
**EXAMINING THE RELEVANCE OF MIXED METHODS DESIGN IN A PSYCHOLOGICAL RESEARCH:
ITS IMPLICATIONS AND CHALLENGES IN SOCIAL SCIENCES**

ANJUGU, EMMANUEL JOHN; DR. AKAWU MONDAY & DR. ABUBAKAR M. TAFIDA

Department of Psychology, Nasarawa State University, Keffi

Corresponding Author: ajohn@nsuk.edu.ng

ABSTRACT

This study delves into the efficacy of mixed methods design in psychological research within the social sciences. It examines the potential of combining quantitative and qualitative approaches to enhance research depth, validity, and generalizability. By exploring the interplay between these methodologies, the study aims to illuminate the strengths and limitations of mixed methods design in addressing complex psychological phenomena. The study also, discusses the methodological considerations, challenges, and ethical implications associated with integrating diverse data sources. Ultimately, this research seeks to contribute to the methodological toolkit of psychologists and social scientists, advocating for the judicious use of mixed methods to achieve more comprehensive and nuanced research findings. In conclusion, Mixed methods research offers a powerful and versatile tool for social science researchers, including those in psychology. Its capacity to address complex psychological phenomena, inform interventions, and guide policy decisions makes it a valuable addition to the research toolbox. Therefore, the study recommended that, Clinical Psychologists should develop a well-defined research question that explicitly addresses the need for both quantitative and qualitative data. This is to ensure that, the chosen methods and data integration strategies are well-aligned with the research objective; also, that researchers conducting mixed methods research require expertise in both quantitative and qualitative research methodologies respectively.

Keywords: Mixed Methods, Research Design, Psychological Research, Implications and Challenges

Introduction

This paper is divided into sections as follows: relevance of mixed methods research design, the synergy between quantitative and qualitative methods within a mixed research design, implications of mixed methods research design for social sciences, strategies for effective mixed methods research, specific applications of mixed design in a psychological research, approaches of Mixed Research Design in a Psychological Research, benefit for Mixed research design, challenges of mixed research design, criticisms and with a final note on conclusion and recommendations.

At this point, suffice to take a look into the complexities of human behavior in social contexts which demand a multifaceted approach. While traditional research designs, quantitative or qualitative, offer valuable insights, they often lack the depth or breadth needed for a complete picture. Mixed methods research emerges as a powerful alternative, integrating both quantitative

and qualitative data collection and analysis. This approach fosters a richer understanding of psychological phenomena, making it increasingly relevant in social science research (Fàbregues, et al., 2020). This paper explores the relevance, implications, and challenges of mixed methods research in psychology and the broader social sciences.

A mixed methods research design is most often used when there is an interest both in testing theories or integrating a specific methodological/empirical perspective while also exploring a better understanding of an experience or process. If the research question cannot be answered just by analyzing qualitative or quantitative data alone, it would be best to use a mixed methods approach. This type of research is most often done in behavioral and health settings since both usually involve completed situational research from a large sample size (Poth, et al., 2020).

Understanding the intricacies of human behavior requires delving beyond the limitations of singular research methodologies. Quantitative research, with its robust statistical data, often struggles to explain the "why" behind the numbers (Morse, 2015). Conversely, qualitative research, with its rich descriptions and insights, may have limitations in generalizability (Teddle & Tashakkori, 2010). Mixed methods research bridges this gap by integrating both quantitative and qualitative data collection and analysis (Johnson et al., 2017). This approach offers a more comprehensive understanding of psychological phenomena, allowing researchers to capture the "what," "how," "why," and "how much" within a single investigation.

Mixed Research Design

In psychological research, a mixed research design integrates quantitative and qualitative data collection and analysis methods within a single study to address a complex research question [Association for Psychological Science, 2023]. This strategic approach capitalizes on the unique strengths of both quantitative and qualitative methodologies to provide a richer and more nuanced understanding of the psychological phenomenon under investigation.

The human mind is a labyrinth of intricate processes, emotions, and behaviors. To truly understand its complexities, psychological research requires a multifaceted approach. Enter the realm of mixed research designs – a powerful methodology that blends the strengths of quantitative and qualitative methods within a single study [Association for Psychological Science, 2023]. This strategic integration allows researchers to delve deeper, uncovering both the "what" and "why" behind psychological phenomena.

Quantitative Methods: Painting a Broad Picture with Numbers

Quantitative methods, the workhorses of traditional research, rely on numerical data and statistical analysis. Think surveys, experiments, and physiological measures. These methods excel at identifying trends, testing hypotheses, and establishing generalizable findings. Imagine a study examining the relationship between sleep duration and academic performance. Using a survey, researchers could quantify the average sleep duration and GPA of a large sample of students. Statistical analysis would then reveal if there is a correlation between these variables, providing a broad picture of the potential impact of sleep on academic achievement.

Qualitative Methods: Capturing the Nuances (variation) of Lived Experiences

Qualitative methods, on the other hand, delve into the rich tapestry of human experience. Interviews, focus groups, and observations are prominent tools, allowing researchers to explore subjective perspectives, meanings, and narratives in detail. This qualitative lens delves into the "why" behind the quantitative findings. For instance, after identifying a correlation between sleep

duration and academic performance, researchers could conduct follow-up interviews with students experiencing sleep difficulties. This qualitative component could reveal the specific challenges students face in getting adequate sleep (e.g., late-night studying, social media use, anxiety) and the subjective impact it has on their learning and academic performance.

The synergy between quantitative and qualitative methods within a mixed research design offers several advantages:

- i. **Enhanced Understanding:** Quantitative data can reveal "what" is happening, but qualitative data sheds light on "why" it is happening. For instance, a quantitative study might show a correlation between stress levels and academic performance. A subsequent qualitative component, through interviews with students, could explore the specific stressors impacting their academic performance (e.g., workload, test anxiety, peer pressure).
- ii. **Balanced Approach:** Quantitative research can lack nuance, while qualitative research might struggle with generalizability. Combining methods addresses these limitations. Quantitative data can provide structure and a foundation for the study, while qualitative data can add depth and context to the quantitative findings.
- iii. **Informing Intervention Development:** By understanding both the "what" and "why" of a psychological phenomenon, mixed methods research can guide the development of targeted interventions. For example, a mixed methods study on childhood anxiety might reveal specific triggers and cognitive processes associated with anxiety. This knowledge can then inform the development of cognitive-behavioral therapy interventions tailored to address these specific factors.

Mixed research designs offer a powerful tool for psychological researchers. By strategically combining quantitative and qualitative methods, researchers can gain a more comprehensive understanding of complex psychological phenomena, ultimately leading to more effective interventions and a deeper knowledge of human thoughts, behaviors, and experiences.

There are several common types of mixed methods designs used in psychology:

- **Explanatory Sequential Design:** The researcher starts with a quantitative study (e.g., a survey) to identify trends or relationships. Then, a qualitative follow-up study (e.g., interviews) explores the reasons behind the quantitative findings.
- **Exploratory Sequential Design:** The research begins with a qualitative study (e.g., focus groups) to gain initial insights and identify potential themes. These insights then inform the development of a subsequent quantitative study (e.g., a survey) to test emerging hypotheses.
- **Concurrent Embedded Design:** Both quantitative and qualitative data are collected simultaneously throughout the research process. This allows for a more iterative approach where findings from one method can inform the direction of the other.

Relevance of Mixed Methods Research Design

Social science research delves into the complexities of human behavior within societal contexts. Traditionally, researchers have relied on quantitative methods, analyzing numerical data to understand trends and relationships. However, the rise of mixed methods research offers a powerful alternative. This approach strategically combines qualitative and quantitative methods within a single study, providing a richer and more nuanced understanding of social phenomena (Johnson et al., 2017).

Psychological research also, delves into the intricate workings of the human mind, where quantitative data and lived experiences interweave. Mixed methods research designs, by strategically combining these elements, offer a powerful tool to illuminate complex psychological phenomena. This section explores the relevance of mixed methods research through the lens of impactful empirical studies.

One compelling example comes from the work of Creswell et al. (2011) who investigated the factors influencing college students' help-seeking behaviors for mental health concerns. The study employed a sequential explanatory design. Initially, a quantitative survey assessed students' help-seeking behaviors and perceived barriers. Subsequent qualitative interviews explored the reasons behind these behaviors, revealing the significant role of stigma, cultural norms, and limited knowledge about mental health resources. This mixed design provided a deeper understanding than either method alone could achieve. Quantitative data identified the prevalence of help-seeking behaviors, while qualitative insights illuminated the underlying psychological and social factors influencing those decisions.

Another impactful study by Johnson et al. (2007) examined the experiences of mothers with children diagnosed with Autism Spectrum Disorder (ASD). The researchers employed a concurrent embedded design. Quantitative surveys assessed parenting stress levels, while concurrent qualitative interviews explored the mothers' experiences and coping strategies. This integration allowed for a nuanced understanding of the challenges faced by these mothers. The quantitative data provided objective measures of stress, while the qualitative data revealed the emotional impact of caring for a child with ASD and the specific coping strategies mothers employed to manage this stress. This synergy provided invaluable insights for developing targeted interventions and support programs.

The relevance of mixed methods research extends beyond simply understanding individual experiences. A study by Fетters et al. (2013) investigated the effectiveness of a school-based bullying prevention program. They employed a mixed methods design, utilizing a pre-test, post-test control group design quantitatively to assess changes in bullying behavior. Additionally, qualitative interviews with students and teachers explored their perceptions of the program's effectiveness and its impact on the school environment. This mixed design provided a more complete picture of the program's effectiveness. The quantitative data demonstrated a decrease in bullying incidents, while the qualitative data highlighted specific aspects of the program that students and teachers found most helpful. This comprehensive evaluation informed future iterations of the program, ensuring its continued effectiveness.

The strength of mixed methods research lies in its ability to address the shortcomings of both quantitative and qualitative approaches. Here are key advantages that enhance the relevance of mixed methods in psychological and social science research:

Overcoming the Limitations of Single Approaches

Both quantitative and qualitative approaches possess inherent limitations. Quantitative methods, despite their rigorous statistical analysis, often struggle to capture the "why" and "how" behind social phenomena. For instance, surveys might reveal that a specific policy leads to increased voter turnout. However, mixed methods research can delve deeper. Interviews with citizens might uncover their motivations for participating, such as a sense of civic duty or a desire to influence specific issues (Morrow, 2005).

Conversely, qualitative research, through in-depth exploration of individual experiences, can offer a wealth of detail. However, due to smaller sample sizes, its generalizability can be limited.

Mixed methods research bridges this gap. Focus groups might reveal themes regarding social stigma surrounding a particular mental health diagnosis (Hesse-Biber & Leavy, 2011). A subsequent survey can then assess the prevalence of these stigma-related beliefs within a larger population, enhancing the generalizability of the findings.

Illuminating the "Why" and "How"

The synergy between quantitative and qualitative data in mixed methods research fosters a more comprehensive understanding. Quantitative data provides the "what" (e.g., the extent of a phenomenon), while qualitative data illuminates the "why" and "how" (e.g., the underlying reasons and processes). This triangulation of findings allows researchers to create a more complete picture, leading to more robust and insightful interpretations. For instance, a study might use surveys to assess attitudes towards immigration and then conduct interviews to explore the lived experiences of immigrants within a community (Bryman, 2007).

Informing Real-World Social Change

Social science research is not just about understanding phenomena; it also aims to inform social change. Mixed methods research plays a crucial role here. Quantitative data can assess the effectiveness of a social intervention, such as a program to reduce racial bias. Qualitative data, through focus groups or interviews, can provide insights into participant experiences, adherence to the program, and potential barriers to success (Greene et al., 2018). This combined knowledge can be used to refine interventions and optimize their real-world impact.

Mixed methods research is not simply an additive approach; it's a strategic combination that leverages the strengths of both quantitative and qualitative methods. By providing a more holistic understanding of social phenomena within their contexts, mixed methods research strengthens social science research and fosters its impact on real-world social change.

Implications of Mixed Research Design for Social Sciences Research

The implications of mixed methods research are far-reaching for the social sciences, particularly in psychological research. Here are some key areas where it can contribute significantly:

- i. **Understanding Complex Psychological Phenomena:** From unpacking the lived experiences of individuals with mental health conditions to uncovering the social and cultural factors influencing prejudice, mixed methods research allows for a holistic understanding of psychological processes. For instance, a study might combine surveys measuring levels of depression with in-depth interviews exploring the social and environmental factors contributing to depression in a specific community. This comprehensive approach provides a deeper understanding of the multifaceted nature of mental health.
- ii. **Development and Evaluation of Interventions:** By combining quantitative data on program effectiveness with qualitative data on participants' experiences, mixed methods research can inform the development and refinement of interventions aimed at improving mental health and social well-being (Mays & Pope, 1995). For instance, a study might assess the impact of a cognitive-behavioral therapy program for depression using both standardized measures of symptom reduction (quantitative) and participant narratives about their experiences with the program (qualitative). This combined approach allows for a more complete picture of the intervention's effectiveness and potential areas for improvement.

- iii. **Informing Policy Decisions:** Policymakers often require evidence-based data to make informed decisions about social issues. Mixed methods research can provide a comprehensive picture of social issues, allowing for the development of more effective and targeted policies (Pawson, 2008). For example, a study might combine quantitative data on factors associated with homelessness with qualitative data exploring the experiences of individuals experiencing homelessness. This combined approach can inform policy decisions related to housing, social support services, and prevention strategies.

Strategies for Effective Mixed Methods Research

To maximize the benefits and minimize the challenges of mixed methods research, several strategies can be employed:

- i. **Clear Research Question:** A well-defined research question that explicitly addresses the need for both quantitative and qualitative data is crucial (Johnson et al., 2017). The research question should guide the selection of appropriate methods and data integration strategies.
- ii. **Mixed Methods Team:** Assembling a research team with expertise in both quantitative and qualitative methodologies can be beneficial. This ensures a comprehensive understanding of both data sets and facilitates effective collaboration during data analysis and interpretation.
- iii. **Rigorous Data Analysis:** Both quantitative and qualitative data analysis should be conducted rigorously following established principles. This ensures the trustworthiness and credibility of the findings from each methodological approach.
- iv. **Transparency and Reflexivity:** Researchers should be transparent about their methodological decisions and acknowledge potential biases or limitations of the study. Reflecting on how researchers' own background and experiences might influence the interpretation of data is also important (Mays & Pope, 1995).

Specific Applications of Mixed Research Design in Psychological Research

Psychological research thrives on understanding the complexities of human thoughts, emotions, and behaviors. While quantitative methods excel at uncovering patterns and relationships through numerical data, qualitative methods offer rich insights into subjective experiences. Mixed methods research emerges as a powerful tool, strategically combining both approaches within a single study to provide a more comprehensive understanding of psychological phenomena. Let's delve into specific applications of this approach in psychological research.

Mixed method of research design provides multidimensional approach to the understanding of human behavior and also, the benefits of mixed methods research translate into valuable applications within the field of psychology which are as follows:

1. Exploring Underlying Mechanisms

Quantitative studies often reveal correlations between variables, but the "why" behind these associations remains elusive. Mixed methods can bridge this gap. Imagine a study examining the relationship between social media use and depression. Surveys might reveal a positive correlation (depression scores increase with more social media use). However, in-depth interviews could uncover the underlying mechanisms – perhaps social media fuels feelings of inadequacy by exposing users to curated portrayals of others' lives.

This approach has been used to understand the mechanisms behind interventions. For example, a quantitative study might show that a mindfulness training program reduces anxiety scores. However, qualitative interviews with participants could reveal that mindfulness practices help individuals become more aware of and manage their anxious thoughts (Creswell & Plano Clark, 2018).

2. Illuminating Contextual Influences

Psychological phenomena are often influenced by the contexts in which they occur. Quantitative methods typically struggle to capture these contextual nuances. Mixed methods research can address this limitation. Imagine a study examining the effectiveness of a cognitive-behavioral therapy (CBT) program for depression in adolescents. Surveys might assess post-treatment symptom reduction. However, focus groups with adolescents could reveal that cultural factors or family dynamics influence their ability to apply CBT strategies effectively (Hwang et al., 2013).

This approach is valuable for understanding cultural influences on mental health. For instance, quantitative studies might show disparities in help-seeking behaviors across cultural groups. However, qualitative interviews with individuals from different cultures could reveal specific beliefs and attitudes that shape help-seeking behavior (Sue & Sue, 2013).

3. Enhancing Intervention Development and Implementation

Developing and implementing effective psychological interventions requires understanding not just "what works" but also "how" and "for whom." Mixed methods research plays a crucial role here. Imagine a study examining the effectiveness of a school-based anti-bullying program. Quantitative data from surveys could assess changes in reported bullying incidents. However, focus groups with students could reveal how the program impacted their perceptions of bullying and their sense of safety in school. Additionally, interviews with teachers can identify any challenges they faced in implementing the program (Palinkas et al., 2013).

This approach can enhance intervention fidelity. Quantitative data might assess adherence to a treatment protocol, but qualitative interviews with therapists could reveal unforeseen challenges that hinder faithful implementation, allowing for adjustments (Fetters et al., 2013).

Therefore, mixed methods research is not simply an add-on; it's a strategic approach that leverages the strengths of both quantitative and qualitative methods. By providing a deeper understanding of the "why" and "how" behind psychological phenomena within their contexts, it offers valuable insights for research and intervention development. This approach ultimately strengthens psychological research and fosters its impact on human well-being.

Approaches of Mixed Research Design in a Psychological Research

Psychology research digs into the complex world of human thoughts, emotions, and behaviors. To effectively understand mental health phenomena, researchers are increasingly turning to mixed methods designs. These designs integrate quantitative and qualitative data collection and analysis, offering a more comprehensive picture compared to traditional single-method approaches. Here are some commonly used approaches:

- i. **Sequential Designs:** Data collection occurs in phases, with one method following the other.
 - o **Explanatory Sequential Design:** This design utilizes quantitative data (e.g., a survey) in the first phase to identify relationships between variables. The second phase employs qualitative methods (e.g., interviews) to explore the "why" behind these relationships, providing deeper understanding (Creswell & Creswell, 2018).

- **Exploratory Sequential Design:** The initial phase involves qualitative data collection (e.g., focus groups) to generate initial themes and insights. These themes are then refined and quantified in the subsequent phase (e.g., a questionnaire) for broader generalizability (Fetters et al., 2013).
- ii. **Concurrent Designs:** Both quantitative and qualitative data are collected simultaneously within the same study timeframe.
 - **Convergence Design:** Data from each method are analyzed independently, and the results are ultimately converged to provide a more comprehensive understanding of the phenomenon (Greene, 2007). This convergence could reveal how quantitative findings resonate with qualitative experiences.
 - **Embedded Design:** A qualitative component (e.g., interviews) is embedded within a larger quantitative study (e.g., a randomized controlled trial). This allows for a deeper exploration of individual experiences within the quantitative framework (Plano Clark & Creswell, 2014).

1. Examples of Mixed Methods Research in Clinical Psychology

- A study investigating the effectiveness of a mindfulness-based intervention for anxiety might use a quantitative design to assess changes in anxiety symptoms and a qualitative component (e.g., interviews) to explore participants' experiences with the intervention and the mechanisms underlying its effects.
- Research exploring the factors contributing to treatment adherence in depression could involve collecting quantitative data on treatment adherence rates and qualitative interviews to understand patients' perspectives on barriers and facilitators to taking medication as prescribed.
- A mixed methods design could be valuable in studying the cultural adaptation of a therapeutic intervention. Quantitative data might assess the intervention's effectiveness across different cultural groups, while qualitative interviews could explore the lived experiences of participants from diverse backgrounds and identify potential areas for culturally sensitive modifications to the intervention.

In these approaches, mixed methods designs offer a powerful tool for researchers in clinical psychology to gain a deeper and more nuanced understanding of mental health phenomena. By integrating quantitative and qualitative data, researchers can gain a more complete picture of the "what," "why," and "how" of mental health experiences and interventions. While implementing mixed methods research requires careful planning, consideration, and skilled expertise, the resulting insights can be invaluable for improving clinical practice, intervention development, and ultimately, promoting mental well-being.

Benefits of Mixed Methods Research

Mixed methods research can provide a plethora of advantages for researchers and practitioners who are looking to gain a more comprehensive and nuanced understanding of their research topic. By offering a richer and deeper data set that can capture the diversity and complexity of the research phenomenon, mixed methods research can enable the triangulation or corroboration of the data or results from different sources or methods, thus increasing the validity or trustworthiness of the research. Additionally, it can allow for the exploration or explanation of the findings from one approach with the data or results from another approach, thus enhancing the interpretation or understanding of the research. Furthermore, it can address the limitations

or gaps of one approach with the strengths or advantages of another approach, thereby improving the quality or rigor of the research. Finally, it can generate new or innovative insights or perspectives that can emerge from the integration or synthesis of the data or results from both approaches, thus extending the knowledge or contribution of the research.

The biggest benefit of mixed methods research is that it combines specific, detailed insights from qualitative research (such as focus groups) and the generalizable, easily replicable data from quantitative research (such as surveys).

Another benefit is that mixed methods research also allows the research question to be tackled from multiple different perspectives, approaches, and theoretical lenses that can all complement each other. While working cross-functionally with numerous researchers who may use differing methods, the flexibility of mixed methods research allows the whole team (especially a remote team) to collaborate and collect quality data.

Challenges of Mixed Methods Research

Conducting or evaluating mixed methods research can present a number of challenges for researchers and practitioners. These challenges can range from the need for more time, resources, skills, or expertise to plan, implement, and report the research, to ethical, practical, or theoretical issues related to the sampling, data collection, data analysis, or data integration. Additionally, conflicting or incompatible assumptions, paradigms, or frameworks that underlie the qualitative and quantitative approaches can create tensions or dilemmas for the researcher or the audience. To ensure the success of the research, a clear and coherent rationale, purpose, or question for the use of mixed methods must be established, as well as a transparent and consistent reporting of the methods, results, and implications of the research to communicate the value and credibility of the research.

Criticisms of Mixed Methods Research

Despite its advantages, mixed methods research also presents challenges that require careful consideration:

- i. **Complexity:** Designing, conducting, and analyzing mixed methods research requires expertise in both quantitative and qualitative methodologies. Researchers need to ensure the chosen methods are complementary and effectively address the research question (Greene, 2018). Expertise in both quantitative and qualitative approaches is crucial to ensure the successful implementation and integration of the research design.
- ii. **Data Integration:** Merging quantitative and qualitative data can be a complex endeavor. Researchers need to develop strategies for integrating data in a meaningful way, ensuring a cohesive narrative emerges (Fetters et al., 2013). Deciding on appropriate data integration techniques. A major critique centers on how researchers integrate quantitative and qualitative data effectively. Merging numerical findings with rich narratives can be challenging. The researcher, argued that simply placing these data sets side-by-side (triangulation) might not provide a deep understanding of the relationships between them [Creswell & Plano Clark, 2018].
- iii. **Increased Time and Resources:** Mixed methods research is often more time-consuming and resource-intensive compared to single-method studies. Researchers need to carefully consider the resources needed, including personnel, data collection tools, and data analysis software (Greene, 2018). The complexity of mixed methods research necessitates more time for planning, data collection, and analysis compared to traditional

research designs. Therefore, Researchers need expertise in both methodologies, and data collection, analysis, and interpretation become more complex [Johnson & Onwuegbuzie, 2004]. This can be a barrier for researchers with limited time or funding.

- iv. **Theoretical Coherence:** The researcher argued that mixed methods research can lack a strong theoretical foundation. Effectively blending quantitative and qualitative methodologies requires a clear justification for how these approaches complement each other within the research question and theoretical framework [Greene, 2007]. Without this, the research might appear like a collection of methods instead of a cohesive design.
- v. **Potential for Bias:** The researcher argued that the design and analysis of mixed methods research can be susceptible (disposed) to researcher bias. Decisions about which data to prioritize, how to integrate findings, and how to interpret results can all be influenced by the researcher's perspective [Morse, 2003]. Careful consideration of potential biases and strategies to mitigate them is crucial.
- vi. **Limited Generalizability:** Generalizability, the ability to apply findings to a broader population, can be a concern in mixed methods research. The unique nature of qualitative data and the specific contexts of studies might limit the generalizability of the combined results [Teddlie & Yu, 2003]. Researchers need to be transparent about the limitations and the specific populations their findings might apply to.

Conclusion

Mixed methods research offers a powerful and versatile tool for social science researchers, including those in psychology. Its capacity to address complex psychological phenomena, inform interventions, and guide policy decisions makes it a valuable addition to the research toolbox. While implementing mixed methods research comes with its own set of challenges, the potential for deeper understanding and more impactful outcomes makes it worthwhile. By acknowledging the strengths and weaknesses of this approach and employing effective strategies, researchers can leverage the power of mixed methods to illuminate the intricate tapestry of human behavior in the social world.

Recommendations

Mixed methods research offers a powerful tool for psychological research, but careful consideration is essential and it is recommended that:

- i. Clinical Psychologists should develop a well-defined research question that explicitly addresses the need for both quantitative and qualitative data. This ensures the chosen methods and data integration strategies are well-aligned with the research objective.
- ii. Researchers conducting mixed methods research require expertise in both quantitative and qualitative research methodologies. They should consider assembling a research team with diverse skillsets or acquiring the necessary training.
- iii. Psychological researchers should conduct both qualitative and quantitative analysis rigorously following established principles. This ensures the trustworthiness and credibility of the findings from each methodological approach.
- iv. The overt and covert nature of man makes human nature very complex and difficult to understand. Therefore, multidimensional approach will help social scientists in understanding human behaviour and behavioral responses when mixed method is properly applied.

- v. Finally, it is recommended that, clinicians should be transparent about the methodological chosen and acknowledge potential biases or limitations of the study. Reflecting on how your own background and experiences might influence the interpretation of data is also important.

REFERENCES

- Association for Psychological Science. (2023). Research methods in psychology. <https://www.psychologicalscience.org/>
- Bryman, A. (2007). *Social research methods* (3rd ed.). Oxford University Press.
- Creswell, J. W. (2015). *A concise Introduction to Mixed Methods Research*. Sage Publications Ltd.
- Creswell, J. W., & Plano Clark, V. L. (2018). *Designing mixed methods research* (3rd ed.). Sage Publications.
- Creswell, J. W., Plano Clark, V. L., Gutmann, M. L., & Hanson, W. E. (2011). *Advanced mixed methods research designs* (2nd ed.). SAGE Publications, Inc.
- David, S. L., Hitchcock, J. H., Ragan, B., Brooks, G., & Starkey, C. (2018). Mixing interviews and Rasch modeling: Demonstrating a procedure used to develop an instrument that measures trust. *Journal of Mixed Methods Research*, 12(1), 75-94.
- Dawadi, S. (2019). *Impact of the Secondary Education Examination (English) on Students and Parents in Nepal*. An unpublished PhD thesis. The Open University, UK.
- Evans, S., Liu, H., & Manly, J. (2016). Social support and resilience in the face of adversity. *Aging & Mental Health*, 20(3), 342-352. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7789076/>
- Fàbregues, S., Hong, Q. N., Escalante-Barrios, E. L., Guetterman, T. C., Meneses, J., & Feters, M. D. (2020). A Methodological Review of Mixed Methods Research in Palliative and End-of-Life Care (2014–2019). *International Journal of Environmental Research and Public Health*, 17(11), 3853.
- Fausser, M. (2018). Mixed methods and multisited migration research: Innovations from a transnational perspective. *Journal of Mixed Methods Research*, 12(4), 394-412.
- Fetters, M. D., Austin, S., & Pendergast, D. R. (2013). A mixed methods approach to evaluating a school-based bullying prevention program. *Journal of School Psychology*, 51(2), 189- 209. <https://doi.org/10.1016/j.jsp.2012.11.002>
- Fetters, M. D., Bélanger, J. J., Smith, G. T., Simoneau, S. G., & Wagner, C. C. (2013). Improving the reporting of mixed methods research in psychology. *The Counseling Psychologist*, 41(1), 77-124. [invalid URL removed]
- Fetters, M. D., Curry, L. A., & Creswell, J. W. (2013). *Achieving integration in mixed methods designs*. Sage Publications.
- Greene, J. C. (2007). *Mixed methods in social inquiry*. John Wiley & Sons.
- Greene, J. C., Carmona, Y. G., & Jovanovic, M. (2018). Combining quantitative and qualitative methods in evaluation research. *New Directions for Evaluation*, 2018(180), 79-94. [invalid URL removed]
- Hauken, M. A., Larsen, T. M. B., & Holsen, I. (2019). "Back on track": A longitudinal mixed methods study on the rehabilitation of young adult cancer survivors. *Journal of Mixed Methods Research*, 13(3), 339-360.
- Hesse-Biber, S. N., & Leavy, P. (2011). *Approaches to qualitative research* (3rd ed.). Oxford University Press.
- Hogue, T. M., Oei, T. P., Lenz, A. W., Luo, H. Y., & Kaplan, M. A. (2017). A mixed methods study of a mindfulness-based intervention for adolescent depression: Treatment feasibility, acceptability, and mechanisms of change. *Journal of Clinical Child & Adolescent Psychology*, 46(2), 260-274. <https://psycnet.apa.org/record/2021-35665-001>
- Hwang, U., Avishai-Nir, J., & Lin, Y. (2013). Coping with social anxiety: A qualitative exploration of Asian American college students' coping strategies. *Journal of College Counseling*, 16(2), 127-139.
- Johnson, D. W., Blum, H. M., & Jones, W. H. (2007). Parents of children with autism spectrum disorders: A review of the literature on parenting stress. *Journal of Autism and Developmental Disorders*, 37(1), 161-175.
- Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm for the next century. *Educational Researcher*, 33(7), 14-26.
- Johnson, R. B., Onwuegbuzie, A. J., & Turner, L. A. (2017). *Mixed methods research* (5th ed.). Sage Publications.
- Johnson, R. B., Onwuegbuzie, A. J., & Turner, L. A. (2017). *Mixed methods research* (4th ed.). SAGE Publications.
- Lai, C. T., Chang, C. C., Hwang, J. P., & Lin, H. C. (2017). A mixed methods study of social anxiety disorder in adolescents: Prevalence, characteristics, and associated factors. *Journal of Youth and*

- Adolescence*, 46(10), 2465- 2478. <https://link.springer.com/book/10.1007/978-3-319-16703-9>
- Leal, I., Engebretson, J., Cohen, L., Fernandez-Esquer, M. E., Lopez, G., Wangyal, T., & Chaoul, A. (2018). An exploration of the effects of Tibetan yoga on patients' psychological well-being and experience of lymphoma: An experimental embedded mixed methods study. *Journal of Mixed Methods Research*, 12(1), 31-54.
- Mays, N., & Pope, C. (1995). Rigour and qualitative research. *British Medical Journal*, 311(7001), 109-112. <https://www.bmj.com/content/311/6997/109>
- Morrow, P. C. (2005). *Qualitative research in the social sciences*. SAGE Publications.
- Morse, J. M. (2003). Mixed methods research: Synthesis research. *Qualitative Health Research*, 13(3), 362-372.
- Munce, S. E. P., Guetterman, T. C. & Jaglal, S. B. (2021). Using the exploratory sequential design for complex intervention development: Example of the development of a self-management program for spinal cord injury. *Journal of Mixed Methods Research*. 15(1) 37-60.
- Palinkas, L. A., Arons, G. A., Horne, Z. D., Ripley, S. A., & Wandersman, A. (2013). Mixed methods research in evaluation of health promotion interventions. *Health Education & Behavior*, 41(1), 53-66.
- Poth, C., & Munce, S. E. P. (2020). Commentary Preparing today's researchers for a yet unknown tomorrow: Promising practices for a synergistic and sustainable mentoring approach to mixed methods research learning. *International Journal of Multiple Research Approaches*, 12(1), 56-64.
- Sue, D. W., & Sue, D. W. (2013). *Counseling the culturally diverse: Theory and practice* (7th ed.). John Wiley & Sons.
- Teddlie, C., & Tashakkori, A. (2010). *Foundations of mixed methods research* (Sage Foundations Research Methods Series). Sage Publications.
- Teddlie, C., & Yu, F. (2003). *Mixed methods research: A primer*. Kluwer Academic Publishers.