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Associations Between Restorative Justice Practices, Music Therapy, and Social Reintegration Among Adolescent Offenders in Peru: An Observational Study

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Abstract

Restorative justice within the juvenile justice system has gained increasing attention as an alternative to punitive approaches, particularly in relation to the social reintegration of adolescents in conflict with the law, while complementary interventions such as music therapy are often implemented to support emotional regulation, social skills, and personal development within restorative contexts. This observational, cross-sectional study examined the associations between restorative justice practices, participation in music therapy, and indicators of social reintegration among 317 adolescents involved in restorative programs in Peru. Data were collected using a structured survey composed of ordinal-scale items assessing dimensions of restorative practices, engagement in music therapy, and perceived social reintegration, with the instrument demonstrating satisfactory internal consistency. Statistical associations were analysed using Somers' d, a non-parametric measure appropriate for assessing ordinal associations in observational research. The results revealed statistically significant and directionally consistent associations between restorative justice practices and social reintegration outcomes, as well as positive associations between participation in music therapy and higher levels of reported social reintegration. These findings should be interpreted in light of the study's cross-sectional design and non-probability sampling strategy, which limit causal inference and generalizability. While the results are consistent with the potential relevance of integrating music-based activities within restorative contexts, future research employing experimental or longitudinal designs is required to examine causal mechanisms and long-term effects and to further clarify the role of therapeutic interventions in supporting the social reintegration of justice-involved adolescents.

Keywords: restorative juvenile justice; social reintegration; music therapy; adolescents; observational study; Somers' d



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1. Introduction

Restorative Juvenile Justice (RJJ) has been implemented in several Western European countries for more than three decades, during which its development has progressed

through stages marked by both achievements and limitations. Comparative analyses of RJJ systems have examined how restorative approaches have been incorporated into juvenile justice frameworks and how participants engage in restorative processes, highlighting substantial variation across legal, institutional, and cultural contexts. These studies show that the effectiveness and sustainability of RJJ depend not only on formal adoption but also on the capacity of justice actors to recognise its principles and facilitate meaningful participation by young offenders. One recurrent challenge identified in the literature concerns the difficulty experienced by professionals within juvenile justice systems in acknowledging the relevance of restorative justice and in engaging adolescents in restorative practices in a consistent manner (Whitehead and Lab 2022). Such findings underscore the importance of examining how restorative approaches operate in specific national and local contexts, particularly outside Western Europe.

The shortcomings observed in the implementation of restorative and reintegration-oriented justice models are shaped by multiple and interrelated factors. Studies conducted in Latin American contexts point to structural limitations such as insufficient governmental support for penitentiary systems, chronic shortages of financial and human resources, institutional deterioration, persistent violence within detention settings, and the enduring social stigmatisation of offenders. In Mexico and Panama, for example, failures in penitentiary systems have been linked to the inefficiency of prevailing reintegration approaches, which often prioritise individual responsibility while neglecting broader family and social resilience processes (Cantizani Maillo 2020). Beyond these structural constraints, a critical issue relevant to the present study concerns the legal frameworks regulating social reintegration (SR), particularly those governing adolescents in conflict with the law. Normative inconsistencies and limited operational guidance within such frameworks may restrict the scope and coherence of reintegration-oriented practices.

Within the emerging paradigm of comprehensive protection, characterised by the expansion of rights and the consolidation of citizenship-oriented public policies, criminal policy is increasingly guided by the principle of *ultima ratio*, whereby punitive intervention is justified only when no less harmful alternatives are available (Carnevali Rodríguez 2008; Hall 2005; Herring 2022). Under this paradigm, criminal justice systems are framed as systems of duties with guarantees, an orientation that is reflected in international human rights law and contemporary restorative justice frameworks (Van Ness and Strong 2006; Van Ness et al. 2022). Restorative justice aligns with this normative orientation by emphasising accountability, repair, and social inclusion rather than retribution. In juvenile justice contexts, this approach is particularly relevant given the heightened vulnerability of adolescents and the long-term consequences associated with formal penal intervention. Consequently, restorative frameworks are frequently advanced as complementary mechanisms within broader systems of youth protection and social reintegration.

Although juvenile justice is not explicitly defined in the Convention on the Rights of the Child (CRC) or in the various soft law instruments addressing this field, its application derives from a range of human rights mechanisms developed within criminal justice systems. These mechanisms are designed to protect all individuals while recognising the specific needs and rights of minors. They include both instruments specifically addressing children and adolescents and those elaborated through legal doctrine and jurisprudence. This convergence is grounded in the shared rationale underlying juvenile justice and juvenile criminal justice, namely the principle of minimal penal intervention, which seeks to mitigate the adverse effects of the State's punitive power on adolescents (Aquino et al. 2021). From this perspective, juvenile justice systems are expected to prioritise educational, social, and restorative responses over punitive measures, particularly when addressing first-time or low-risk offenders (Congress of the Republic of Peru 1993).

In Peru, the Public Prosecutor's Office launched the Restorative Juvenile Justice Programme in South Lima in 2010, covering the districts of Villa El Salvador, San Juan de Miraflores, and Villa María del Triunfo (Ministerio Público 2010, 2020). These districts, characterised by high crime rates, also host several higher education institutions, including Universidad Autónoma del Perú. The programme was designed as an alternative mechanism for applying prosecutorial remission to adolescents in conflict with the law, with the objective of preventing the negative consequences associated with formal judicial proceedings and supporting their social, family, and educational development (Ministerio Público 2020). More than a decade after its implementation, the programme represents a consolidated institutional experience that warrants systematic academic examination. Analysing its operation may contribute to identifying sustainable restorative practices and informing evidence-based improvements over time.

The aim of this study is to analyse the association between Restorative Juvenile Justice (RJJ), as implemented in accordance with international standards, and social reintegration outcomes among adolescents in conflict with the law in Peru (Johnstone and Van Ness 2011). This research is situated within the field of children's and adolescents' rights, where punitive-oriented juvenile justice systems have historically predominated. The study integrates theoretical, normative, and criminal justice perspectives, drawing primarily on restorative justice and resilience theories, complemented by approaches related to social association and social support. Within this framework, the analysis examines the relationship between restorative practices and indicators of social reintegration, considering participation in music therapy as a related and complementary practice rather than as a causal or intervening mechanism, in accordance with the limits of an observational research design.

Previous studies have reported that music therapy is commonly used within justice and community-based programmes and may be associated with processes relevant to the social reintegration of adolescents who have violated criminal law (Clennon 2013; Pérez-Eizaguirre et al. 2022). Building on this empirical background, the present study addresses the following research question: is there an association between RJJ, implemented alongside music therapy, and social reintegration among adolescents in conflict with criminal law in South Lima? Accordingly, the main objective is to examine whether the incorporation of music therapy within RJJ programmes is associated with higher levels of reported social reintegration among juvenile offenders in Peru. By adopting an observational and relational approach, this study seeks to contribute to the empirical literature on restorative justice while explicitly recognising the limits of causal inference inherent in its design (Popper 2007).

1.1. Literature Review

The implementation of restorative juvenile justice (RJJ) has been widely examined in relation to outcomes associated with the social reintegration of adolescents in conflict with the law. A systematic review and meta-analysis conducted by Kimbrell et al. (2023) reported that, although the effectiveness of RJJ programmes varies considerably across institutional and cultural contexts, participation in restorative interventions is generally associated with small-to-moderate reductions in recidivism. Similarly, Flora et al. (2025) analysed RJJ practices using a mixed-methods design that combined quantitative assessments of recidivism with qualitative interviews involving juvenile offenders, victims, and justice system professionals. Their findings indicated that involvement in RJJ programmes tends to be associated with lower recidivism rates and higher levels of victim satisfaction. Importantly, these authors emphasised that such outcomes are contingent upon programme

design, implementation fidelity, and contextual factors, highlighting the need for cautious interpretation and context-sensitive analysis.

Consistent with these findings, [Shem-Tov et al. \(2024\)](#) evaluated the “Make-it-Right” restorative juvenile justice programme implemented in California. Their analysis compared youths participating in this community-based initiative with peers processed through conventional juvenile justice systems and found that programme participants were less likely to experience rearrest within six months. Rather than attributing these differences solely to programme participation, the authors underscored the relevance of complementary factors such as community involvement, programme intensity, and institutional support. These results illustrate how RJJ programmes may be associated with favourable behavioural outcomes in applied settings, while also reinforcing the importance of examining the broader social and organisational conditions under which restorative practices are implemented. Such findings support the view that RJJ outcomes should be interpreted as relational and context-dependent rather than as uniform or universally replicable effects.

Earlier reviews have also documented outcomes commonly associated with restorative juvenile justice programmes. [Umbreit et al. \(2005\)](#) identified several recurring patterns, including high levels of satisfaction reported by both victims and offenders involved in restorative dialogues, reductions in victims’ fear, increased empathy among offenders, and lower recidivism rates compared to traditional judicial processes. Additionally, restorative procedures were associated with higher levels of perceived harm repair. Notably, this review did not examine the role of music therapy or other complementary therapeutic practices. [Sherman and Strang \(2007\)](#) similarly reported associations between RJJ programmes and reductions in recidivism—particularly for violent offences—as well as improvements in victim satisfaction, community engagement, and economic efficiency. However, both reviews emphasised that outcomes varied substantially depending on offence type, cultural context, and programme design, cautioning against generalised conclusions.

More recent research has focused on the differential associations between RJJ participation and outcomes across diverse populations. [Beckman et al. \(2024\)](#) analysed community-led, police-initiated RJJ programmes targeting juvenile offenders and observed lower recidivism rates among participants compared to those processed through traditional juvenile justice systems. Their analysis further suggested that these associations were particularly pronounced among African American and Native American youths. Rather than framing these findings in causal terms, the authors highlighted the potential relevance of culturally responsive programme elements and community-based approaches in shaping restorative processes. These results contribute to an emerging body of literature suggesting that RJJ programmes may be differentially associated with reintegration-related outcomes across social groups, reinforcing the importance of equity-oriented and context-sensitive analyses in restorative justice research.

1.2. Theoretical Bases

In recent years, restorative juvenile justice (RJJ) has been examined as an alternative framework to traditional punitive models within juvenile justice systems. [Johnstone and Van Ness \(2011\)](#) conceptualise RJJ as an approach oriented towards harm repair and offender accountability through the active participation of victims, young offenders, and the community. From this perspective, restorative practices emphasise dialogue, responsibility, and social inclusion rather than retribution. Empirical studies suggest that participation in restorative processes is associated with lower levels of recidivism and more favourable perceptions of justice among adolescents, although outcomes vary according to programme design and contextual conditions ([Pérez-Eizaguirre et al. 2022](#)). In the Latin American context, [Aquino et al. \(2021\)](#) note that the implementation of restorative models is often con-

strained by limited institutional infrastructure and the absence of sustained programmes specifically oriented towards juvenile social reintegration (JSR). These limitations underscore the importance of examining how restorative frameworks operate within specific institutional and socio-legal environments (Cabrera 2010).

Music therapy has been examined in the literature as a complementary practice within rehabilitation and reintegration processes involving youth offenders. Studies by Clennon (2013) and Baines and Edwards (2018) indicate that participation in music-based interventions is associated with improvements in emotional self-regulation, empathy, and group cohesion, factors commonly linked to the development of prosocial behaviours. Rather than functioning as a standalone intervention, music therapy is typically embedded within broader psychosocial or restorative programmes, where it may support expressive, relational, and reflective processes. In Peru, state-led restorative justice initiatives implemented since 2010 in South Lima (Ministerio Público 2010, 2020) provide a relevant institutional setting in which restorative practices coexist with complementary activities, including music-based interventions. This context offers an opportunity to examine how such practices are articulated within restorative programmes targeting adolescents in conflict with the law.

From a theoretical standpoint, RJJ and music therapy share an emphasis on relational engagement, responsibility, and social connection, which are central to reintegration-oriented frameworks (Braithwaite 1989; Nieves 2018). However, given the predominance of observational and context-dependent evidence in this field, such relationships should be approached cautiously and without causal presuppositions. Accordingly, the present study adopts an observational and relational perspective to analyse the associations between RJJ practices, participation in music therapy, and indicators of social reintegration among adolescents in the Peruvian context, explicitly recognising the methodological limits inherent in non-experimental research design (Dweck et al. 1995; Dweck 1996).

1.2.1. Restorative Justice Theories

From a theoretical perspective, restorative juvenile justice (RJJ) is grounded in three interrelated principles: responsibility, repair of harm, and social reintegration (SR), all articulated within a restorative framework. Rather than centring exclusively on punishment, RJJ emphasises processes through which adolescents in conflict with the law are encouraged to acknowledge responsibility and engage in actions oriented toward repairing harm. In practical terms, the implementation of RJJ typically involves interdisciplinary technical teams composed of social workers, psychologists, educators, and social promoters who provide psychosocial input to prosecutors and judicial authorities. This collaborative structure supports informed decision-making regarding adolescents' legal situations and facilitates the application of restorative measures within juvenile justice systems (Evans and Vaandering 2022). From a theoretical standpoint, such arrangements reflect the relational nature of restorative justice, in which legal responses are embedded within broader social, familial, and community contexts rather than treated as isolated juridical acts (Fernández Espinoza 2020).

Restorative juvenile justice is often referred to more broadly as restorative justice (RJ) or, in some traditions, compassionate justice, underscoring an orientation that prioritises the needs of those harmed alongside the responsibilities of those who have committed offences. Within this framework, particular attention is paid to language, as terminology plays a central role in shaping social perceptions and legal practices. The term "offender" is commonly preferred over labels such as "delinquent" or "criminal" in order to avoid stigmatisation and to recognise individuals as persons who have committed a specific transgression rather than as inherently deviant subjects. This linguistic choice aligns

with restorative justice theory, which emphasises human dignity, social inclusion, and the possibility of reintegration. By reframing how individuals are identified within justice processes, RJ seeks to reduce labelling effects and to support more constructive forms of engagement between adolescents, victims, and institutions.

Within the RJJ process, victims, offenders, and community representatives are encouraged to participate collaboratively in addressing the consequences of the offence and in identifying appropriate restorative responses. Victims may be given opportunities to express the impact of the harm suffered, while offenders are supported in recognising their actions and assuming responsibility through contextually appropriate forms of reparation, such as restitution, replacement of damaged property, or community service (Pizan Chirado 2015; Zehr et al. 2022). Central to this approach is the theoretical assumption that crime constitutes an injury to individuals and communities, rather than solely a violation of State law. This conceptual distinction, extensively articulated by Zehr (2006), differentiates restorative justice from traditional criminal justice frameworks, which prioritise rule violation and punishment. Table 1 summarises these theoretical differences, highlighting the contrasting assumptions, goals, and processes underlying restorative and conventional justice models.

Table 1. Differences between restorative and criminal justice.

Restorative Justice	Criminal Justice
Crime: an offense against people and the relationships between them.	Crime: an offense against the law and the state.
Offense: generates obligations.	Offense: generates guilt.
Justice: a participatory process in which victims, offenders, and community members engage in repairing the harm caused by the offense.	Justice: The State identifies guilty parties and imposes punishments.
Central axis: Needs of the victims are addressed, with the offender taking active responsibility for redressing the harm.	Central axis: Offenders receive a fair punishment.

Note: Source: Zehr (2006, p. 27).

Early conceptual and practical foundations of restorative justice (RJ) were articulated by scholars such as Rosenberg (2018) and Barter (2011), who documented through empirical observation and professional practice the implications of restorative approaches as alternatives to punitive justice systems. Historically, the first widely cited application of RJ principles occurred in Ontario, Canada, in 1974 during the Elmira case, in which a judge facilitated a mediated encounter between two young offenders and their victims. This initiative marked a significant shift in justice practices by emphasising dialogue, accountability, and mutual understanding alongside legal responsibility. Rather than prioritising punishment alone, this early restorative experience illustrated how justice processes could incorporate participatory mechanisms aimed at addressing harm and promoting social repair. The Elmira case subsequently became a reference point for the institutional development of restorative justice programmes in various national contexts.

From a conceptual perspective, Braithwaite (2004) defines restorative justice as a participatory process in which all parties affected by an offence are given opportunities to engage in dialogue regarding its consequences and to collaboratively determine appropriate responses to repair the harm caused. Central to this approach is the recognition that crime produces injury not only to legal norms but also to individuals and communities. Accordingly, restorative justice frameworks orient justice processes toward healing, accountability, and social repair rather than retribution alone. Structured interaction between victims, offenders, and community members is a defining feature of this model, facilitating shared understanding and consensual decision-making. Within this framework, restorative

outcomes are understood as context-dependent and relational, shaped by the willingness of participants to engage constructively in dialogue and by the institutional conditions under which restorative processes are implemented.

For restorative justice processes to be ethically and procedurally valid, several conditions must be satisfied. These include the offender's willingness to acknowledge responsibility for the offence, the informed and voluntary consent of all participating parties—recognising that such consent may be withdrawn at any stage—and the explicit agreement of the offender to engage in the restorative process. Additionally, safeguards must be in place to protect victims from further material or psychological harm during mediation, and legal frameworks should not impose exclusionary restrictions based solely on offence type (Marshall 1999). These conditions underscore the voluntary, dialogical, and rights-based nature of restorative justice, distinguishing it from compulsory or purely punitive legal interventions. Ensuring such safeguards is essential for maintaining the legitimacy and ethical integrity of restorative practices.

Within criminal law theory, the objectives of punishment have traditionally been explained through three broad theoretical approaches. From a constitutional perspective, criminal law is required to fulfil its functions while respecting fundamental rights and ensuring legal certainty for individuals and society (Häberle 1997). According to Häberle (1997), the legitimacy of criminal law derives from its grounding in fundamental rights, situating both substantive and procedural norms within a framework of moral freedom and constitutional guarantees. Absolute theories of punishment conceive sanctioning as retribution proportionate to culpability (Jescheck and Weigend 2002a; Mir Puig 2002), whereas relative theories emphasise social protection and future prevention through educational and preventive measures (Cerezo Mir 2002). Mixed or union theories integrate elements of both approaches, balancing retribution, prevention, and resocialisation within sentencing frameworks.

In Peru, the Penal Code reflects a mixed orientation by combining judicial specification, normative guidance, and preventive measures during sentence execution (Bramont-Arias 2000). The Code establishes sanctions that may involve deprivation of liberty or restrictions on specific civil rights, affecting individuals through incarceration, community service, or exclusion from certain social contexts (Villavicencio Terreros 2006). In the case of minors, however, sanctioning mechanisms require differentiated approaches that take into account moral, cognitive, and psychosocial development. Within this context, restorative juvenile justice emphasises responsibility, harm repair, and social reintegration over punitive responses (Soler 2018). Such approaches commonly involve family, educational, and community environments, recognising the importance of sustained social interaction and developmental support. Douglas (2008) highlights that moral development can be fostered without causing harm to others, underscoring the relevance of integrating ethical learning within justice-oriented interventions.

For the purposes of this study, several key concepts are defined. Restorative justice (RJ), also referred to as compassionate justice, is understood as a framework for deliberating about justice that prioritises the needs of victims, offenders, and communities over the exclusive application of punitive sanctions or abstract legal norms (Zehr 2006). RJ is grounded in three interrelated pillars: harm and need, obligation, and participation. Compensation for harm refers to actions aimed at addressing damage inflicted on individuals and society, while responsibility emphasises offenders' active engagement in acknowledging and responding to the harm caused. Community involvement entails meaningful participation by victims, offenders, and community members in restorative processes. Social reintegration (SR) is defined as a structured process supporting individuals' adaptation to societal

norms following legal intervention, encompassing educational, psychological, and social dimensions relevant to sustained reintegration (Trapero Maldonado 2016).

1.2.2. Music Therapy

Music therapy is a professional discipline that systematically employs music and its constituent elements—such as sound, rhythm, melody, and harmony—to facilitate communication, emotional expression, learning, interpersonal relationships, and other therapeutic objectives. Its primary purpose is to address physical, emotional, mental, social, and cognitive needs, supporting either the development of individual potential or the restoration of functional capacities, thereby contributing to quality of life through preventive, rehabilitative, or therapeutic processes (Bruscia 1989). As a structured health-related intervention, music therapy is grounded in theoretical models and professional standards that distinguish it from recreational or informal musical activities. Its scope extends across clinical, educational, and social settings, where it is applied to diverse populations with varied psychosocial and health-related needs (Meadows 2011; Instituto Superior de Estudios Psicológicos 2023).

Music therapy interventions are characterised by a systematic methodological structure typically organised into phases of assessment, intervention, and evaluation, with procedures adapted to individual or group needs. Therapeutic processes may involve a range of musical experiences, including improvisation, musical re-creation, composition, and receptive listening, depending on the objectives pursued (Bruscia 1989). A defining feature of music therapy is its person-centred orientation, whereby interventions are tailored to participants' preferences, cultural background, and therapeutic goals. Active participation through musical creation or listening is encouraged to foster autonomy, self-esteem, and engagement. Music therapy is frequently integrated within multidisciplinary teams, where music therapists collaborate with psychologists, educators, physicians, and social workers to deliver coordinated and comprehensive interventions (Meadows 2011).

From a therapeutic perspective, music therapy addresses multiple dimensions of human functioning. In mental health contexts, interventions have been associated with support for individuals experiencing anxiety, depression, schizophrenia, and cognitive disorders, contributing to improvements in attention, memory, and emotional regulation. In physical health settings, music therapy has been linked to reductions in perceived pain, facilitation of motor rehabilitation through rhythm and movement, and improvements in physiological indicators such as cardiovascular functioning. In the emotional and social domain, music therapy supports self-expression, empathy, social skills, and self-esteem, particularly among individuals who experience difficulties in verbal or emotional communication (Guerrero-Torralba 2024; Ruiz 2019; Onorio 2012). These outcomes are context-dependent and vary according to intervention design, population characteristics, and implementation conditions.

Within juvenile justice contexts, music therapy has increasingly been explored as a complementary intervention associated with processes of social reintegration among adolescents in conflict with the law. Music-based techniques have been reported to support emotional regulation, reduce anxiety and stress, and facilitate the development of social and relational skills. For instance, a study conducted in a juvenile detention centre in Coimbra, Portugal, employing the Orff method, reported reductions in anxiety and relational stress, alongside improvements in group cohesion and frustration management (Fernández-Batanero and Cardoso Felício 2016). Similarly, a music therapy initiative implemented at the Centre for Adolescent Offenders in Loja, Ecuador, aimed at promoting dignity and cultural rights, reported encouraging preliminary outcomes despite its limited duration

(Bravo Villacís 2023). These studies suggest potential associations between music-based interventions and psychosocial dimensions relevant to reintegration.

From a biological perspective, research on violence and impulse control has highlighted the relevance of emotional regulation mechanisms, drawing on findings from behavioural genetics and neuroscience. Douglas (2008) emphasises the importance of understanding biological predispositions related to aggression, particularly those associated with impulse control and affective regulation. Empirical studies have reported associations between the low-activity variant of the monoamine oxidase A gene (MAOA-L) and impulsivity, reactive aggression, and antisocial behaviour, especially among individuals exposed to adverse childhood experiences (Byrd and Manuck 2014; Kanarik et al. 2023; McDermott et al. 2009). MAOA plays a regulatory role in neurotransmitter systems such as serotonin, dopamine, and norepinephrine, which are implicated in emotional regulation processes. These findings, however, describe probabilistic associations rather than deterministic causal mechanisms.

Although no studies have directly linked MAOA-L genotypes to music therapy interventions, existing research suggests that music exposure may influence neurochemical processes associated with emotional regulation. Experimental animal studies have reported associations between melodic music exposure and increased serotonergic and dopaminergic activity in brain regions related to reward processing and motor control, such as the nucleus accumbens and caudate–putamen (Moraes et al. 2018; Shih et al. 1999). Within restorative juvenile justice programmes, the integration of music therapy may therefore be associated with enhanced emotional regulation, empathy, dialogue, and social interaction. Nevertheless, these associations should be interpreted cautiously, as existing studies differ substantially in design, population, and methodological rigour. Prior research has reported relationships between restorative approaches, psychosocial interventions, and outcomes related to reduced violent behaviour and lower recidivism, without establishing direct causal pathways (Bazemore and Umbreit 1995; Latimer et al. 2005; Rodwin et al. 2022; Stegmann et al. 2019).

1.3. Study Context

Juvenile Diagnostic and Rehabilitation Centers in Peru

This study was conducted within the jurisdiction of the Lima Sur District Prosecutor's Office, which operates through three interdisciplinary teams located in the districts of Villa El Salvador, Villa María del Triunfo, and San Juan de Miraflores. The latter also provides services to adolescents in conflict with the law from the district of Lurín. According to the Peruvian Public Prosecutor's Office (Ministerio Público 2020), these teams function in coordination with allied institutions and social and justice operators involved in juvenile restorative justice processes. The institutional model emphasises personalised, comprehensive, and continuous care, with the stated objectives of reducing stigmatisation, ensuring dignified treatment, and recognising both the rights and responsibilities of adolescents. Each Prosecutor's Office designates a representative responsible for overseeing these functions, and the offices of San Juan de Miraflores, Villa María del Triunfo, Villa El Salvador, and Chorrillos have specialised personnel assigned to this area. Detailed information regarding territorial coverage, number of participants, and case distribution is presented in the Methodology section (Section 2).

The Juvenile Restorative Justice Action Line in Lima Sur has been implemented through coordinated collaboration with a range of public and private institutions. These include educational centres such as CEBA Ollantay, CETPRO Villaregia, and CETPRO Promae; non-governmental organisations such as Padma, Mundo Libre, Yachaywasi, and Semilla; health and social support services including the San José Therapeutic Community,

the Women's Emergency Center, DEVIDA, and María Auxiliadora Hospital through the MAMIS programme; as well as the Peruvian Institute of Sport (MPFN 2020). These institutions constitute the organisational environment in which restorative practices are developed and within which data for the present study were collected. Information was obtained through structured survey techniques and complementary interviews conducted with members of the multidisciplinary teams of the Lima Sur District Prosecutor's Office.

Within this institutional framework, social reintegration (SR) is conceptualised as a multidimensional process oriented towards facilitating adolescents' participation in social, educational, and community contexts following their involvement with the juvenile justice system. Recent research underscores the relevance of educational and psychosocial programmes that address the specific needs of adolescents in conflict with the law, supporting their social adaptation and employability prospects (Quispe Fernández 2023; Cangui-Mullo et al. 2025). This understanding of SR provides the conceptual backdrop for the operationalisation of the variables examined in the present study.

Empirical research conducted in comparable Latin American contexts has reported that restorative justice-oriented programmes incorporating mediation and harm reparation are associated with outcomes related to responsibility-taking and engagement among juvenile offenders, when contrasted with traditional punitive approaches (Ángeles-Quiroz and Rojas-Luján 2024). While these findings cannot be directly generalised due to contextual and methodological differences, they offer a relevant empirical reference for situating the present study within broader discussions on restorative practices in juvenile justice systems.

Interdisciplinary collaboration constitutes a central component of SR processes in juvenile justice settings. The integration of professionals from psychology, education, social work, and related fields enables a comprehensive approach that addresses the multiple dimensions of adolescents' experiences, including emotional, educational, familial, and community-related factors (Bermúdez Tapia 2023). This collaborative model represents a defining characteristic of the institutional context in which the present research was conducted.

In addition, the involvement of family members and community actors is considered a relevant element in supporting adolescents' continuity and engagement in reintegration processes. Prior studies suggest that family and community participation may contribute to strengthening social support networks and facilitating adolescents' involvement in pro-social activities (Aguilar Mejía 2023). In this regard, public policies oriented towards prevention and rehabilitation have increasingly emphasised alternatives to deprivation of liberty that are consistent with the protection of adolescents' human rights and international standards (Montejano Torres; Montejano Torres et al. 2019).

Finally, the continuous evaluation of social reintegration programmes has been identified as an important practice for identifying strengths and areas for improvement within institutional interventions. Ongoing assessment supports the adaptation of programmes to evolving needs and contextual conditions, contributing to their sustainability and relevance over time (Acencio-Malpartida 2024). Within this context, the present study seeks to contribute empirical evidence regarding the associations between restorative juvenile justice practices, complementary interventions, and social reintegration outcomes among adolescents in conflict with the law in Lima Sur.

2. Methods

This study examines adolescents in conflict with the law within their family and social environments, with the aim of analysing the associations between the Restorative Juvenile Justice (RJJ) model and processes related to social reintegration (SR) in the Peruvian context. Particular attention was given to the presence of music therapy (MT) as a complementary

component implemented within certain restorative justice programmes. The study seeks to contribute to the theoretical and empirical literature on RJJ by exploring how restorative practices, together with participation in music-based interventions, are associated with indicators related to family, social, economic, and educational integration, as well as patterns of delinquency and exposure to criminogenic environments (Popper 2007; Hernández Sampieri et al. 2014; Hernández-Sampieri and Mendoza 2018; Cohen and Gómez Rojas 2019; Guillén Valle et al. 2019).

The research was conducted over a five-month period in southern Lima, Peru, within the jurisdiction of the Specialized Family Prosecutor's Offices of San Juan de Miraflores, Villa María del Triunfo, Villa El Salvador, and Chorrillos. These institutions operate in accordance with the National Plan for the Prevention and Care of Adolescents in Conflict with Criminal Law and within the framework of the first specialised care module for juvenile offenders, which provides the institutional and operational context for the implementation of restorative justice practices and the collection of empirical data (Ministerio Público 2020).

Given that the study population consisted of adolescents who had committed criminal offences, particular emphasis was placed on the protection of participants' rights. Informed consent was obtained from both the adolescents and their legal guardians, and confidentiality was ensured in accordance with Peruvian legal regulations and international ethical standards governing research involving minors. The study employed an explanatory observational design, with no manipulation of variables, allowing for the systematic collection of data on associations among RJJ practices, participation in music therapy, and social reintegration outcomes, while minimising potential ethical and psychological risks to participants (Bryman 2004).

2.1. Study Scenario

Overcrowding represents a major structural challenge within Juvenile Diagnostic and Rehabilitation Centers (CJDRs) in Peru and constitutes a relevant contextual factor for the implementation of educational, therapeutic, and restorative interventions. As of June 2022, CJDRs housed 1777 adolescents in conflict with the law, exceeding their installed capacity of 1665 places (Ministerio de Justicia y Derechos Humanos 2022), as detailed in Table 2. This situation is associated with limitations in infrastructure, availability of specialised personnel, and the provision of individualised attention, which shape the operational conditions under which rehabilitation and restorative programmes are delivered. Within this scenario, restorative justice initiatives and complementary interventions, including music therapy (MT), are implemented under constrained institutional conditions, requiring adaptation to available resources and organisational capacities. The present study was conducted with a sample of 317 adolescents, all male, participating in these programs. These contextual characteristics are relevant for interpreting the associations examined in the study between restorative juvenile justice practices, participation in complementary interventions, and social reintegration-related indicators.

The Programa Nacional de Centros Juveniles reports a total population of 3237 adolescents involved in the juvenile justice system, of whom 3012 (93%) are male and 225 (7%) are female (Programa Nacional de Centros Juveniles 2022b). Of this total, 1777 adolescents are housed in Juvenile Diagnostic and Rehabilitation Centers (CJDRs), while 1460 remain under the supervision of juvenile counselling services, reflecting the coexistence of custodial and non-custodial measures within the system (Programa Nacional de Centros Juveniles 2022a). According to the Political Constitution of Peru (Article 120, 1993), minors are defined as individuals under 18 years of age; however, CJDRs accommodate adolescents aged between 14 and 21 years due to specific legal provisions that allow the continuation of juvenile measures beyond the age of majority (2023), as detailed in Table 3. This diversity in age

range and legal status constitutes a relevant contextual characteristic of the juvenile justice system and provides an important background for interpreting rehabilitation and social reintegration processes examined in the present study.

Table 2. Shelter capacity in Peruvian juvenile detention centers—July 2022.

Youth Center	Capacity	Population	Overpopulation
Miguel Grau—Piura	185	118	--
José Quiñones Gonzáles—Chiclayo	126	165	39
Trujillo	106	169	63
Pucallpa	110	172	62
El Tambo—Huancaayo	110	183	73
Marcavalle—Cusco	96	124	28
Alfonso Ugarte—Arequipa	92	102	10
Lima—Lima	560	570	--
Exhibit—Ancón II—Lima	192	83	--
Santa Margarita—Lima	88	91	--
Total	1665	1777	--

Note: The data pertain to the population of Peruvian juvenile detention centers.

Table 3. Juvenile prison population in Peru according to age range as of July 2021.

Age	Amount	%
14	36	2
15	114	6
16	277	16
17	434	24
18	337	19
19	220	12
20	154	9
21 or older	205	12
Total	1777	100

Note: The largest population is in the 17-year-old range (Ministerio de Justicia y Derechos Humanos 2021).

Regarding the types of offences committed by adolescents within the juvenile justice system, aggravated robbery, sexual violence against minors, and rape emerge as the most prevalent categories, while offences such as acts against modesty, simple theft, human trafficking, and marking occur less frequently. Other offences, including simple homicide, extortion, illegal possession of weapons, and illicit drug trafficking, present intermediate levels of prevalence, reflecting a heterogeneous criminal profile among the adolescent population (Programa Nacional de Centros Juveniles 2022a). This distribution illustrates the coexistence of violent and non-violent offences, as well as variations in severity and social impact within the juvenile justice system. Such heterogeneity constitutes a relevant contextual element for understanding the range of situations addressed by juvenile justice programmes and for interpreting the scope of restorative justice practices examined in this study. The distribution of offences analysed is summarised in Table 4.

Table 4. Population according to type of violation in CJDRs.

Infringement	Quantity	Percentage (%)
Sexual rape	149	8.40
Sexual rape of a minor	275	15.47
Acts against modesty	13	0.73
Violence and resistance against authority	1	0.05
Kidnapping	11	0.62
Parricide	10	0.56
Human trafficking	2	0.11
Simple homicide	50	2.81
Qualified homicide	108	6.08
Marking or adjustment	2	0.11
Hitman	5	0.28
Femicide	9	0.50
Minor injuries	5	0.28
Serious injuries	29	1.63
Extortion	52	2.93
Simple theft	1	0.05
Aggravated robbery	59	3.32
Illicit association	1	0.05
Heist	5	0.28
Aggravated heist	808	45.50
Illegal possession of weapons	73	4.11
Illicit drug trafficking	82	4.61
Others	27	1.52
Total	1777	100.00

Of the 1777 adolescents and young people housed in Juvenile Diagnostic and Rehabilitation Centers (CJDRs), 1434 (81%) have been sentenced, while 343 (19%) remain under preventive detention awaiting trial ([Programa Nacional de Centros Juveniles 2022a](#)). This distribution reflects the coexistence of punitive and precautionary measures within the juvenile justice system. In addition, a voluntary programme currently includes 144 adolescents who have completed their socio-educational measures ([Programa Nacional de Centros Juveniles 2022b](#)). Most participants are concentrated in CJDR Lima (85), followed by Piura (19), Ancón II Annex 3 (9), Santa Margarita (8), Cusco (7), Pucallpa (6), Arequipa (5), and Chiclayo (4). At the regional level, the highest number of recorded infractions is concentrated in Lima (371), La Libertad (225), Piura (114), Ucayali (90), and Junín (87), whereas Tacna (19), Amazonas (19), Huancavelica (18), and Moquegua (5) report lower figures ([Programa Nacional de Centros Juveniles 2022a](#)). These territorial distributions provide relevant contextual information regarding the scope and heterogeneity of the juvenile justice system.

Within this institutional framework, various restorative-oriented programmes and strategies have been implemented to address juvenile offending through non-custodial mechanisms. One such initiative is prosecutorial referral with a restorative approach, which allows the Public Prosecutor's Office to abstain from initiating criminal prosecution or to

divert adolescents from formal proceedings in cases involving minor offences. This pre-trial mechanism is designed to facilitate accountability, harm reparation, and orientation toward social reintegration. In addition, restorative guidance programmes enrol adolescents in structured activities focused on responsibility, reflection, and awareness of the consequences of their actions. These initiatives are characterised by the use of dialogue-based practices and socio-educational components rather than punitive sanctions, in line with international standards on juvenile justice.

Interdisciplinary technical teams constitute a central operational component of restorative juvenile justice programmes. These teams typically include psychologists, social workers, educators, and other professionals who provide comprehensive support to adolescents and their families, addressing psychosocial, educational, and emotional dimensions. Their activities are guided by inter-institutional action protocols that facilitate coordination between the Public Prosecutor's Office, public agencies, and civil society organisations. In addition to case follow-up, complementary activities such as training workshops, recreational programmes, and communication initiatives are implemented to support adolescents' social skills and personal development. This institutional arrangement reflects an integrated approach to juvenile justice interventions, emphasising continuity of care and multi-sectoral collaboration.

Since its implementation in October 2010, the National Programme for Restorative Juvenile Justice (PNJJR) in Lima Sur has expanded as an institutional initiative of the Public Prosecutor's Office. The programme is structured around three guiding principles: accountability, harm reparation, and social reintegration. Administrative reports indicate that, by June 2015, 1310 adolescents who had committed offences such as theft and robbery had participated in programme activities, with follow-up information reported for a subset of cases (Ministerio Público 2013, 2014). By 2023, the PNJJR had extended its operations to 19 of Peru's 34 fiscal districts, functioning through 24 service locations nationwide. Between 2010 and 2016, a total of 4081 adolescents were registered in programme records, with a proportion participating in fiscal remission and counselling modalities (Ministerio Público 2018, 2021, 2023). These figures provide an institutional backdrop for the present study, without constituting evaluative evidence of programme effectiveness.

2.2. Population and Sample

The study population consisted of 1777 adolescents housed in Juvenile Diagnostic and Rehabilitation Centers (CJDRs), classified according to offence type and legal status. To establish an adequate empirical reference, an indicative sample size was estimated using a finite population formula commonly applied to categorical variables, assuming maximum variance ($p = 0.5$), a 95% confidence level ($Z = 1.96$), and a margin of error of 5%. The formula used was

$$n = (NZ^2pq) / [e^2(N - 1) + Z^2_{\alpha}(pq)]$$

where

- N = total population;
- $Z_{\alpha} = 1.96$ squared (if confidence level is 95%);
- p = expected proportion (in this case, 5% = 0.05);
- $q = 1 - p$ (in this case, $1 - 0.05 = 0.95$);
- e = precision (in our study, we used 5%).

$$n = [(1777) (1.96)^2 (0.5) (0.5)] / [(0.05)^2(1777 - 1) + (1.96_{\alpha})^2 (0.5) (0.5)]$$

$$n = 316.01 = 317$$

where n represents the population size, p the expected proportion, $q = 1 - p$, and e the accepted precision level. Based on this calculation, the estimated sample size was 316.01, rounded to 317 participants.

Although this estimation provided a statistical reference, the sampling procedure was non-probabilistic and based on convenience, due to institutional access restrictions and ethical considerations inherent to research involving adolescents in conflict with the law. Participation was authorised by the corresponding judicial and administrative authorities.

The final sample comprised 317 adolescents drawn from nine CJDR facilities, including both sentenced individuals (81%) and those under preventive detention (19%). The sample included 293 males (92.4%) and 24 females (7.6%), with ages ranging from 14 to 21 years ($M = 17.2$, $SD = 1.8$). The operationalisation of the study variables was conducted through the definition of specific dimensions and indicators, which are presented in Table 5 (Bernal Torres 2016).

Table 5. Operationalization of variables.

Variable	Dimensions	Final Value	Variable Type	Items	Instrument Scale
Restorative juvenile justice	Harm and need	Whether or not the phenomenon occurs	Ordinal	1–15	Likert scale
	Obligation				
	Commitment and participation				
Social reintegration	Social	Whether or not the phenomenon occurs	Ordinal	16–30	Likert scale
	Psychological				
	Educational				
Music therapy	Mental health	Whether or not the phenomenon occurs	Ordinal	31–45	Likert scale
	Physical health				
	Emotional health				

This study employed a deductive analytical approach within an explanatory observational design, in which the study variables were neither manipulated nor experimentally controlled. Data were collected through structured surveys administered in real institutional settings and complemented by documentary analysis and contextual information to support the construction of the survey instrument (Lavado 2018; Vera et al. 2018). Given the ordinal and categorical nature of the variables, responses were measured using a five-point Likert scale to capture ordered variations in perceptions and experiences (Castro 2003; Arias 2012; Hernández-Sampieri and Mendoza 2018). Data processing involved descriptive procedures and non-parametric inferential analyses. Associations among variables were initially examined using Kendall's tau-b, followed by Somers' d, a statistic appropriate for assessing directional associations between ordinal variables in observational research. Ethical principles were strictly observed, including informed consent, confidentiality, and the protection of participants' rights, in accordance with national regulations and international standards for research involving adolescents.

The study was informed by a comprehensive review of the literature on restorative juvenile justice (RJJ), social reintegration (SR), and music therapy, which provided the theoretical basis for the selection of variables and the formulation of research hypotheses. In

accordance with the explanatory observational design, the analysis did not aim to establish causal effects but focused on identifying statistically significant directional associations among the three constructs using Somers' d (Supo and Zacarías 2024). This non-parametric statistic enables the examination of ordered associations between ordinal variables without assuming temporal precedence or causal determination. Data were collected both in person at juvenile centres and remotely through electronic means, following standardised procedures to ensure consistency across data collection modes.

This analytical approach highlights the role of hypothesis testing in explanatory observational studies, where the objective is to move beyond purely descriptive or relational analyses while remaining within the limits of non-experimental research. The use of Somers' d enables the identification of directional patterns of association between variables without assuming causal mechanisms or experimental control. The results derived from this analysis should therefore be interpreted as preliminary empirical evidence that informs future research agendas. In particular, they provide a basis for subsequent experimental or longitudinal studies designed to examine causal mechanisms and temporal dynamics related to the role of complementary interventions, such as music therapy, in social reintegration processes (Supo and Zacarías 2024).

3. Findings

3.1. Pilot Test

A pilot test was conducted to examine the internal consistency of the three instruments designed to assess Restorative Juvenile Justice (RJJ), Social Reintegration (SR), and Music Therapy (MT). Each instrument comprised 15 items measured on ordinal categorical scales and was administered under conditions comparable to those of the main data collection phase. Internal consistency was evaluated using Cronbach's alpha coefficient as an indicator of item homogeneity within each scale. The resulting coefficients were 0.884 for RJJ, 0.926 for SR, and 0.893 for MT, as shown in Table 6. These values were calculated based on pilot-phase responses and are reported as an initial assessment of internal consistency prior to the application of the instruments to the full study sample (Mikkonen et al. 2022; Cooper 2023).

Table 6. Reliability Restorative Juvenile Justice, Reintegration Reliability and Music Therapy.

Variable	Cronbach's Alpha	No. of Elements
Reliability restorative juvenile justice	0.884	15
Social reintegration reliability	0.926	15
Music therapy reliability	0.893	15

Table 6 presents the Cronbach's alpha coefficients obtained for each instrument during the pilot test. The internal consistency coefficients were 0.884 for Restorative Juvenile Justice, 0.926 for Social Reintegration, and 0.893 for Music Therapy, with each instrument composed of 15 ordinal items (Creswell 2003; George and Mallery 2003).

3.2. Descriptive Results

The descriptive analysis comprised 317 adolescents involved in the juvenile justice system, with ages ranging from 14 to 21 years, in accordance with the legal and institutional framework governing Juvenile Diagnostic and Rehabilitation Centers (CJDRs). Regarding educational attainment, 67 participants (21.1%) reported having completed secondary education, while 250 (78.9%) indicated other educational levels. In terms of marital status, the majority of respondents were single ($n = 289$; 91.2%), followed by those who were

married ($n = 21$; 6.6%) or cohabiting ($n = 7$; 2.2%). With respect to current activities, 192 adolescents (60.6%) reported participation in educational programmes, 26 (8.2%) were involved exclusively in sports activities, and 99 (31.2%) indicated participation in both educational and sports programmes. Prior to institutionalisation, 241 participants (76.0%) reported that they were studying, while 76 (24.0%) were engaged in paid work. Based on this descriptive profile, the study variables are presented below according to participants' responses, together with a description of their respective dimensions.

Restorative Juvenile Justice (RJJ) is understood in this study as an approach to juvenile justice that prioritises the repair of harm resulting from criminal behaviour through the participation of adolescents, victims, and, where applicable, community actors. This framework emphasises accountability, dialogue, and processes oriented toward social reintegration rather than exclusively punitive responses, in line with international standards and restorative justice principles (Soler 2018; United Nations Office on Drugs and Crime 2006).

Table 7 presents the distribution of responses for the Restorative Juvenile Justice (RJJ) variable among the 317 participants. The majority of responses were classified within the high category (59.9%), followed by the average category (38.2%) and the low category (1.9%). This distribution reflects the allocation of participants' responses across the predefined ordinal categories used to operationalise the RJJ variable.

Table 7. Restorative juvenile justice variable.

Level	N	%
Low	6	1.9
Average	121	38.2
High	190	59.9
Total	317	100.0

Harm is understood as the injury or impact experienced by a victim as a consequence of a criminal act, while needs refer to the requirements that arise from the consequences of the offence and may vary according to the individual affected (Bazemore and Schiff 2005).

Table 8 presents the distribution of responses for the damage and need dimension among the 317 participants. Most responses were classified within the average category (65.3%), followed by the high category (28.7%) and the low category (6.0%). This distribution reflects how participants' responses were allocated across the predefined ordinal categories used to operationalise this dimension.

Table 8. Damage and need dimension.

Level	N	%
Low	19	6.0
Average	207	65.3
High	91	28.7
Total	317	100.0

The obligation dimension refers to the responsibility assumed by the adolescent to acknowledge the harm caused by the offence and to participate in actions oriented toward its repair in relation to the victim and the community. Within the restorative justice framework, obligation emphasises accountability, restitution, and the acceptance of consequences as central elements of restorative processes (United Nations Office on Drugs and Crime 2006).

Table 9 presents the distribution of responses for the obligation dimension among the 317 participants. Most responses were classified within the average category (80.8%),

followed by the high category (14.5%) and the low category (4.7%). This distribution reflects how participants' responses were allocated across the predefined ordinal categories used to operationalise the obligation dimension within the restorative juvenile justice framework.

Table 9. Obligation dimension.

Level	N	%
Low	15	4.7
Average	256	80.8
High	46	14.5
Total	317	100.0

The commitment and participation dimension refers to the shared responsibility assumed by victims, offenders, and the community to engage actively and meaningfully in the restorative justice process. Commitment involves the willingness of the involved actors to assume their respective roles, while participation emphasises their effective inclusion in restorative activities such as dialogue, mediation, and agreed-upon reparative actions (United Nations Office on Drugs and Crime 2006).

Table 10 presents the distribution of responses for the commitment and participation dimension among the 317 participants. Most responses were classified within the average category (67.8%), followed by the high category (26.2%) and the low category (6.0%). This distribution reflects how participants' responses were allocated across the predefined ordinal categories used to operationalise the commitment and participation dimension within the restorative juvenile justice framework.

Table 10. Commitment and participation dimension.

Level	N	%
Low	19	6.0
Average	215	67.8
High	83	26.2
Total	317	100.0

Social reintegration refers to the process through which juvenile offenders are supported in their constructive and responsible return to society after assuming responsibility for their actions and participating in harm repair processes. This process encompasses social, educational, and psychological components that facilitate adolescents' adaptation to community life and compliance with social norms (Ángeles-Quiroz and Rojas-Luján 2024).

Table 11 presents the distribution of responses for the social reintegration variable among the 317 participants. Most responses were classified at the high level (75.1%), followed by the average level (21.5%) and the low level (3.5%). This distribution illustrates how participants' responses were allocated across the predefined ordinal categories used to operationalise the social reintegration construct.

Table 11. Social reintegration variable.

Level	N	%
Low	11	3.5
Average	68	21.5
High	238	75.0
Total	317	100.0

The social dimension of social reintegration refers to the set of processes that facilitate adolescents' constructive participation in community life following involvement in the juvenile justice system. This dimension encompasses engagement in social networks, interaction with peers and institutions, adherence to social norms, and participation in activities that promote coexistence, responsibility, and social inclusion (Tapia 2023; Lin et al. 2023; Defensoría de la Niñez 2025).

Table 12 presents the distribution of responses for the social dimension of social reintegration among the 317 participants. Most respondents were classified at the average level (78.2%), followed by the high level (15.8%) and the low level (6.0%). This distribution shows how participants' responses were allocated across the predefined ordinal categories used to operationalise the social dimension of social reintegration.

Table 12. Social dimension.

Level	N	%
Low	19	6.0
Average	248	78.2
High	50	15.8
Total	317	100.0

The psychological dimension of social reintegration encompasses the emotional and cognitive processes that influence adolescents' adjustment following participation in restorative interventions. This dimension includes emotional regulation, self-perception, motivation for change, and the development of cognitive resources that support responsible decision-making and psychosocial well-being among both offenders and victims (Bruner and Tagiuri 1954; Kumar et al. 2023; Martínez 2024).

Table 13 presents the distribution of responses for the psychological dimension of social reintegration among the 317 participants. Most respondents were classified at the average level (63.1%), followed by those at the high level (31.5%) and the low level (5.4%). This distribution reflects how participants' perceptions were allocated across the predefined ordinal categories used to operationalise the psychological dimension of social reintegration.

Table 13. Psychological dimension.

Level	N	%
Low	17	5.4
Average	200	63.1
High	100	31.5
Total	317	100.0

The educational dimension of social reintegration refers to pedagogical strategies and learning processes aimed at strengthening academic skills, competencies, and knowledge that facilitate adolescents' constructive reintegration into society (Campos et al. 2024; Morales 2022; Liu et al. 2021).

Table 14 presents the distribution of responses for the educational dimension among the 317 participants. Most respondents were classified at the average level (74.1%), followed by those at the high level (20.2%) and the low level (5.7%). This distribution indicates that, although the majority of adolescents perceive their educational reintegration as moderately developed, a smaller proportion report higher levels of educational engagement, while only a marginal group exhibits low educational reintegration.

Table 14. Educational dimension.

Level	N	%
Low	18	5.7
Average	235	74.1
High	64	20.2
Total	317	100.0

Music therapy, within the restorative juvenile justice framework, refers to the structured therapeutic use of music-based interventions aimed at supporting rehabilitation, emotional expression, and social reintegration among juvenile offenders (Chong and Yun 2020; Caulfield et al. 2020).

Table 15 presents the distribution of responses for the music therapy variable among the 317 participants. Most respondents (83.9%) were classified at the average level, followed by those at the high level (9.1%) and the low level (6.9%). This distribution suggests that music therapy interventions are generally perceived as moderately implemented or experienced within the institutional context, with a limited proportion of participants reporting high levels of therapeutic engagement. The predominance of average-level responses is consistent with the complementary role of music therapy within restorative juvenile justice programs rather than its systematic or intensive application across all cases.

Table 15. Music therapy variable.

Level	N	%
Low	22	6.9
Average	266	84.0
High	29	9.1
Total	317	100.0

The physical health dimension refers to the individual's bodily well-being and functional capacity, which are relevant components in rehabilitation and social adaptation processes supported by therapeutic interventions (Daykin et al. 2017). Assessing this dimension allows for understanding participants' perceived physical readiness to engage in restorative programs and other structured rehabilitative activities.

Table 16 displays the distribution of responses for the physical health dimension. Most participants (82.6%) rated their physical health as average, while 9.1% reported low levels and 8.2% indicated high levels. These findings suggest that the majority of adolescents perceive their physical condition as adequate to participate in rehabilitative and restorative interventions. However, a notable minority may require additional support or monitoring to enhance their engagement and outcomes. It is important to interpret these results cautiously, as the data are self-reported and do not provide objective measures of physical health.

Table 16. Physical health dimension.

Level	N	%
Low	29	9.1
Average	262	82.7
High	26	8.2
Total	317	100.0

The mental health dimension involves music-based interventions aimed at supporting psychological well-being, including stress management, emotional stability, and cognitive

functioning among adolescents (Travis et al. 2019). Evaluating this dimension helps identify participants' perceived readiness to benefit from therapeutic interventions that address emotional and cognitive aspects of social reintegration.

Table 17 presents the distribution of responses for the mental health dimension. Most participants (75.1%) reported average mental health, while 12.6% indicated high levels and 12.3% reported low levels. These results suggest that the majority of adolescents perceive their psychological well-being as adequate to engage in restorative and music-based interventions. Nevertheless, a notable proportion of participants may require additional mental health support. The findings should be interpreted cautiously, as they are based on self-reported data and do not reflect clinical assessments.

Table 17. Mental health dimension.

Level	N	%
Low	39	12.3
Average	238	75.1
High	40	12.6
Total	317	100.0

The emotional health dimension refers to the use of music therapy to support emotional regulation, expression, and overall emotional well-being among adolescents participating in restorative processes (Travis et al. 2019). Assessing this dimension provides insight into participants' perceived capacity to manage emotions effectively and engage in restorative interventions.

Table 18 shows the distribution of responses for the emotional health dimension. Most participants (79.8%) rated their emotional health as average, while 11.7% reported low levels and 8.5% indicated high levels. These results suggest that the majority of adolescents perceive their emotional well-being as sufficient to participate in music-based restorative interventions. However, a smaller portion may benefit from additional support to enhance emotional regulation and resilience. As with previous dimensions, findings should be interpreted cautiously, given that data are self-reported and do not constitute clinical assessment.

Table 18. Emotional health dimension.

Level	N	%
Low	37	11.7
Average	253	79.8
High	27	8.5
Total	317	100.0

3.3. Inferential Results

Inferential statistics were used to examine relationships among the study variables. Since all variables were categorical and ordinal, non-parametric measures of association were applied. Initially, Kendall's tau-b correlation coefficient was calculated to assess the direction and strength of associations, serving as a preliminary step before applying Somers' d, consistent with methodological recommendations for ordinal data (Supo 2015; Supo and Zacarias 2024). It is important to note that correlation and ordinal association measures cannot establish causality, particularly in observational or non-experimental designs (Pearl 2009; Pearl and Mackenzie 2018). These techniques indicate the magnitude and direction of associations but do not provide evidence of causal effects. Consequently, all

inferential results in this study are interpreted strictly in terms of statistical association, reflecting the limitations of the study design and the observational nature of the data.

For the analyses, a 95% confidence level and a 5% significance threshold were used. Kendall's tau-b was 0.405 ($p < 0.001$), showing a statistically significant positive association. Somers' d was applied to evaluate directional associations between ordinal variables. The general research hypothesis (H_1) posited that restorative juvenile justice (RJJ), considered alongside music therapy, is associated with variations in social reintegration (SR) levels among adolescents in conflict with the law in Peru. This formulation avoids causal claims, aligns with the observational data, and emphasizes the association between variables rather than implying effect.

Test of the General Hypothesis

Hypothesis H_0 : *There is no statistically significant association between restorative juvenile justice (RJJ), when associated with music therapy, and the level of social reintegration (SR) of adolescents who have violated criminal law in the Peruvian context.*

Table 19 presents the results of Somers' d test applied to the general research hypothesis. The analysis evaluated the association between restorative juvenile justice (RJJ), when combined with music therapy, and the level of social reintegration (SR) among adolescents in conflict with the law in Peru. The Somers' d coefficients were 0.405 for the total association, 0.416 for RJJ, and 0.394 for SR, all with p -values < 0.001 , indicating statistically significant associations at the 5% significance level. These results demonstrate a moderate positive association among the variables. It is important to note that Somers' d assesses the strength and direction of ordinal associations but does not establish causal relationships. Therefore, the findings should be interpreted as evidence of correlation rather than causation, reflecting the limitations inherent in observational and non-experimental designs.

Table 19. Somers' d test for the general hypothesis.

Music Therapy Variable		Value	Standard Error Asymptotic ^a	T Approximate ^b	Approximate Significance
Total Ordinal by ordinal	Symmetrical	0.405	0.036	10.878	0.000
	RJJ Variable	0.416	0.037	10.878	0.000
	SR Variable	0.394	0.036	10.878	0.000

^a The null hypothesis is not assumed. ^b Use of the asymptotic standard error that presupposes the null hypothesis.

The null hypothesis (H_0) stated that no statistically significant association exists between RJJ combined with music therapy and SR. Given the statistically significant coefficients, H_0 is rejected in favor of the alternative hypothesis (H_1), which posits a positive association. While the results suggest that higher engagement in RJJ and music therapy tends to coincide with higher SR scores, these observations do not imply causal influence. Nevertheless, the findings provide a foundation for future experimental research to explore potential causal mechanisms, and they offer descriptive insight into how restorative and therapeutic interventions relate to perceived social reintegration in this adolescent population.

4. Discussion

The inferential results indicate a statistically significant association between restorative juvenile justice (RJJ) and social reintegration (SR) among adolescents in conflict with the law, as assessed through Somers' d ($d = 0.405$; $p < 0.001$). This association should be interpreted as directional and ordinal rather than causal, reflecting the ordered dependency

observed in the data. The findings align with principles outlined by the [United Nations Office on Drugs and Crime \(2006\)](#), emphasizing accountability, harm repair, and community involvement. Similarly, the association between music therapy (MT) and SR supports prior evidence that creative therapeutic interventions facilitate emotional regulation and social adaptation among justice-involved adolescents ([Travis et al. 2019](#)). These results underscore the complementary role of MT within RJJ, providing an explanatory framework for understanding adolescent perceptions of reintegration, while respecting the methodological limits of non-experimental observational designs.

Descriptive analyses reveal that most participants rated RJJ favorably, with 59.9% indicating high levels of engagement. Dimensions such as harm and need, obligation, and commitment were mainly perceived at medium levels, suggesting partial but consistent adherence to restorative principles. Social reintegration was rated high by 75.1% of adolescents, particularly in social and educational domains, whereas psychological outcomes were moderate. MT was predominantly perceived at medium levels, with physical, emotional, and mental health aspects standing out. These findings suggest that adolescents perceive RJJ and MT as complementary frameworks that are coherently associated with reintegration processes. By focusing on ordered associations rather than causal inference, the study provides a robust observational explanation that can guide future experimental and longitudinal research in restorative juvenile justice contexts.

From an inferential perspective, the sequential application of Kendall's tau-b and Somers' d allowed for the examination of directional associations among ordinal categorical variables. The observed Somers' d coefficient ($d = 0.405$; $p < 0.001$) indicates a moderate, statistically significant association between restorative juvenile justice (RJJ) and social reintegration (SR) when music therapy (MT) is considered. Consistent with [Supo and Zacarías \(2024\)](#) and [Pearl and Mackenzie \(2018\)](#), these findings reflect ordered dependency rather than empirical causation. This analytical approach strengthens the explanatory scope of the study while maintaining methodological consistency and avoiding overinterpretation. By emphasizing statistical association, the results provide a foundation for future experimental research that could more directly evaluate causal mechanisms, while also confirming the potential value of integrated RJJ and MT practices in supporting adolescent reintegration in observational contexts.

Regarding MT, the findings align with prior research showing that music-based interventions enhance emotional expression, empathy, and social interaction among adolescents ([Clennon 2013](#)). In Peru, initiatives by the [Ministerio Público \(2010, 2020\)](#) offer institutional frameworks for integrating MT within RJJ programs. This study extends that evidence by demonstrating that MT is meaningfully associated with social and emotional dimensions of SR. From an epistemological standpoint, these results illustrate a methodological transition from purely relational studies, which only identify associations, to explanatory observational studies that examine directional statistical relationships. Somers' d identifies ordered dependencies without asserting causal effects, providing an explanatory framework that preserves inferential rigor and informs the design of future experimental or longitudinal research.

Finally, the application of Somers' d test confirmed a statistically significant and positive directional association between restorative juvenile justice (RJJ) and social reintegration (SR) when music therapy (MT) was included in the analysis ($d = 0.405$; $p < 0.001$). This moderate association exceeds simple correlation and supports an explanatory interpretation of the relationship without implying causation. As highlighted by [Supo and Zacarías \(2024\)](#), these results provide evidence of ordered dependency, which is a necessary condition for subsequent experimental validation. Consequently, the study's general hypothesis is supported at an explanatory level, preserving methodological coherence and avoiding

overstatement of causal inference. These findings offer a foundation for future confirmatory research, including longitudinal and experimental designs, to examine the stability of observed associations and further explore the role of MT within RJJ programs, contributing to a more robust understanding of integrated restorative interventions for adolescents in conflict with the law in the Peruvian context.

5. Conclusions

The findings of this study indicate that restorative juvenile justice (RJ), when integrated with music therapy (MT), is statistically and directionally associated with higher levels of social reintegration (SR) among adolescents in conflict with the law in Peru. Restorative practices incorporating therapeutic and participatory components are consistently linked to social, emotional, and educational dimensions of reintegration, without implying deterministic causality. RJ is perceived as a structured and reparative approach promoting accountability, participation, and community engagement. Similarly, MT operates as a complementary intervention associated with emotional regulation, empathy, and social interaction, contributing to the restorative environment in which SR develops. These results highlight the explanatory value of integrated interventions while acknowledging the descriptive and observational nature of the study, offering a framework for understanding adolescent reintegration processes within restorative juvenile justice programs.

From a methodological perspective, the sequential application of Kendall's tau-b and Somers' d enabled the examination of directional associations between ordinal categorical variables. The observed Somers' d coefficient ($d = 0.405$; $p < 0.001$) indicates a moderate, statistically significant association between RJ and SR when MT is included. Consistent with [Supo and Zacarías \(2024\)](#) and [Pearl and Mackenzie \(2018\)](#), these findings reflect ordered dependency rather than causal influence, constituting a necessary condition for future experimental validation. This approach reinforces methodological rigor while respecting the limitations of non-experimental, observational designs, emphasizing the importance of longitudinal and experimental research to assess the stability, generalizability, and explanatory scope of these associations.

From an epistemological standpoint, this study represents a transition from relational research, which identifies simple associations, toward explanatory observational designs capable of detecting ordered statistical relationships consistent with theoretical expectations. By avoiding causal overstatement and adhering to methodological rigor, the study strengthens the empirical foundation of restorative juvenile justice research. Integrating MT within RJ programs is supported as part of a coherent explanatory framework for adolescent reintegration. Ultimately, these findings lay the groundwork for future research aimed at empirically testing the sustained and long-term role of therapeutic interventions within restorative justice systems in Peru, providing a model for robust explanatory inquiry and evidence-informed policy development.

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Informed Consent Statement: Informed consent was obtained from all study participants. For participants under 18 years of age, consent was also obtained from their legal guardians. No interventions or experimental manipulations were performed on the participants. The study was conducted in accordance with the ethical standards of the Ethics Universidad Autónoma del Perú and with the 1964 Helsinki Declaration and its later amendments.

Data Availability Statement: The data presented in this study are not publicly available due to confidentiality agreements. Data may be available from the corresponding author upon reasonable request.

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Abbreviations

The following abbreviations are used in this manuscript:

RJJ	Restorative Juvenile Justice
SR	Social Reintegration
JSR	Youth Social Reintegration
RJ	Restorative Justice
CJDRs	Juvenile Diagnostic and Rehabilitation Centers

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