Evaluating the Influence of Prescriber Type on Total and Same Class Psychotropic Polypharmacy Across Northern and Southern California START Programs: Strengthening Prescriber Capacity-Building Initiatives Around Psychotropic Polypharmacy and IDD

INTRODUCTION

Psychotropic polypharmacy, the concurrent use of multiple psychotropic medications, is a common practice in the treatment of mental health vulnerabilities (Huhn et al., 2014; Kukreja et al., 2013). The high rates of psychiatric polypharmacy in the intellectual and developmental disabilities (IDD) population is especially concerning considering that this population is particularly vulnerable to the risks associated with psychiatric polypharmacy due to their complex medical needs and potential for communication and behavioral challenges (Maust et al., 2017). Capacity building efforts have been identified as an important strategy to improve the appropriate use of psychiatric medications in this population (Sheehan et al., 2015). However, it is unclear where to focus these capacity building efforts for prescribers of psychotropic medications working with individuals enrolled in California START Programs. This research poster aims to explore where to focus capacity building efforts around psychiatric polypharmacy in the IDD population by examining the relationship between prescribers' specialization (psychiatrist versus non-psychiatrist prescriber) and the rate of total and same-class psychiatric polypharmacy in individuals enrolled in START programs in California . As community providers of START crisis services in San Diego County, we often observed variability in the medications our enrollees were prescribed by different types of prescribers. This variability raised questions for us about what prescribers may benefit most from additional guidance on appropriate psychotropic prescribing practices for individuals with IDD. Our roles did not include direct prescribing, but through our crisis work we saw firsthand how polypharmacy and inappropriate medications could negatively impact individuals and exacerbate crisis situations. We wanted to better understand prescribing patterns to help guide meaningful capacity building and education for prescribers. Our initial study (SNTI, 2023) looked specifically at psychotropic polypharmacy rates and prescriber specialization for enrollees in San Diego START. The results showed differences in rates depending on whether the prescriber was a psychiatrist versus a non-psychiatrist prescriber. This prompted us to further explore whether the findings from San Diego held true across other START programs in California. Examining data from multiple regions allowed for a more comprehensive understanding of variability in psychotropic polypharmacy practices. It also helped identify where targeted training and resources may be most impactful for supporting efforts to drive capacity of prescribers of psychotropic medications to better understand psychotropic polypharmacy in the context of intellectual and developmental disabilities (IDD). Moreover, this current study takes a deeper dive into examining both Total Psychotropic Polypharmacy (TPP) and Same-Class Psychotropic Polypharmacy (SCP). The goal in exploring this topic: to inform capacity building efforts aimed at enhancing psychiatrists' and non-psychiatrists' expertise in prescribing for individuals with complex needs navigating both IDD and mental health vulnerabilities.

REVIEW OF THE LITERATURE

High Rates of Psychiatric Polypharmacy in IDD Population: Several studies report on the high prevalence of psychiatric polypharmacy in the IDD population -- 47.9% (Esposito et al., 2013), 36.2% (Pary et al., 2011), 44.2% (So et al., 2010), 43.1% (Novak et al., 2016). Moreover, several empirical studies suggest that individuals navigating both IDD and psychiatric polypharmacy experience higher rates of medication-related adverse events and drug interactions (Jeste et al., 2011; Sethi et al., 2016; Bakken and Rasmussen, 2011), and higher rates of emergency department visits/hospitalizations (Buckle et al, 2011).

Need for Capacity Building Targeting Prescribers working with IDD Population: Several empirical studies investigating psychiatric polypharmacy in the IDD population highlight the role of inadequate training and unfamiliarity with the IDD population as factors contributing to high rates of psychiatric polypharmacy in this population (Matson and Neal, 2009). A study by Esbensen et al. (2018) discovered that healthcare providers with less experience or specialized knowledge about behavioral and psychological aspects of IDD were more prone to prescribing multiple psychotropic medications. The findings were supported by Cooper et al. (2014), who reported that knowledge gaps regarding the unique characteristics of this population contributed to the excessive prescription of psychotropic medications. Providers who are unfamiliar with this population may be more likely to prescribe multiple medications to manage symptoms, rather than addressing the underlying cause of the problem. In addition, providers who are not trained in IDD may not recognize the unique challenges associated with treating this population, such as communication barriers and sensory sensitivities. The literature suggests that that prescribers are more likely to facilitate psychiatric polypharmacy in individuals with IDD when they have minimal experience/training working with the population (Esbensen et al., 2017; Kuo et al., 2018; Bhaumik et al., 2017). Evidence from the literature points to a general dearth in prescribers' understanding of the IDD population and the implications of psychiatric polypharmacy amongst this group. This evidence supports recommendations to increase capacity building efforts around psychiatric polypharmacy and the IDD population targeting prescribers. Capacity building efforts including trainings have been identified as an important strategy to improve the appropriate use of psychiatric medications in this population (Sheehan et al., 2015).

Where to focus Capacity Building Efforts? Comparison of psychiatric polypharmacy between psychiatrists and non-psychiatrist prescribers: Research suggests that the prescriber's specialty influences the rate of psychiatric polypharmacy in the intellectual and developmental disabilities population. A study by Lott and colleagues (2018) found that individuals with intellectual and developmental disabilities who received psychiatric care from a psychiatrist were more likely to be prescribed multiple psychotropic medications than those who received psychiatric care from a primary care physician. Moreover, a study by Pary et al. (2011) found that psychiatrists were more likely to facilitate psychiatric polypharmacy when working with individuals navigating IDD compared to non-psychiatrist prescribers. These findings suggest that psychiatrists are more likely to engage in psychiatric polypharmacy when working with the IDD population when compared to non-psychiatrist professionals responsible for prescribing psychotropic medications.

Same-Class and Total Psychotropic Polypharmacy: Psychiatric polypharmacy, particularly the concurrent use of multiple psychotropic medications within the same class (Same-Class-Psychotropic Polypharmacy -- SCP), or across different classes (Total-Psychotropic Polypharmacy – TPP) has garnered significant attention in recent literature. Psychiatric polypharmacy is a complex issue, with "same-class" polypharmacy defined as the simultaneous use of more than one medication from the same pharmacological class (e.g., two selective serotonin reuptake inhibitors) (PMC, 2013). Conversely, total psychotropic polypharmacy involves the use of psychotropic medications from different classes (MDPI, 2024; Sage Journals, 2021). The literature reveals that psychotropic polypharmacy affects over half of adults diagnosed with depression, with total polypharmacy being the most prevalent pattern observed (PMC, 2019).

Patterns of Prescribing Among Psychiatrists and Non-psychiatrist Prescribers / Implications for Individuals with IDD: A critical area of exploration is the distinction in prescribing patterns between psychiatrists and non-psychiatrist prescribers. Studies suggest variations in propensity for engaging in psychiatric polypharmacy among these two groups of healthcare providers. Psychiatrists are more likely to administer multiple psychotropic medications, potentially due to their specialized knowledge and comfort level with a broader spectrum of psychotropic agents, frequent need to engage in appropriate psychotropic polypharmacy, etcetera. However, the literature also suggests that non-psychiatrist prescribers, including primary care physicians, may resort to polypharmacy, possibly reflecting gaps in training regarding mental health conditions and their management in individuals with complex needs, including those with intellectual and developmental disabilities (IDD) (_, 2021; _, 2017). Individuals with IDD are particularly vulnerable to the effects of psychotropic polypharmacy due to their complex medical and behavioral needs. The high rates of polypharmacy in this population underscore the necessity for tailored approaches in medication management (JAMA Psychiatry, 2021). Furthermore, the literature indicates that non-psychiatrist prescribers might lack specialized knowledge about the behavioral and psychological aspects of IDD, leading to a higher reliance on psychotropic medications to manage symptoms (Pary et al., 2011).

Operational Definitions: In the realm of psychotropic polypharmacy research, particularly within individuals with IDD, operational definitions vary substantively. For this study, we define total polypharmacy as the concurrent use of two or more psychotropic medications regardless of drug class, while same-class psychotropic polypharmacy is defined as the concurrent use of two or more psychotropic medications from the same drug class. These definitions, however, are not without their pros and cons. A potential downside to this broader definition is that it may inflate the numbers, particularly for individuals who may be appropriately prescribed multiple psychotropic medications due to their complex mental health vulnerabilities. These individuals could contribute to seemingly high rates of polypharmacy, potentially skewing perceptions of the extent of inappropriate prescribing practices. Despite this limitation, there are compelling reasons to embrace this less conservative operational definition. Specifically, this approach offers the advantage of encompassing a broader range of individuals who may be experiencing inappropriate psychotropic polypharmacy. This becomes particularly significant when considering that individuals navigating IDD are more vulnerable to side effects and complications associated with the use of psychotropic medications. By adopting this approach, it becomes possible to identify when a person with IDD may be experiencing inappropriate psychotropic polypharmacy, which would not be recognized under a more conservative operational definition, such as concurrent use of three or more psychotropic medications. Therefore, while acknowledging the potential for inflated figures, this broader definition can provide a more representative and accurate estimate of the rates of inappropriate total and same-class psychotropic polypharmacy within the IDD population.

METHODOLOGY

This observational research study takes place in a program referred to as START (Systemic, Therapeutic, Assessment, Resources, and Treatment), an evidence-based crisis prevention and intervention service for people with IDD and mental health concerns (IDD-MH) across the lifespan (Beasley, & Kroll, 1992; Beasley, & Kroll, 1999; Beasley, et al., 1997, Beasley & Hurley, 2003). People are often referred to START by community-based service coordinators. The most likely reasons for referral are a history of mental health concerns, physical and/or verbal aggression, and risk of emergency service use. START intervention includes intake and quarterly assessment, outreach and coaching, systems linkages, and 24-hour mobile mental health crisis response for those enrolled in the program. The goal of START services is to improve mental health service outcomes and promote wellbeing for individuals with IDD-MH and their families. Ongoing, comprehensive assessment of mental healthcare needs is a standard part of START practice.

This study evaluated a de-identified data set from a sample of START service users enrolled in a California START (CA START) program between 2021 and 2022. Each person enrolled in START is assigned a unique identifier and all data entered is linked to that identifier. Therefore, no data entered is identifiable. All demographic, assessment, and service outcome data for those enrolled in START nationwide is entered in START Information Reporting System (UNH IRB-5573) database. The dataset used in this study comes from the SIRS database. As such, informed consent was not required.

Criteria for including records in this dataset were : 1) ages 6 and up; 2) enrolled in a CA START program between 2021 and 2022; 3) prescribed psychotropic medication 4) initial and 6-month re-evaluation completed.

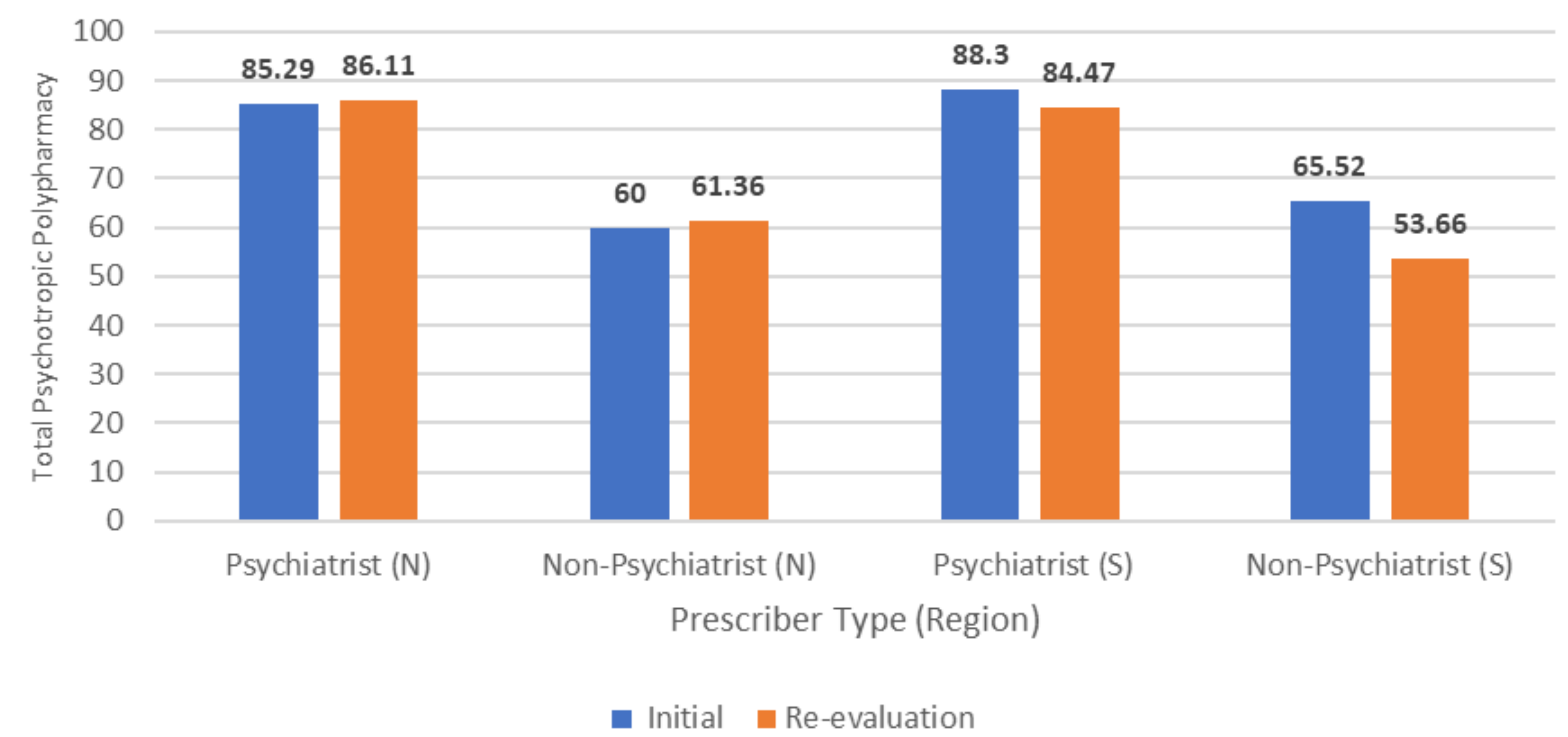
Records for 491 individuals across Northern and Southern California START programs were included in this dataset.

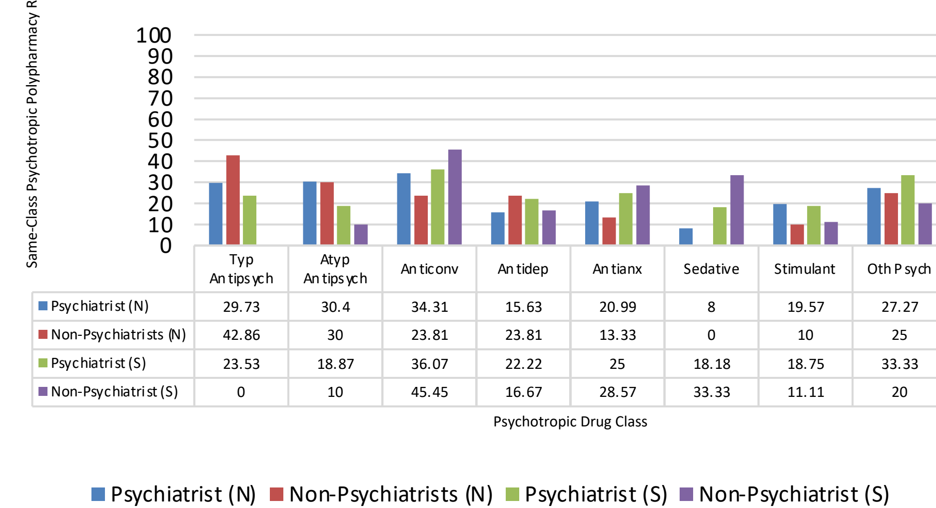
RESULTS

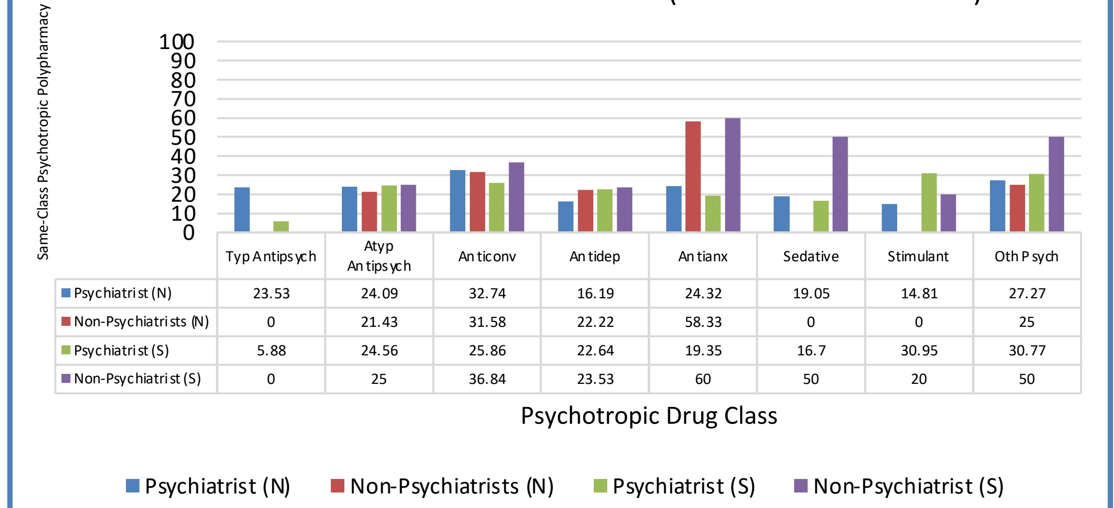
Across both regions, Psychiatrists facilitated significantly more Total Psychotropic Polypharmacy (TPP) when compared to Non-Psychiatrist prescribers. In Northern California, there were no significant changes in TPP rates from initial to 6 month re-evaluation for either prescriber group. However, in Southern California, there was a decrease in TPP from initial to re-evaluation (6 months) for both prescriber types **particularly in the Non-Psychiatrist prescriber group.**

At initial intake in Southern California, Psychiatrists had higher rates of Same-Class Psychotropic Polypharmacy (SCP) compared to Non-Psychiatrist prescribers for all drug classes except for Anticonvulsants, Antianxiety, and Sedatives. Psychiatrists had higher rates of SCP compared to Non-Psychiatrist prescribers in Typical Antipsychotics, Atypical Antipsychotics, Antidepressants, Stimulants and Other Psychotropic medications. At initial intake in Northern California, Psychiatrists had higher rates of SCP compared to Non-Psychiatrist prescribers for all drug classes except for Typical Antipsychotics and Antidepressants. Psychiatrists had higher rates of SCP compared to Non-Psychiatrists in Anticonvulsants, Antianxiety, Sedatives, Stimulants and Other Psychotropic medications. SCP rates at initial intake for Atypical Antipsychotics were similar across both Psychiatrists and Non-Psychiatrist Prescribers in Northern California.

At 6-month re-evaluation in Northern California, Psychiatrists had higher rates of SCP compared to Non-Psychiatrists for all psychotropic drug classes except for Antidepressants and Antianxiety medications. Psychiatrists had higher rates of SCP compared to Non-Psychiatrist prescribers in Typical Antipsychotics, Atypical Antipsychotic, Sedatives, Stimulants and Other Psychotropic Medications. SCP rates at 6-month re-evaluation for Anticonvulsants were similar across both Psychiatrists and Non-Psychiatrist Prescriber groups in Southern California. At 6-month re-evaluation in Southern California, Psychiatrists had higher rates of SCP compared to Non-Psychiatrist prescribers for all drug classes except for Anticonvulsants, Antianxiety, Sedatives and Other Psychotropic Medications. Psychiatrists had higher rates of SCP compared to Non-Psychiatrist prescribers in Typical Antipsychotics and Stimulants. SCP rates at 6-month re-evaluation for Atypical Antipsychotics and Antidepressants were similar across both Psychiatrist and Non-Psychiatrist prescriber groups in Southern California.







DISCUSSION

Data from this exploration underscores a critical observation: Although regional variations exist, the prescribing practices of both psychiatrists and non-psychiatrist prescriber groups examined in this study involved high rates of same-class and total psychotropic polypharmacy across all regions and time periods examined. This trend accentuates the pivotal roles these professionals occupy within the realm of polypharmacy risk management. Consequently, it underscores the pressing necessity for well-rounded capacity-building initiatives aimed at refining prescribing practice involving inappropriate same-class and total psychotropic polypharmacy for all prescribers working with individuals enrolled in California START programs.

Further examination of our data reveals regional differences in same-class and total psychotropic polypharmacy practices between psychiatrists and non-psychiatrist prescribers, suggesting the influence of local factors on psychotropic polypharmacy practices. Given these variations, there's a clear imperative for capacity-building efforts to be customized to address the specific needs faced by prescribers in diverse geographic locations. Such customization could entail region-specific training sessions, the formation of local multidisciplinary teams to bolster prescriber support, and the crafting of regional guidelines that reflect the nuanced needs of START Program participants' prescribers within those areas. These observed regional nuances not only validate the importance of geographic considerations in same-class and total psychotropic polypharmacy prescribing practices but also underscore the vital role that individual START teams play in leading tailored polypharmacy/IDD capacity-building initiatives within their respective regions.

Our results, therefore, not only shed light on psychotropic polypharmacy patterns impacting individuals enrolled in California START programs , but also pave the way for innovative, regionally-tailored approaches to prescriber targeted capacity building efforts. Ultimately, by focusing these capacity-building efforts on both Psychiatrists and Non-Psychiatrist prescribers, and tailoring these efforts to the unique contexts in which they practice, California START Programs can make significant strides in improving outcomes of the psychotropic interventions of their participants. Reflecting on our initial strategy, we acknowledge the value of distributing the *Integrated Mental Health Treatment Guidelines for Prescribers in Intellectual and Developmental Disabilities (The IDD-MH Prescriber Guidelines)* as a key step in engaging prescribers in polypharmacy/IDD capacity-building. However, insights gleaned from this study, which suggest regional differences in psychotropic polypharmacy practices between psychiatrists and non-psychiatrist prescribers, have highlighted the need for a more refined and targeted approach. This leads us to ask an essential question: How can individual California START Programs tailor capacity-building efforts around polypharmacy in the IDD population to effectively address prescribers' needs within their specific regions, incorporating strategies across **the micro level, the meso level and the macro level?**

Limitations and Future Research: Moving forward, our next step is to conduct an ANOVA test, which will enable us to statistically analyze the observed differences between groups and determine their significance, further enriching our research findings. This study does not allow for the determination of whether psychotropic polypharmacy is being prescribed appropriately or inappropriately, acknowledging that some instances of psychotropic polypharmacy may indeed be clinically justified. Future research could address this limitation by conducting a detailed, case-by-case clinical review of psychotropic polypharmacy instances. This approach would involve evaluating the clinical rationale behind each prescription decision, potentially through a combination of medical record analysis and consultations with prescribing physicians. Such an in-depth examination would enable researchers to distinguish between appropriate and inappropriate instances of psychotropic polypharmacy, providing a more nuanced understanding of prescribing practices. Future research is needed to explore the underlying causes of the regional variations in psychotropic polypharmacy practices discovered in our study. Such research could involve qualitative studies to understand the decision-making processes of psychiatrists and non-psychiatrist prescribers, as well as the impact of local healthcare policies and resources on these practices. Investigating the long-term outcomes of psychotropic polypharmacy in the IDD population could also provide valuable insights into the efficacy and safety of current prescribing practices, informing future guidelines and interventions. Future studies should also consider evaluating the effectiveness of capacity-building initiatives that have been tailored to address the specific needs of prescribers in diverse geographic locations. This could involve longitudinal studies to assess changes in prescribing practices following the implementation of targeted training sessions, multidisciplinary support teams, and regional guidelines. By understanding the impact of these capacity-building efforts, START Programs and other similar initiatives can refine their approaches to better support prescribers in managing psychotropic polypharmacy among individuals with IDD. In conclusion, our findings highlight the urgent need for targeted capacity-building efforts to address inappropriate same-class and total psychotropic polypharmacy in California START programs. By tailoring these efforts to the unique contexts and challenges faced by prescribers across different regions, START Programs can enhance the safety, efficacy, and outcomes of psychotropic interventions for individuals with IDD. Further research is crucial to deepen our understanding of the factors influencing psychotropic polypharmacy practices and to evaluate the impact of capacity-building initiatives designed to improve these practices.

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