment for adults with depression in the United States. The study utilized a large-scale observational design, relying on secondary data sources such as health insurance claims or medical records. The study involved a representative sample of adults diagnosed with depression who had received antidepressant medication prescriptions. Statistical analyses were conducted to identify trends and associations within the data, employing survival analysis or regression models to assess factors related to treatment continuity. The study found that adults with depression who adhered to antidepressant treatment over time could manage their condition.

Theoretical Framework

The following theories guided the study;

Information Systems Success Model

The Information Systems Success Model, developed by DeLone and McLean in 1992, is a comprehensive framework with six critical dimensions to assess the intricate nature of information system (IS) success (DeLone & McLean, 1992). These dimensions include system quality, addressing technical aspects such as reliability, accuracy, and user-friendliness; information quality, which evaluates the relevance, accuracy, and completeness of the generated information; service quality, assessing the responsiveness, helpfulness, and accessibility of the IS service; use, measuring the extent to which the IS, is utilized by its intended users; user satisfaction, gauging the degree to which users find satisfaction with the IS; and net benefits, examining the overall advantages the IS provides to the organization, such as increased productivity, improved decision-making, and reduced costs (DeLone & McLean, 1992; Doll & Torkzadeh, 1988; Seddon, 1997). This comprehensive model acknowledges the multifaceted nature of IS success, offering a nuanced approach for evaluation in diverse organizational contexts.

The Information Systems Success Model provides a valuable framework for analyzing the impact of a call center on the delivery of mental health services to young people, focusing on critical aspects such as crisis intervention, round-the-clock availability, resource sharing, and follow-ups (Seddon, 1997). In crisis intervention, information quality is paramount for the call center's efficacy. The accuracy, timeliness, and relevance of information delivered to mental health professionals during crisis calls ensure that interventions are well-informed and tailored to the specific needs of the individuals seeking assistance (Wang & Strong, 1996). Additionally, system quality plays a vital role in crisis situations, with a reliable and responsive call center system enabling swift access to critical information, thereby contributing to the overall effectiveness of crisis intervention (Doll & Torkzadeh, 1988).
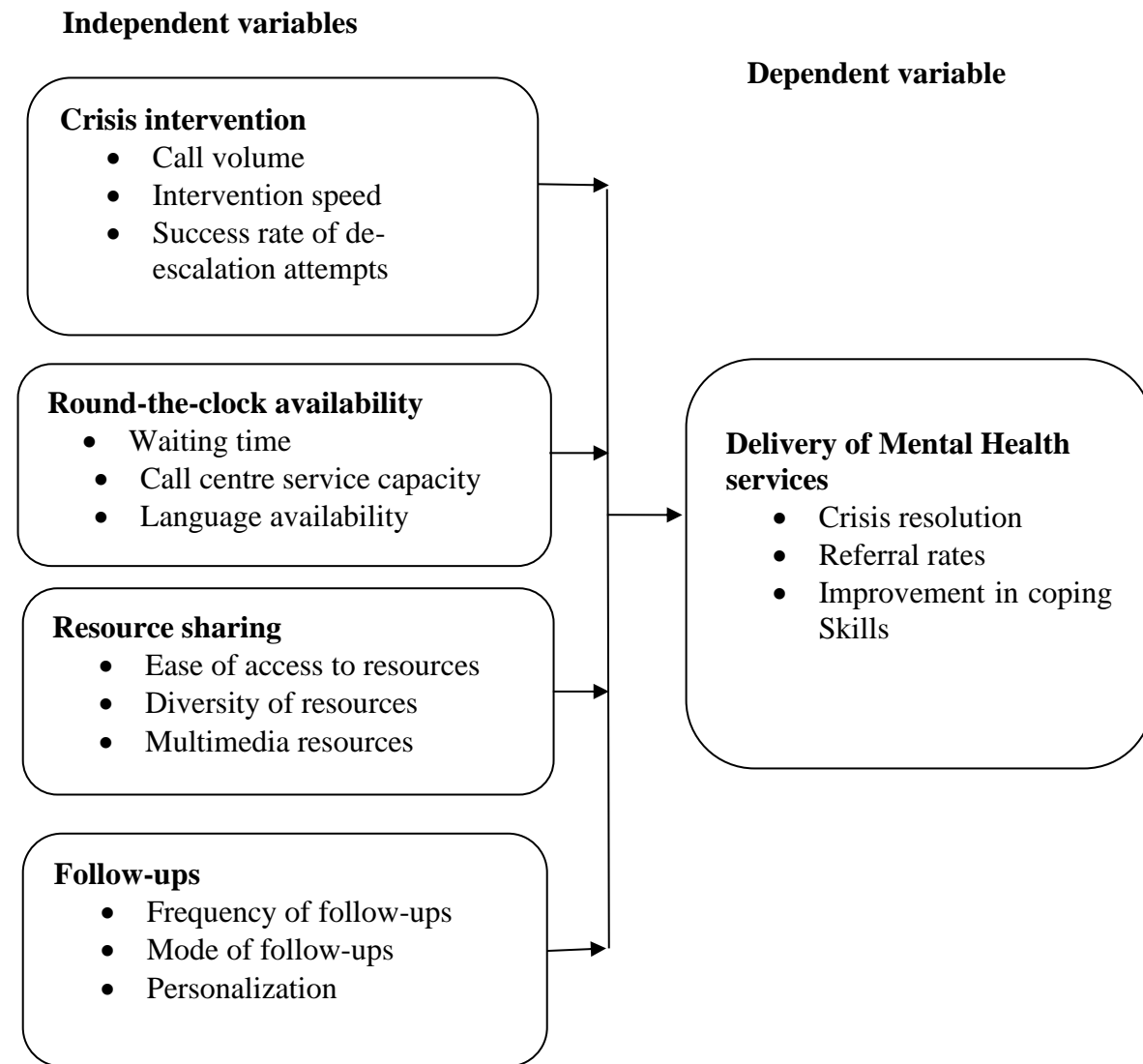
Therefore, the Information Systems Success Model highlights the critical role of information quality and system quality in the success of a mental health call center (Cronin & Taylor, 1992). These dimensions are pivotal in ensuring the effectiveness and efficiency of crisis intervention, round-the-clock availability, resource sharing, and follow-ups, collectively enhancing the delivery of mental health services to young people.

Lean Thinking in Healthcare

Lean Thinking in Healthcare, pioneered by James Womack and Daniel Jones in the 1990s (Womack & Jones, 1990), draws inspiration from the success of Toyota's lean manufacturing system. Their belief in the applicability of lean principles to healthcare led to the development of a methodology aimed at enhancing efficiency and quality in healthcare delivery (Womack & Jones, 1990). The core tenets of this theory involve the identification and elimination of waste, with waste defined as anything not contributing value to the patient experience, such as waiting times and unnecessary procedures (Rother & Shook, 2003; Graban, 2011). Emphasizing patient-centric care, Lean Thinking prioritizes designing and delivering healthcare services tailored to patient needs.

In applying Lean Thinking to a mental health call center, the overarching goal is to optimize outcomes for young people. By prioritizing efficiency and effectiveness, the focus shifts towards delivering value through crisis intervention, round-the-clock availability, resource sharing, and follow-ups in a manner that is finely tuned and tailored to the unique needs of this demographic.

Conceptual Framework

Independent variables

Dependent variable

Crisis intervention
- Call volume
- Intervention speed
- Success rate of de-escalation attempts

Round-the-clock availability
- Waiting time
- Call centre service capacity
- Language availability

Resource sharing
- Ease of access to resources
- Diversity of resources
- Multimedia resources

Follow-ups
- Frequency of follow-ups
- Mode of follow-ups
- Personalization

Delivery of Mental Health services
- Crisis resolution
- Referral rates
- Improvement in coping Skills

RESEARCH METHODOLOGY

The study employed a descriptive research design to investigate the influence of call centers on mental health service delivery to young people in Nairobi County. Data was collected from healthcare providers under the one2one Call Centre program using structured questionnaires. Simple random sampling was utilized to select 122 respondents from a population of 237 employees. The questionnaire comprised five sections covering demographics and study variables, with a 5-point Likert scale used for responses. Pre-testing was conducted in Mombasa City County to ensure validity and reliability of the research instruments. Data was analyzed using SPSS version 25, employing descriptive statistics, regression, and correlation analysis. Ethical

considerations were observed, with approval obtained from Kenya Methodist University Ethical Committee and National Commission for Science and Technology Innovation (NACOSTI). Respondents were assured of confidentiality and the ethical use of their data for scholarly purposes. Overall, the study adhered to rigorous research standards to ensure the integrity and validity of its findings.

RESULTS AND DISCUSSIONS

Crisis Intervention

The study's objectives aimed at evaluating the influence of crisis intervention on the delivery of mental health services among young people in Nairobi County. The participants were requested to state the degree to which crisis intervention is a causal factor of mental health services delivery among young people in Nairobi County. The 5 point Likert scale was applied to rate the responses as illustrated: SD-strongly disagree (1), D-disagree (2), N-neutral (3), Agree (4), and SA-strongly agree (5). The compiled findings are as demonstrated in Table 1.

Table 1: Crisis Intervention

Statements	N	Mean	Std. Deviation
Call volume to handle is large.	106	3.752	0.830
The frequency of cases has reduced	106	3.708	0.985
Response time is short for the intervention.	106	3.830	1.064
The engagement rate is high.	106	4.028	0.990
De-escalation is effective for all help seekers.	106	3.800	0.924
User satisfaction is high.	106	4.085	0.757
The proportion of young people referred to ongoing mental health services is high.	106	4.029	0.814
Training and preparedness of crisis intervention staff is available.	106	3.868	0.806

According to the study's findings, most of the participants strongly agreed that user satisfaction is high (Mean=4.085), the proportion of young persons recommended and/or placed to ongoing mental health services is high (mean=4.029), the engagement rate is high (mean=4.028), training and preparedness of crisis intervention staff is available (mean=3.868) and that response time is short for the intervention (mean=3.830). In addition, respondents agreed that de-escalation is effective for all help seekers (mean=3.800), call volume to handle is large (mean=3.752) and that the frequency of cases has reduced (mean=3.708). This implies that as a result of crisis intervention on the provision of mental health services among young people in Nairobi County, user satisfaction is high, the proportion of youthful persons referred to ongoing mental health services is high, the engagement rate is high, training and preparedness of crisis intervention staff is available and that response time is short for the intervention. Concurring with the research findings, Gould et al. (2017) found that the crisis hotline interventions effectively managed the immediate crisis. Most callers reported reduced distress after speaking to a crisis hotline responder. Many callers reported engaging in positive help-seeking behaviors after the initial call. This included seeking professional help, talking to friends or family, and accessing mental health services. Among the callers, a notable percentage reported having definite plans for suicide. The crisis hotline intervention reduced suicidal intent, indicating the potential life-saving impact of these interventions.

Similarly, Compton et al. (2019) found a positive impact of cognitive-behavioral psychotherapy on depressive and anxiety disorders in young individuals. The review concludes that CBT demonstrates considerable effectiveness in reducing symptoms of depression and anxiety among adolescents and children. The analysis reveals consistent evidence supporting the beneficial effects of CBT across various studies and settings. The study emphasized that CBT equips young individuals with essential coping skills and strategies that extend beyond the therapeutic context, contributing to improved long-term outcomes.

Round-The-Clock Availability

The aim of the second objective of the research was to evaluate the impact of round-the-clock availability on the delivery of mental health care among young persons in Nairobi County. The participants were requested to state the degree to which round-the-clock availability is a contributing factor of provision of mental health care among young people in Nairobi County. The 5 point Likert scale was applied to rate the responses as illustrated: SD-strongly disagree (1), D-disagree (2), N-neutral (3), Agree (4), and SA-strongly agree (5). The compiled findings are as demonstrated in Table 2

Table 2: Round-The-Clock Availability

	N	Mean	Std. Deviation
Waiting time is short.	106	3.868	0.817
Protocols for urgent cases are available.	106	4.123	0.912
The Centre offers scheduled appointments.	106	4.104	0.850
Services are available 24/7, every day.	106	3.415	1.330
Multiple communication channels, such as phone, text, and web chat, are available.	106	4.425	0.755
The number of mental health professionals available is sufficient.	106	3.830	0.980
The call centre can handle many cases at once	106	3.972	0.931
Service is accessible to young people in different areas of Nairobi.	106	4.340	0.779
Service is available in multiple languages to cater to diverse populations.	106	4.076	0.912

Based on the study's results, the largest proportion of the participants strongly agreed that multiple communication channels, such as phone, text, and web chat, are available (mean=4.425), service is accessible to young people in different areas of Nairobi (mean=4.340), protocols for urgent cases are available (mean=4.123), the centre offers scheduled appointments (mean=4.104), service is available in multiple languages to cater to diverse populations (mean=4.076) and that the call centre can relatively handle many cases at once (mean=3.972). In addition, respondents agreed that waiting time is short (mean=3.868), the number of mental health professionals available is relatively sufficient (mean=3.830) and that services are relatively available every day (mean=3.415). This implies that as a result of round-the-clock availability on the provision of mental health care among young people in Nairobi County, multiple communication channels, such as phone, text, and web chat, are available, service is accessible to young people in different areas of Nairobi, protocols for urgent cases are available, the centre offers scheduled appointments, service is available in multiple languages to cater to diverse populations and that the call centre can handle many cases at once.

In line with the study findings, Grist et al. (2020) found a significant association between the perceived presence of mental health provision in schools and reduced feelings of stigma among students. Students who believed their school had solid mental health support reported lower levels of stigma. This suggests that the availability of mental health care within schools may contribute to a more supportive atmosphere that fosters open communication about mental health and reduces the fear of judgment associated with seeking help.

Resource Sharing

The study's third objective was to investigate how resource sharing affected young people in Nairobi County's access to mental health treatments. The respondents were asked to rate the degree to which sharing of resources aids in the provision of mental health care for young people within Nairobi County. The 5 point Likert scale was applied to rate the responses as illustrated: SD-strongly disagree (1), D-disagree (2), N-neutral (3), Agree (4), and SA-strongly agree (5). The compiled findings are as demonstrated in Table 3.

Table 3: Resource Sharing

Statements	N	Mean	Std. Deviation
Resources are easily accessible.	106	3.972	0.845
Resources at the disposal of the centre are diversified.	106	3.925	0.801
Multimedia resource sharing exists.	106	4.094	0.787
Shared staffing arrangements and joint training programs exist.	106	3.829	0.985
The cross-training level provided to mental health professionals is high.	106	3.849	0.871
Joint programs and initiatives are present in the centre.	106	3.840	0.906
Resource allocation and distribution are fair.	106	3.830	0.822
Telehealth and technology are shared with partners.	106	3.877	0.836
Shared data and information systems are available.	106	3.905	0.915

According to the study's results, the largest proportion of the participants strongly agreed that multimedia resource sharing exists (mean=4.094), resources are easily accessible (mean=3.972), resources at the disposal of the centre are diversified (mean=3.925), shared data and information systems are available (mean=3.905), telehealth and technology are shared with partners (mean=3.877), the cross-training level provided to mental health professionals is fair (mean=3.849) and that joint programs and initiatives are present in the centre (mean=3.840). In addition, respondents agreed that resource allocation and distribution are fair (mean=3.830) and that shared staffing arrangements and joint training programs exist (mean=3.829). This is an indication that as a result of resource sharing on the provision of mental health services among young people in Nairobi County, resource sharing exists, resources are easily accessible, resources at the disposal of the centre are diversified, shared data and information systems are available, telehealth and technology are shared with partners, the cross-training level provided to mental health professionals is high and that joint programs and initiatives are present in the centre.

In tandem with the study findings, Stirman et al. (2019) established that the collaborations facilitated the sharing of resources including expertise, funding and personnel to facilitate the implementation of the Chronic Care Model. Nadeem et al. (2021) found that resource sharing, collaboration, and service delivery efficiency were closely related. The study contributed to understanding how different stakeholders comprising of community groups, non-profit organizations, and government agencies can work together more effectively to support children's mental health. Oliver and Montgomery (2016) concluded that the institution with the most significant power within the system may differ from the organization with the most significant role in coordinating routine contacts.

Follow-Ups

The study's final objective sought to examine the influence of follow-ups on the provision of mental health services among young persons in Nairobi County. The respondents were asked to rate the degree to which follow ups aids in the provision of mental health care for young people within Nairobi County. The 5 point Likert scale was applied to rate the responses as illustrated: SD-strongly disagree (1), D-disagree (2), N-neutral (3), Agree (4), and SA-strongly agree (5). The compiled findings are as demonstrated in Table 4

Table 4: Follow-Ups

	N	Mean	Std. Deviation
The frequency of follow-ups is high.	106	3.875	0.878
There are diversified modes of follow-ups.	106	4.048	0.840
The proportion of young people who actively engage in follow-up appointments is high.	106	3.856	0.864
Mental health symptoms and well-being are promoted during follow-ups.	106	4.173	0.864
Seekers give positive feedback during follow-ups.	106	4.010	0.876
Follow-ups enhance treatment adherence.	106	4.010	0.898
Personalized/customized follow-up is done for acute cases.	106	4.000	0.848
Follow-ups ensure continuity of care.	106	4.173	0.756
Follow-ups enhance long-term outcomes.	106	4.260	0.812

According to the study's results, the largest proportion of the participants strongly agreed that follow-ups enhance long-term outcomes (mean=4.260), mental health symptoms and well-being are promoted during follow-ups (mean=4.173), follow-ups ensure continuity of care (mean=4.173), there are diversified modes of follow-ups (mean=4.048), seekers give positive feedback during follow-ups (mean=4.010), follow-ups enhance treatment adherence (mean=4.010) and that personalized/customized follow-up is done for acute cases (mean=4.000). Additionally, participants agreed that the frequency of follow-ups is high (mean=3.875) and that the proportion of young people who actively engage in follow-up appointments is high (mean=3.856). This implies that follow-ups enhance long-term outcomes, mental health symptoms and well-being are promoted during follow-ups, follow-ups ensure continuity of care, there are diversified modes of follow-ups, seekers give positive feedback during follow-ups, follow-ups enhance treatment adherence and that personalized/customized follow-up is done for acute cases.

Similar to the study findings, Koenen and Ratanatharathorn (2017) found that follow-up interventions significantly reduced PTSD symptoms. This could include information on the average reduction in symptoms, the variability across different interventions, and potential factors

www.carijournal.org

that moderated the effectiveness of follow-up strategies. The study informed mental health professionals about the value of implementing follow-up interventions to treat PTSD. The study concluded that follow-up interventions significantly influenced post-traumatic stress disorder symptoms. Additionally, Olfson et al. (2022) found that adults with depression who adhered to antidepressant treatment over time could manage their condition.

Delivery of Mental Health Services

Using a scale of 1-5 where 5-Strongly agree, 4-Agree, 3-Moderately agree, 2- disagree, and 1-strongly disagree, participants were required to select the level to which they agreed to the different statements that relate to the Delivery of Mental Health Services. Table 5 below illustrates the findings of the research.

Table 5: Delivery of Mental Health Services

Statements	N	Mean	Std. Deviation
Crisis resolution rates have increased.	106	3.789	0.746
Referral rates have increased.	106	4.152	0.875
Service utilization rates have increased.	106	4.105	0.784
Wait time for services has significantly reduced.	106	3.943	0.732
Treatment completion rates have increased.	106	3.953	0.797
Patient satisfaction and experience have been enhanced.	106	4.000	0.793
Follow-up is promoted.	106	4.038	0.839
The timeliness of the intervention is boosted.	106	3.981	0.816
Accessibility of mental health services is enhanced.	106	4.000	0.793
The number of individuals using mental health services has increased.	106	4.066	0.772
Patient satisfaction is enhanced.	106	4.114	0.725
The flow of information is promoted.	106	4.104	0.804

According to the study's results, the largest proportion of the participants strongly agreed that as a result of call centre's referral rates have increased (mean=4.152), patient satisfaction is enhanced (mean=4.114), service utilization rates have increased (mean=4.105), the flow of information is promoted (mean=4.104), the number of individuals receiving mental health care has increased (mean=4.066), follow-up is promoted (mean=4.038), patient satisfaction and experience have been enhanced (mean=4.000) and that accessibility of mental health services is enhanced (mean=4.000). Furthermore, respondents affirmed that the timeliness of the intervention is boosted (mean=3.981), treatment completion rates have increased (mean=3.953), wait time for services has significantly reduced (mean=3.943), crisis resolution rates have increased (mean=3.789). This implies that as a result of call centre's referral rates have increased, patient satisfaction is enhanced, service utilization rates have increased, the flow of information is promoted, the number of individuals receiving mental health care has surged, follow-up is promoted, patient satisfaction and experience have been enhanced and that accessibility of mental health services is enhanced.

Regression Analysis

In order to test how crisis intervention, round-the-clock availability, resource sharing, and follow-ups influences on the provision of mental health care among young people in Nairobi County, the researcher performed multiple regression.

Model Summary

Table 6: Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.916[a]	.839	.799	1.211

a. Predictors: (Constant), crisis intervention, round-the-clock availability, Resource sharing, Follow-ups

The findings in Table 6 show that the crisis intervention, round-the-clock availability, Resource sharing, Follow-ups had a joint significant effect on delivery of mental health services among youthful persons in Nairobi County as indicated by r value of 0.916. Besides, the R-squared of 0.839 illustrates that the independent variables made up of 83.9% variance on delivery of mental health services among young people in Nairobi County.

ANOVA

Table 7: ANOVAª

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	145.224	4	36.306	20.844	0.000
	Residual	175.942	101	1.742		
	Total	**321.166**	**105**			

a. Dependent Variable: Delivery of mental health care among young people in Nairobi County

b. Predictors: (Constant), crisis intervention, round-the-clock availability, Resource sharing, Follow-ups

Table 7 presents the results of the ANOVA, showing that the F statistics value was 20.844, with a p-value = 0.00<0.05. Since the P-value is significant, it shows that the model used for the study is significant and fit. This is an indication that call centre's (crisis intervention, round-the-clock availability, resource sharing as well as follow-ups) will foster the delivery of mental health care among young people in Nairobi County.

Coefficients

Table 8: Coefficientsª

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	4.123	0.364		11.326	0.000
Crisis intervention	0.712	0.241	0.134	2.954	0.005
Round-the-clock availability	0.671	0.234	0.121	2.867	0.007
Resource sharing	0.634	0.301	0.172	2.106	0.042
Follow-ups	0.549	0.222	0.142	2.473	0.025

a. Dependent Variable: Delivery of mental health care among young people in Nairobi County

The whole regression model for the model was:

Y =4.123+0.712×crisis intervention +0.671 ×round-the-clock availability +0.634×Resource sharing +0.549×Follow-ups +έ

Crisis intervention has a favorable impact on how young people in Nairobi County receive mental health treatment. It shows that for each additional unit in crisis intervention, there will be a 0.72 rise in the number of young people in Nairobi County receiving mental health care. The provision of mental health support for young adults in Nairobi County was positively impacted by round-the-clock availability, resulting in an upsurge in mental health care delivery of 0.67 units for every unit increase. Furthermore, resource sharing demonstrated a beneficial effect on the provision of mental health programs for youth in Nairobi County, resulting in a 0.634 increase in the administration of mental health services for youth in Nairobi County for every unit increase. The results of follow-ups indicated a favorable influence on the provision of mental health support for youth in Nairobi County; this implies that an increase of one-unit results in a 0.549 increase in the provision of mental health care to youth in Nairobi County.

Conclusion

The study concludes that crisis intervention improves the provision of mental health care to young persons in Nairobi County. It suggests that the provision of mental health services to youth in Nairobi County will result from any increase in the number of crisis intervention units. 24/7 availability had a favorable effect on the provision of mental health care to youth in Nairobi County, indicating that an increase in units results in a rise in the provision of mental health services to youth in Nairobi County. The provision of mental health care among young people in Nairobi County was positively impacted by resource sharing, indicating that an increase in units results in an increase in the accessibility of mental healthcare among young persons in Nairobi County. Follow-ups revealed a favorable effect on the provision of mental health services to youth in Nairobi County, indicating that an increase in units had a beneficial effect on the provision of mental health care to youths in Nairobi County.

Recommendations

The findings of the study highlight the positive influence of crisis intervention on the provision of mental health care among young people in Nairobi County underscore the importance of prioritizing responsive interventions during times of need. With each unit increase in crisis intervention, there is a corresponding improvement in the availability and helpfulness of mental health services for young individuals in the county. This suggests that investing in crisis

intervention strategies can significantly enhance the overall mental health support system, ensuring that timely assistance is available when young people require it the most.

The study indicates that round-the-clock availability of mental health services has a positive impact on delivery. This finding emphasizes the necessity of ensuring continuous access to mental health support. By maintaining round-the-clock availability, service providers can better cater to the diverse needs and schedules of young individuals seeking assistance, thereby bolstering the overall delivery of mental health services across Nairobi County.

The study highlights the significance of resource sharing in improving the delivery of mental health services among young people. The positive impact observed suggests that collaborative efforts and resource pooling among stakeholders can optimize the utilization of available resources, leading to more efficient and widespread mental health service delivery. This underscores the importance of fostering partnerships and cooperation among community groups, non-profit organizations, and government agencies to ensure that resources are allocated strategically to support in addressing the mental health requirements of young individuals effectively.

The study underscores the importance of follow-up mechanisms in sustaining the provision of mental health care among young people in Nairobi County. By emphasizing the positive impact of follow-up interventions, the study suggests that ongoing support and monitoring are essential components of effective mental health care. Implementing structured follow-up procedures can help ensure continuity of care, monitor progress, and address any emerging issues or challenges, thereby enhancing the overall quality and sustainability of mental health care for young persons in the county.

___

REFERENCES

Bardach NS, Coker TR, Zima BT, Murphy JM, Knapp P, & Richardson LP, (2014). *Common and costly hospitalizations for pediatric mental health disorders. Pediatrics. 2014*; 133:602–9.

Benson, J. E., & Elder Jr, G. H. (2020). Young adult identities and their pathways: a developmental and life course model. *Developmental psychology*, 47(6), 1646.

Bowman S., McKinstry C., & McGorry P. (2017). Youth mental ill health and secondary school completion in Australia: time to act. *Early Interv Psychiat.;*11:277–89.

Bullot, A., Cave, L., Fildes, J., Hall, S., & Plummer, J. (2017). Youth Survey Report 2017.

Compton, S. N., March, J. S., Brent, D., Albano, A. M., Weersing, V. R., & Curry, J. (2019). Cognitive-behavioural psychotherapy for anxiety and depressive disorders in children and adolescents: An evidence-based medicine review. *Journal of the American Academy of Child & Adolescent Psychiatry,* 43(8), 930–959.

Cronin, J. J., & Taylor, S. A. (1992). Measuring service quality: A reexamination and extension. *Journal of Marketing,* 56(3), 55-68.

DeLone, W. H., & McLean, E. R. (1992). Information systems success: The quest for the dependent variable. *Information Systems Research*, 3(1), 60-90.

Doll, W. J., & Torkzadeh, G. (1988). The measurement of end-user computing satisfaction. *MIS Quarterly,* 12(2), 259-278.

Downs, J. M., Ford, T., Stewart, R., Epstein, S., Shetty, H., Little, R., ... & Hayes, R. (2019). An approach to linking education, social care and electronic health records for children and young people in South London: a linkage study of child and adolescent mental health service data. *BMJ open*, 9(1), e024355.

Ebert, D. D., Van Daele, T., Nordgreen, T., Karekla, M., Compare, A., Zarbo, C., ... & Baumeister, H. (2018). Internet-and mobile-based psychological interventions: Applications, efficacy, and potential for improving mental health. *European Psychologist.*

Fleming M., Fitton C.A., Steiner M.F., McLay J.S., Clark D., & King A., (2020). Educational and health outcomes of children and adolescents receiving antidepressant medication: Scotland-wide retrospective record linkage cohort study of 766 237 schoolchildren. *Int J Epidemiol.;*49:1380–91.

Gould, M. S., Kalafat, J., Harrismunfakh, J. L., & Kleinman, M. (2017). An evaluation of crisis hotline outcomes. Part 2: Suicidal callers. *Suicide and Life-Threatening Behavior,* 37(3), 338-352.

Graban, M. L. (2011). *Lean hospitals: Eliminating waste and improving the quality of healthcare*. Productivity Press.

Grist, R., Croker, A., Denne, M., Stallard, P., & Porter, J. (2020). Is it time to reframe how we promote mental health in schools? Associations between perceived presence of school mental health provision and feelings of stigma. School Mental Health, 12(1), 108-119.

Gruber, J., Prinstein, M. J., Clark, L. A., Rottenberg, J., Abramowitz, J. S., Albano, A. M., ... & Weinstock, L. M. (2021). Mental health and clinical psychological science in the time of COVID-19: Challenges, opportunities, and a call to action. *American Psychologist,* 76(3), 409.

Gunnell, D., Kidger, J., & Elvidge, H. (2018). Adolescent mental health in crisis. *Bmj*, *361*.

Hafekost J., Johnson S.E., Saw S., Buckingham W.J., & Sawyer M.G., (2022). Key findings from the second Australian child and adolescent survey of mental health and wellbeing. Australian & New Zealand Journal of Psychiatry; 50:876–86.

Kelly, S. J., Ibrahim, A. K., Adams, C. E., & Glazebrook, C. (2018). A systematic review of studies of depression prevalence in university students. *Journal of psychiatric research*, *47*(3), 391–400.

Kiima, D., & Jenkins, R. (2010). Availability and utilization of mental health services at primary health care level in Kenya. Health Policy and Planning, 25(5), 405-414.

King, C. A., Gipson, P. Y., Horwitz, A., & Opperman, K. J. (2020). Teen options for change: An intervention for young emergency patients who screen positive for suicide risk. Psychiatric Services, 66(1), 97-100.

Koenen, K. C., & Ratanatharathorn, A. (2017). Follow-Up Interventions to Improve the Rate of Post-Traumatic Stress Disorder Symptoms: A Systematic Review and Meta-Analysis. 37(3), 338-352.

Kola, L., Kohrt, B. A., Hanlon, C., Naslund, J. A., Sikander, S., Balaji, M., ... & Patel, V. (2021). COVID-19 mental health impact and responses in low-income and middle-income countries: reimagining global mental health. *The Lancet Psychiatry*, *8*(6), 535-550.

Kumar, M., Nyongesa, V., Kagoya, M., Mutamba, B. B., Amugune, B., Krishnam, N. S., ... & Saxena, S. (2021). Mapping services at two Nairobi County primary health

facilities: identifying challenges and opportunities in integrated mental health care as a Universal Health Coverage (UHC) priority. *Annals of General Psychiatry*, *20*(1), 1-13.

Magill, E., Siegel, Z., & Pike, K. M. (2020). The mental health of frontline health care providers during pandemics: A rapid review of the literature. *Psychiatric Services,* 71(12), 1260-1269.

Mathai, M., Mbwayo, A., Mutavi, T., & Bukusi, D. (2022). Child and adolescent mental health in Kenya: do we need a child and adolescent mental health policy? *Child Behavioral Health in Sub-Saharan Africa*, 125–143.

McGorry, P. D., Mei, C., Chanen, A., Hodges, C., Alvarez-Jimenez, M., & Killackey, E. (2022). Designing and scaling up integrated youth mental health care. *World Psychiatry,* 21(1), 61-76.

Menear, M., Blanchette, M. A., Demers-Payette, O., & Roy, D. (2019). A framework for value-creating learning health systems. *Health research policy and systems*, *17*(1), 1-13.

Mitchell R.J., McMaugh A., Schniering C., Cameron C.M., Lystad R.P., Badgery-Parker T., Nielssen O. (2021). Mental disorders and their impact on school performance and high school completion by gender in Australia: A matched population-based cohort study. Aust N Z J Psychiatry.

Musyimi C.W., Mutiso V.N., Nandoya E.S., Ndetei D.M. (2019). Forming a joint dialogue among faith healers, traditional healers and formal health workers in mental health in a Kenyan setting: towards common grounds. J Ethnobiol Ethnomed.;12(1):4.

Mutiso, V., Musyimi, C., Rebello, T., Ogutu, M., Ruhara, R., Nyamai, D., . . . Ndetei, D. (2019). Perceived impacts as narrated by service users and providers on practice, policy and mental health system following the implementation of the mhGAP-IG using the TEAM model in a rural setting in Makueni County, Kenya: a qualitative approach. *International Journal of Mental Health Systems*, 13:56.

Mwavua, S., Ngunu, C., Gitonga, I., Royea, A., Henia, D., Chitayi, B., . . . Kumar, M. (2023). Development of a digital mental health platform in the era of COVID-19 pandemic in Kenya: findings and implications. *One-health Pan-African Medical Journal*, 11(7), 1-13.

Nadeem, E., Kataoka, S. H., & Langley, A. K. (2021). Resource Sharing and Collaboration in Children's Mental Health Services: Impacts of Pooled Funding. Health Policy and Planning, 24(5), 405–414.

Ndetei, D. M., Khasakhala, L. I., Omolo, J. O., Mutiso, V. N., & Mbwayo, A. W. (2016). The prevalence of mental disorders in adults in different level general medical facilities in Kenya: A cross-sectional study. Annals of General Psychiatry, 15(1), 19.

Ndetei, D. M., Mutiso, V., & Musyimi, C. (2016). Mental health services in Kenya: scaling-up the platform of the Africa mental health foundation. African Journal of Psychiatry, 19(2), 79-81.

Olfson, M., Marcus, S. C., Wilk, J., & West, J. C. (2022). "Continuity of antidepressant treatment for adults with depression in the United States." American Journal of Psychiatry, 163(1), 101-108.

Oliver, A. L., & Montgomery, K. (1996). A network approach to outpatient service delivery systems: resources flow and system influence. Health Services Research, 30(6), 771.

Olusunmade M., Qadir T., Akyar S., Farid A., & Aggarwal R. (2019). Incremental hospital utilization and mortality associated with co-morbid depression in pediatric hospitalizations. J Affect Disord;251:270–3.

Patel, V., Flisher, A. J., Hetrick, S., & McGorry, P. (2018). Mental health of young people: a global public-health challenge. The Lancet Psychiatry, 4(2), 88–90.

Petersen I., Lund C., & Stein D.J. (2020). Optimizing mental health services in low-income and middle-income countries. Curr Opin Psychiatry.;24:318–23.

Pfefferbaum, B., & North, C. (2020). Mental health and the COVID-19 pandemic. *N Engl J Med*, 383(6):510-512.

Pretorius, C., Chambers, D., Cowan, B., & Coyle, D. (2019). Young people seeking help online for mental health: cross-sectional survey study. *JMIR mental health*, *6*(8), e13524.

Rother, M., & Shook, J. (2003). *Learning to see: Value-stream mapping to create value and eliminate waste*. Brookline, MA: Lean Enterprise Institute.

Sadler K., Vizard T., Ford T., Marchesell F., Pearce N., & Mandalia D., (2018). Mental health of children and young people in England, 2017. Leeds: National Health Service Digital.

Seddon, P. B. (1997). A respecification and extension of the DeLone and McLean model of IS success. *Information Systems Research,* 8(3), 240-253.

Segal L, Guy S, & Furber G. (2018). What is the current level of mental health service delivery and expenditure on infants, children, adolescents, and young people in Australia? Aus N Z J Psychiatry;52:163–72.

Shook, J. F. (2010). *Managing to learn: Using the A3 management process to solve problems, gain control, and achieve breakthrough performance*. Brookline, MA: Lean Enterprise Institute.

Stirman, S. W., Buchhofer, R., McLaulin, J. B., (2019). Resource Sharing in Community Mental Health: Strategies for the Implementation of a Chronic Care Model in Rural and Low-Income Urban Settings. Psychiatric Services, 65(1), 97-100.

United Nations. (2001). World Programme of Action for Youth. Resolution A/RES/56/117.

Wang, R. Y., & Strong, D. M. (1996). Beyond accuracy: What data quality means to different users. *Information Systems Research,* 7(1), 6-38.

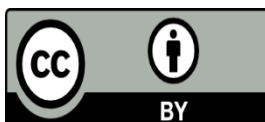Womack, J. P., & Jones, D. T. (1990). *The machine that changed the world*. New York, NY: HarperCollins.

World Health Organization (2019). Mental disorders in children and adolescents. Retrieved from https://www.who.int/news-room/fact-sheets/detail/mental-disorders-in-children-and-adolescents

World Health Organization (2020). Mental Health Atlas 2020 - Kenya Country Profile. Retrieved from https://www.who.int/mental_health/evidence/atlas/profiles-2020/KEN.pdf

World Health Organization. (2018). Mental Health of Children and Adolescents.

World Health Organization. (2021). Adolescent mental health. Available from: https://www.who.int/news-room/fact-sheets/detail/adolescent-mental-health.

Zito, M., Emanuel, F., Molino, M., Cortese, C. G., Ghislieri, C., & Colombo, L. (2018). Turnover intentions in a call center: The role of emotional dissonance, job resources, and job satisfaction. *PloS one,* 13(2), e0192126.