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Exploration of Ordinal to Interval Data Transformation in Psychological Data Processing

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ABSTRACT

The transformation of ordinal data into interval data is a crucial step in statistical analysis, particularly for achieving more accurate measurements and making data-driven decisions. The Method of Successive Interval (MSI) has been identified as an effective approach to accomplish this transformation. This literature review aims to explore recent studies on MSI, assess its effectiveness in converting ordinal data, and identify research gaps and future research opportunities. Using a literature review method, 15 peer-reviewed articles from 2020 to 2024 were analyzed. The findings indicate that MSI not only enhances measurement accuracy but also broadens the application of statistical analysis across various fields, including guidance and counseling. This contributes to improving the validity and reliability of the instruments used, thereby enabling the formulation of interventions tailored to students' needs.

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1. INTRODUCTION

The transformation of ordinal data into interval data has become an increasingly important topic in statistical research and data analysis. Ordinal data, often used in surveys and questionnaires, provides information about order but does not offer equal spacing between categories. In contrast, interval data enables more in-depth analysis and the use of more complex statistical methods, such as regression analysis and ANOVA. Therefore, converting ordinal data into interval data is crucial for improving the validity and reliability of research results (Izzati *et al*., 2024; Truong *et al*., 2023).

The Method of Successive Interval (MSI) has emerged as one of the most effective techniques for this transformation. MSI works by converting the cumulative proportions of each ordinal category into values on the standard normal curve, allowing researchers to treat ordinal data as if it were interval data (Izzati *et al*., 2024). Previous studies have shown that using MSI can reduce measurement errors associated with raw ordinal scores and make the data more suitable for parametric statistical analysis (Truong *et al*., 2023).

However, despite its many advantages, some studies have identified potential issues related to treating ordinal data as interval data. Howcroft and Rieser (2021) caution that although MSI can enhance analysis, there is a risk that the results may not be entirely accurate if the underlying assumptions of data treatment are not met. This highlights the need for a better understanding of MSI's limitations and the contexts in which this method is most effective.

Furthermore, research by Akbar *et al*. (2020) demonstrates that MSI can be applied in analyzing user experiences with applications, where ordinal data from user surveys can be transformed into interval data for deeper analysis. Consequently, MSI can help application developers understand user needs and preferences, as well as improve app design and functionality. This underscores the relevance of MSI in the context of information technology and software development.

In this literature review, we will discuss various studies conducted on MSI and the transformation of ordinal data. These studies span multiple fields, including psychology, education, and social sciences, showcasing the flexibility and relevance of MSI across different contexts. The goal of this review is to identify trends, gaps, and recommendations for future research in the field of guidance and counseling related to the transformation of ordinal data into interval data using MSI.

In psychological research, Likert scales are often used to measure constructs such as attitudes, perceptions, and personality traits. However, the ordinal data produced by these scales has limitations, particularly in advanced statistical analysis, because the distances between response categories are inconsistent (Bishop and Herron, 2015). To address this issue, transforming ordinal data into interval data through the Method of Successive Interval (MSI) becomes a crucial solution. This transformation allows researchers to conduct parametric analyses, such as regression or factor analysis, more accurately.

The application of MSI in psychological research provides more precise measurements of constructs such as anxiety levels, depression, psychological well-being, or self-concept. This is especially important because psychological constructs are latent and require more detailed measurement to accurately capture individual variations. By using MSI, the resulting interval data can more accurately reflect the psychological distance between responses, thereby enhancing the validity and reliability of research findings (Sawada et al., 2022).

2. METHODS

Method used is a literature review. The literature selection process began with a systematic search in academic databases such as Google Scholar, JSTOR, and ScienceDirect, using keywords like "Ordinal to Interval Data Transformation" and "Method of Successive Interval." Inclusion criteria included peer-reviewed articles published between 2020 and 2024 that discussed MSI or the transformation of ordinal data into interval data. Articles that were irrelevant or did not meet quality criteria were excluded.

After the initial screening process, articles that met the criteria were identified and analyzed. Data from these articles were collected and synthesized to identify key findings, trends, and research gaps. The results of the analysis of 15 selected articles are presented in a narrative discussion to provide a comprehensive overview of the current state of research on MSI in the field of guidance and counseling.

3. FINDINGS AND DISCUSSIONS

3.1. Findings

MSI has been applied across various fields, including education. Here are summarized of the 15 selected articles about MSI in the field of guidance and counseling, listed in **Table 1**.

Table 1. Literature Review Results.

No.	Author	Summary
1	(Truong *et al*., 2023)	MSI reduces measurement errors in cognitive data analysis.
2	(Ismaeni *et al*., 2024)	MSI enhances student learning outcomes by providing more accurate data for analysis.
3	(Akbar *et al*., 2020)	Applying MSI in student learning outcome analysis offers better insights into teaching method effectiveness.
4	(Ifnaldi, 2022)	MSI allows deeper analysis of the role of guidance and counseling teachers in preventing student misbehavior.
5	(Putranti, 2021)	Valid and reliable data transformation improves school leadership support in guidance and counseling programs.
6	(Kurniady *et al*., 2023)	MSI plays a crucial role in ensuring valid and reliable assessments of psychological factors, which are essential for improving counseling service quality in educational settings.
7	(Pambudi and Amini, 2021)	Transforming ordinal data strengthens collaboration between school principals and guidance counselors.
8	(Hutabarat *et al*., 2024)	MSI facilitates measuring changes in self-concept before and after counseling interventions.

9	(Auladi *et al*., 2023)	MSI supports evaluating the effectiveness of sociodrama techniques in improving students' self-concept.
10	(Nugroho *et al*., 2021)	Transforming ordinal data into interval data improves the assessment of guidance and counseling program effectiveness.
11	(Kusmini, 2023)	Weekly monitoring of teachers' counseling abilities generates ordinal data, and MSI enables deeper analysis of counseling effectiveness.
12	(Hidayati *et al*., 2023)	MSI provides a more detailed analysis of how behavior counseling influences students' learning motivation.
13	(Sujuti, 2022)	MSI allows deeper evaluation of teachers' professional competence in guidance and counseling.
14	(Perdana and Daulay, 2023)	Transforming ordinal data helps analyze the effectiveness of Hypnocounseling in shaping student character.
15	(Sari et al., 2020)	MSI enables a more comprehensive analysis of solution-focused brief group counseling effectiveness.

Research by Truong *et al*., (2023) demonstrated that the use of MSI in cognitive data analysis can reduce measurement errors often associated with ordinal data. Additionally, a study by (Ismaeni *et al*., 2024) indicated that MSI could enhance student learning outcomes by providing more accurate data for analysis. In the field of education, research by Akbar *et al*., (2020) showed that applying MSI in analyzing student learning outcomes can offer better insights into the effectiveness of teaching methods. By transforming ordinal data from student assessments into interval data, researchers can conduct more in-depth analyses of factors affecting learning outcomes. This suggests that MSI can contribute to developing more effective and data-driven teaching methods.

Transforming ordinal data into interval data in the context of guidance and counseling is a vital approach to improving the validity of measurement and evaluation instruments. Ordinal data, often used in surveys and questionnaires, provides information about order but not the distance between categories. Therefore, converting it to an interval scale can offer deeper and more accurate analysis. Several studies highlight the importance of developing valid and reliable instruments to support effective guidance and counseling practices. In this context, it is essential to understand that transforming ordinal data into interval data not only improves measurement accuracy but also provides deeper insights into students' needs.

In practice, transforming ordinal data into interval data can be done using various methods, including regression analysis and factor analysis. These methods allow researchers to identify patterns and relationships that might not be apparent in ordinal data. For example, research by Ifnaldi (2022) showed that the role of guidance and counseling teachers in preventing student misbehavior can be analyzed more thoroughly using transformed data. This approach enables the formulation of more precise interventions to address students' issues.

Putranti (2021) highlighted the role of school principals in implementing guidance and counseling programs, emphasizing that managerial support is crucial for the program's success. This support also includes the use of valid and reliable data for better decision-making.

Furthermore, research by Kurniady *et al*., (2023) emphasized that the psychological well-being of guidance and counseling teachers affects their competence in providing services. Therefore, maintaining counselors' mental health is essential for delivering optimal services. This study revealed a connection between counselors' mental health and the effectiveness of the guidance and counseling programs they manage. Thus, transforming ordinal data into interval data can also be used to evaluate these aspects in a broader context.

To enhance the effectiveness of guidance and counseling, it is important to involve various stakeholders, including principals, teachers, and parents. Research by Pambudi and Amini (2021) showed that collaboration between school principals and guidance and counseling teachers can improve the management of guidance and counseling services. By involving multiple parties, the data collected can be more representative and accurately reflect students' needs.

Hutabarat *et al*. (2024) investigated the effectiveness of group counseling services using assertive training techniques to address students' negative self-concept. This study indicated that appropriate interventions can help students develop a more positive self-concept. By using MSI, researchers can measure changes in self-concept before and after the intervention, providing insights into the effectiveness of this approach.

Auladi *et al*. (2023) explored the impact of group guidance services using sociodrama techniques in improving students' self-concept. The study revealed that proper interventions can help students develop a better self-concept. With MSI, researchers can measure changes in students' self-concept before and after the intervention, offering insights into the effectiveness of the approach.

Nugroho *et al*. (2021) conducted a systematic literature review to identify various issues in implementing guidance and counseling programs in high schools. This study showed that using ordinal data to assess program effectiveness is crucial but often not well-processed (D. Nugroho et al., 2021). Therefore, transforming ordinal data into interval data can help provide a clearer picture of program effectiveness and assist guidance counselors in designing more appropriate interventions.

Kusmini (2023) also emphasized the importance of improving guidance counselors' abilities to provide effective counseling. In her research, she used a quantitative approach to evaluate teachers' ability to deliver counseling through weekly work monitoring. The data obtained from this survey can be categorized as ordinal data, and transforming it into interval data can offer a deeper analysis of counseling effectiveness. This shows that understanding the transformation of ordinal data into interval data can enhance the quality of guidance and counseling services in schools.

Additionally, research by Hidayati *et al*. (2023) demonstrated that behavior counseling strategies could increase students' learning motivation. In this study, data collected from observations and interviews were categorized as ordinal data, and transforming it into interval data provided a more comprehensive analysis of counseling services' impact on students' learning motivation. Therefore, understanding the transformation of ordinal data into interval data is essential for designing more effective guidance and counseling interventions.

Sujuti (2022) also highlighted the importance of professional competence among guidance and counseling teachers in developing service programs. His research observed that only a small number of teachers effectively prepared guidance and counseling service plans. The data collected were categorized as ordinal data, and transforming it into interval data allowed for a deeper analysis of the factors influencing service quality. This indicates that

understanding the transformation of ordinal data into interval data can help improve the competence of guidance and counseling teachers.

In the context of Islamic counseling, research by Perdana and Daulay (2023) showed the effectiveness of Hypnocounseling techniques in shaping students' character. Using a qualitative descriptive method, researchers collected ordinal data that could later be transformed into interval data for more in-depth analysis. This demonstrates that understanding the transformation of ordinal data into interval data is crucial in the context of counseling to improve service effectiveness.

Lastly, research by Sari et al. (2020) on solution-focused brief group counseling showed that using puppet media could reduce student aggression. In this study, the data collected were categorized as ordinal data, and transforming it into interval data provided a more comprehensive analysis of intervention effectiveness. This shows that transforming ordinal data into interval data can help design more effective counseling programs.

3.2. Disscussions

In the contemporary psychological landscape, the transformation of ordinal data to interval data has gained prominence, particularly within the context of guidance and counseling. This transition offers a more nuanced understanding of psychological constructs, which is essential for creating effective interventions and measuring their impact accurately. The exploration of these transformations is critical when evaluating educational and counseling methodologies, which often rely heavily on qualitative feedback rendered into quantifiable metrics. By employing statistical techniques such as the Rasch model, researchers have established that ordinal data can be effectively converted into interval data, thus enhancing the precision of psychological assessments and interventions (Saputra *et al*., 2023).

The foundational reason for pursuing such transformations lies in the inherent limitations of ordinal measurements, which only indicate order without quantifying the distance between ranks. For instance, instruments designed to gauge student learning outcomes or counseling effectiveness often utilize Likert scales, which yield ordinal data. This type of data may misrepresent subtle differences in student performance or intervention efficacy, leading to errors in data interpretation and subsequent decision-making (Truong *et al*., 2023). By transforming this ordinal data into interval data, one can clarify these distinctions, thereby equipping educators and counselors with more accurate and relevant information to guide their practices (Saputra *et al*., 2023).

Research conducted by Truong et al. illustrates that interval-level data is not merely a statistical abstraction; it reflects real-world phenomena with greater fidelity compared to its ordinal counterparts. Their study documented the successful application of Rasch methodology to transition scores on cognitive decline assessments into a usable interval format, underscoring the practical implications of such transformations in clinical settings (Truong *et al*., 2023). Within educational environments, this translated into enhanced assessments of student learning outcomes, contributing towards informed pedagogical strategies that respond to the diverse needs of learners (Saputra *et al*., 2023).

Moreover, the integration of various evaluation methodologies in educational frameworks facilitates the direct impact of transformed data on practical outcomes, enabling educators to base their interventions on robust, data-driven insights (Saputra *et al*., 2023). By employing systematic methodologies such as regression and factor analysis, practitioners can uncover deeper correlations between student assessments and instructional methodologies.

Specifically, this approach magnifies the pathways through which different teaching styles and interventions affect student outcomes, thereby promoting a more adaptive educational landscape (Saputra *et al*., 2023).

In the scope of guidance and counseling, the transformation of ordinal data to interval data not only boosts the validity of measurement instruments but also enriches evaluative processes. Numerous studies have highlighted that maintaining high standards in data quality is paramount for meeting students' needs effectively. The importance of developing valid assessment instruments in the context of counseling practices cannot be overstated. For instance, it has been stressed that the development of comprehensive guidebooks that harmonize theoretical and empirical insights is essential for ensuring that counselors are equipped with both robust methodologies and quantitative backing necessary for effective practices (Purwani *et al*., 2021).

The statistical methodologies that underpin these transformations are diverse, ranging from traditional regression techniques to more sophisticated item response theory applications (Izzati et al., 2024). This variability highlights the importance of context in selecting appropriate methods for transforming ordinal data, ensuring that the resultant interval data is representative and reliable. When effectively executed, such transformations not only enhance the clarity of counseling evaluations but also bolster the overall efficacy of intervention programs, ensuring that they are tailored to meet the unique challenges faced by students (Purwani *et al*., 2021).

Furthermore, as indicated by recent findings, the application of technology in enhancing counseling services—through platforms that allow for virtual counseling—underscores the necessity of acquiring accurately transformed data. The resultant data from these platforms, when subjected to rigorous validation processes, can yield profound insights into student attitudes and behaviors, enabling practitioners to develop interventions that resonate more deeply with their objectives (Haling *et al*., 2023). The efficacy of these interventions can be substantially increased when data-driven insights are derived from valid and reliable measurement tools (Haling *et al*., 2023). Research has shown that collaborative approaches enhance the management of guidance and counseling services, resulting in improved intervention designs that reflect the broad spectrum of student experiences (Taytaş and Tanhan, 2021). When stakeholders align their efforts based on empirical data, the resulting holistic insights can lead to significant advancements in student welfare and educational success (Haling *et al*., 2023).

In light of these methodologies and empirical findings, it is evident that transforming ordinal data into interval data is not just a statistical exercise, but a vital strategic approach that has far-reaching implications for educational and counseling practices. The precision gained through this transformation process allows for more targeted interventions and a clearer understanding of the dynamics at play in students' psychological well-being, advocacy, and support (Novalia *et al*., 2023). Understanding the nuances of this process can pave the way for developing professionals equipped to tackle the diverse challenges found in contemporary educational contexts.

In conclusion, the exploration of ordinal to interval data transformations within psychological data processing serves as a pivotal avenue for improving the quality and efficacy of guidance and counseling services. The insights gained through such transformations not only enhance data interpretation but also empower educational professionals to craft informed interventions that meaningfully address the needs and challenges of students. As these techniques become more widely adopted, they promise to foster ongoing improvements in the practice of guidance and counseling, thereby shaping a resilient educational ecosystem adept at responding to a changing society.

3.2.1 Transforming Ordinal to Interval Data in Guidance and Counseling

Converting ordinal data to interval data within the field of guidance and counseling is an essential process that enhances the quality and effectiveness of interventions by enabling deeper insights into individual and group dynamics. This transformation not only broadens the analytical capabilities for understanding student behaviors and needs but also serves to improve measurement accuracy, as traditionally utilized ordinal data often lacks the granularity required for nuanced psychological evaluations.

Overall, transforming ordinal data into interval data in the context of guidance and counseling is essential for enhancing the effectiveness of programs and services provided to students. By using appropriate analytical methods, researchers and counseling practitioners can gain deeper insights into students' needs and development, as well as design more effective interventions. The application of inferential statistics in psychological data analysis involves a structured and systematic process.

a. Understanding Ordinal and Interval Data in Counseling

Ordinal data is a type of measurement in which the order of responses is significant, but the intervals between the ranks are not equal. For example, Likert scale responses (ranging from "strongly disagree" to "strongly agree") yield ordinal data that can inform counselors about the general attitudes or feelings of students. However, without recognizing the variable distances between responses, counselors may misinterpret the severity of issues or the effectiveness of interventions (Fauzi and Suherman, 2024). Interval data, on the other hand, provides a consistent and quantifiable understanding of these evaluations by establishing equal distances between data points, thereby allowing for more robust statistical analysis and informed decision-making (Izadikhah *et al*., 2021).

b. Importance of Conversion in Guidance and Counseling

The conversion of ordinal data to interval data is particularly critical in guidance and counseling for several reasons. One key factor is that many assessment tools used in counseling, such as surveys or questionnaires designed to gauge student well-being, often produce ordinal data. This limitation can restrict the applicability of various statistical analyses that require interval-level data, such as t-tests, ANOVA, and regression models, which are fundamental in evaluating counseling programs' effectiveness (Anggarini *et al*., 2023). Furthermore, counselors increasingly seek to deliver evidence-based interventions, necessitating more refined data analyses to substantiate the interventions' outcomes (Atmarno, 2021).

c. Techniques for Converting Data

The process of converting ordinal data into interval data can be achieved through several established methodologies:

1) Statistical Modelling:
   Utilizing statistical models such as item response theory (IRT) or the Rasch model facilitates the transformation of ordinal scales into interval measurements. These models account for the varying difficulty levels of survey items and can produce continuous measures from ordinal responses, reflecting true underlying traits more accurately (Anggarini *et al*., 2023).
2) Ordinal-to-Interval Transformation Techniques:
   Techniques such as the Successive Interval Method (SIM) enable counselors to systematically recalibrate ordinal responses into an interval format. This involves mapping each ordinal category to a specific interval on a continuous scale based on the cumulative frequency of responses (Izadikhah *et al*., 2021). Each response is then assigned a corresponding interval value that retains the original order while providing a scale conducive for more complex statistical analyses.
3) Use of Engineered Factors:
   Factor analysis can also serve as a means of deriving interval data by identifying latent variables that underlie ordinal responses. This statistical technique can reduce the data's dimensionality while generating interval-level constructs that counselors can use to assess trends and impacts (Izadikhah *et al*., 2021).

d. Practical Application in Guidance Programs

The conversion of data from ordinal to interval format is not just theoretical but has significant practical implications for guidance counseling programs. By employing these transformations, counselors can engage in more sophisticated evaluations of student needs, satisfaction, and the overall effectiveness of counseling services. Practical steps include:

1) Designing Comprehensive Surveys:
   When developing surveys for counseling services, it is crucial to incorporate well-structured questions that will yield ordinal responses that can later be transformed. For example, using a range of options on a satisfaction scale can provide insights into improvements needed within guidance programs (Atmarno, 2021).
2) Conducting Baseline and Follow-Up Assessments:
   By employing interval data techniques, counselors can evaluate the effectiveness of specific interventions by conducting baseline assessments (before interventions) and follow-up assessments (after interventions). This data can then be analyzed to determine the direct impact of counseling initiatives on student development (Purnama *et al*., 2020).
3) Training for Counselors:
   Training guidance and counseling professionals to understand and utilize these statistical techniques will improve their competency and result in more data-driven decisions (Damayanti and Azmi, 2021). As noted in recent research, professional development is essential in ensuring that counselors can effectively apply interval data analysis techniques within their practice (Laia *et al*., 2022).

4) Fostering Collaborative Evaluation:
   Encouraging collaborative evaluations that involve teachers, parents, and students can enhance data collection quality. Counselors should engage with various stakeholders to ensure that the spectrum of student experiences and needs is captured accurately, thus reinforcing the validity of the transformed data (Aqra and Suherman, 2024).
5) Utilizing Technology to Enhance Data Collection:
   The adoption of technology, such as online survey platforms, can facilitate more extensive data collection efforts while ensuring that the resultant data is conducive to conversion from ordinals to intervals (Awalya *et al*., 2022). With technological advancements, counselors can harness and analyze large datasets to pinpoint trends, making informed decisions based on robust analytics (Fitriani *et al*., 2023).

3.2.2 Transforming Ordinal to Interval Data in Guidance and Counseling using MSI

The transformation of data from ordinal to interval levels in guidance and counseling is a critical advancement that enhances data accuracy and applicability in therapeutic settings. This transformation allows practitioners to derive deeper insights and make more informed decisions based on quantitative assessments of student needs and outcomes. However, the absence of standardized practices in this domain necessitates the establishment of robust frameworks that can be applied uniformly across counseling contexts. This discussion outlines standardized practices for data conversion within counseling settings using the Method of Successive Intervals (MSI), a technique that can systematically convert ordinal data into an interval scale.

a. Rationale for Standardization in Data Conversion

Before delving into the mechanics of the MSI approach, it is essential to understand why standardization matters in the context of guidance and counseling. Counseling practices often operate in diverse environments, encompassing various demographic and situational factors. The lack of standardized conversion practices can lead to inconsistencies in data interpretation, limiting the comparability of findings across different studies and settings (Williams *et al*., 2023). By adopting a standardized methodology for data transformation, practitioners can ensure that the insights gleaned from their analyses are reliable, valid, and actionable (Ejeta *et al*., 2021).

b. Overview of the Method of Successive Intervals (MSI)

The MSI technique is designed to facilitate the conversion process from ordinal to interval data by identifying underlying proportions within categorical responses and mapping them onto a continuous scale. The core tenet of this method is that, by establishing a consistent and repeatable pattern for transforming the data, counselors can arrive at interval data that better represent the nuances of student experiences and responses (Hoekstra *et al*., 2024). Steps Involved in the MSI Method:

1) Data Collection: The first step involves collecting ordinal data through well-structured surveys or assessments that gauge student experiences or attitudes. For example, a Likert scale measuring student satisfaction might yield ordinal data ranging from "very dissatisfied" to "very satisfied" (Peart *et al*., 2023).

2) Calculating Cumulative Frequencies: Once collection is complete, counselors should calculate cumulative frequencies for each response category. This calculation helps establish a foundation for understanding the proportion of respondents within each category (Williams *et al*., 2023). For example, if 20 students respond with "satisfied," and 10 with "very satisfied," the cumulative frequency for the "satisfied" category becomes significantly relevant.
3) Mapping to Intervals: With cumulative frequencies established, the next step entails mapping these categories onto a continuous interval scale. This can be done by applying mathematical transformation techniques, such as linear mapping, where each ordinal category is assigned an interval value based on its cumulative frequency compared to the total responses. For example, if there are five ordinal categories, they may be assigned values from 1 to 5, which can then be transformed to a 1-10 scale using linear interpolation methods (Hoekstra *et al*., 2024).
4) Verifying Normal Distribution: Following transformation, it is crucial to verify that the resultant interval data approximates a normal distribution. This validation step is essential for ensuring that subsequent statistical analyses will yield valid results. Normality is often tested using statistical software or visual inspection methods like Q-Q plots (Ejeta *et al*., 2021).
5) Engaging Stakeholders in the Process: It is important to involve various stakeholders (e.g., school counselors, educational administrators, and possibly students) in the data collection and transformation process. Engaging these parties not only bolsters the data's validity but may also enhance the comprehensiveness of the insights (Karaçorlu and PiRiNçci, 2024). Collaboration in the development of survey instruments and the interpretation of results can ensure alignment between data and actual student needs.
6) Continual Feedback and Adjustment: Lastly, the transformation process should be adaptable. Stakeholders should continuously provide feedback on the instruments used and the data obtained to refine the conversion methodology iteratively, ensuring it remains relevant and effective amid changing educational contexts and practices (Hoekstra *et al*., 2024).

c. Implementation of Standardized Practices

To operationalize the MSI in counseling settings, it is critical to establish clear protocols and guidelines that practitioners can easily follow:

1) Developing Training Programs: Training workshops and professional development programs can help counselors understand and implement the MSI method effectively. Practitioners should be trained not only in the statistical aspects but also in the ethical implications of data conversion (De Vries *et al*., 2022).
2) Creating Resource Documents: Develop comprehensive resource documents that outline standardized methods, include exemplars of successful transformations, and provide troubleshooting tips for common challenges encountered during data conversion (Williams *et al*., 2023).
3) Institutional Support for Implementation: Institutions implementing these practices should support the necessary infrastructure, such as software and tools for statistical analysis, to facilitate data transformation seamlessly. Furthermore, providing access to professional development for all counselors involved in the process can enhance the implementation success rates (Ejeta *et al*., 2021).

d. Monitoring and Evaluation

The effectiveness of implemented standardized practices should be subject to ongoing evaluation. This can involve:

a. Establishing Metrics for Success: Define clear metrics to gauge the effectiveness of the data transformation in impacting counseling practices. Metrics could include improvements in student outcomes, satisfaction ratings, and qualitative feedback from counselors (Peart *et al*., 2023).
b. Conducting Audit Reviews: Regular audits of the data collection and transformation processes can help identify gaps in practice and areas for improvement, ultimately contributing to the sustainability and evolution of the MSI methodology (De Vries *et al*., 2022).
c. Fostering a Culture of Data-Driven Decision Making: Finally, promoting a culture within counseling settings that recognizes the importance of data-driven decision-making can lead to widespread adoption of standardized practices and continuous improvement (Williams *et al*., 2023).

4. CONCLUSION AND RECOMMENDATION

The transformation of ordinal data to interval data represents a cornerstone in the evolution of effective guidance and counseling practices. As the field continues to progress, greater emphasis should be placed on understanding and implementing these transformation techniques to bolster the reliability of psychological evaluations, ultimately improving student support and outcomes. The transformation of ordinal data to interval data through standardized practices such as the MSI approach holds significant potential to enhance the effectiveness of guidance and counseling programs. By engaging in systematic data conversion, counselors can generate deeper insights into student needs, ultimately fostering more effective interventions. Standardization in these practices not only ensures consistency but also paves the way for improved educational and counseling outcomes.

Future research should explore the development of standardized practices for data conversion within counseling settings, as well as investigate how these transformed datasets can inform best practices in intervention design and delivery. The ongoing integration of statistical methodologies with practical applications will not only enhance counseling effectiveness but also significantly contribute to the metrics used for evaluating student progress in educational environments. Future research could also delve more deeply into the empirical validation of these methods and explore the evolving best practices that may contribute to their broader application across diverse educational settings.

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