

Sampling and analysis of personal narratives of adolescents: A systematic review of the literature

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Abstract: Personal narratives are commonly shared in adolescent social interactions, forming an important role in supporting social connection and emotion well-being. The aim of this systematic review was to consider the literature regarding the sampling and analysis of personal narratives in adolescence, to identify elicitation tasks and language measures used in examining this discourse genre. The review draws on a broader PROSPERO-registered systematic review [CRD42022345679] examining personal narrative assessment in children and adolescents. The original search, conducted across six databases (updated September 2024), identified 20,251 records, of which 211 met inclusion criteria. Twenty-seven studies involving adolescents (12–18 years) and analysing spoken personal narratives met the inclusion criteria for the present review. Of particular interest, was research focused on adolescents with mental health concerns. Data were systematically extracted to answer research questions concerning aspects of the elicitation and analysis of personal narratives from adolescents with and without mental health concerns. Two-thirds of the studies were focused on areas of psychological functioning, while nine studies examined aspects of language performance. Three studies examined personal narratives elicited from adolescents with mental health concerns. Several variations of elicitation tasks and around 50 language measures were identified in the literature. The range of elicitation tasks and language measures used to examine spoken language, highlights the rich source of data that can be drawn from analysing personal narratives. However, there is a clear need to examine the personal narratives of adolescents with mental health concerns, with greater collaboration between the fields of research in this area.

Keywords: adolescence; discourse analysis; personal narrative; language performance

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Introduction

Personal narratives are a common feature of social discourse across the lifespan and across cultures (McCabe & Bliss, 2003; Westby & Culatta, 2016; Westerveld et al., 2022). They are associated with several areas of social and emotional development; from the acquisition of early social conversational skills (Peterson & McCabe, 1983), to the processing of emotions related to traumatic events (Bartoli, 2022), and to the emergence of a life story (defined below) in adolescence (Habermas & Bluck, 2000). Adolescence is a life stage marked by important developmental changes, particularly in the areas of social and emotional development. Sadly, reports show a high prevalence of 13.96% for mental disorders in adolescents aged 15 to 19 years (Kieling et al., 2024). Indeed, there is evidence of an increasing prevalence of mental disorders in adolescents (Sacco et al., 2024), placing it as a leading cause of disease burden amongst adolescents globally (Kieling et al., 2024). While there is a body of research supporting the sampling and analysis of personal narratives in the assessment of children's language (McCabe et al., 2008; Peterson & McCabe, 1983; Westerveld et al., 2022). However, despite the links between personal narratives and aspects of social-emotional development, the use of personal narratives in adolescent language assessment is not as clearly established.

Personal narratives are the spoken accounts of past events personally experienced and constructed from memory (Westby & Culatta, 2016). Producing a personal narrative draws on the integration of several cognitive and linguistic skills that allow the speaker to organise, represent, and reflect on the lived experience. Cognitively, it involves memory, perspective-taking, and the ability to integrate motivations, actions, and outcomes into a meaningful whole. At the linguistic level, it requires the formulation of a coherent, extended discourse through skills such as appropriate vocabulary, grammatical utterances, and a chronological or logical sequencing of ideas to create a story that is easily understood by the listener. As part of a communication assessment, these social discourses provide valuable insight into functional language ability at word, sentence, and text level.

For the speech-language pathologist (SLP) working with an adolescent who presents with co-occurring communication and mental health needs, it is important to examine functional language ability. Personal narratives, as a frequently occurring social discourse, are highly relevant to adolescents and therefore are an appropriate example of functional language for discourse sampling and analysis. With information gained through the analysis of personal narratives, SLPs can target therapy to more effectively support the needs of adolescents, particularly those with co-occurring communication and mental health needs. For example, deficits identified in the use of emotional vocabulary (internal state language) could direct SLPs to set therapy targets to expand the adolescent's emotional lexicon at word level, rehearse sentence patterns such as "I feel frustrated when ..." at sentence level, and elaborate on these

situations at a text level by providing more detail and description, effectively leading back to an enriched personal narrative.

Adolescents, Life Stories, and Mental Health

Adolescence is a transitional, yet discrete developmental stage. It has been conventionally defined by age, in line with the physiological changes that mark the onset and completion of puberty, as 12–18 years but has been expanded to 10–24 years to capture a broader range of important biological, cognitive, neurological, social, and emotional developmental tasks (Sawyer et al., 2018). Communication plays a role in many aspects of these developmental shifts, such as fostering the adolescent's personal identity (McLean, 2005), building positive social interactions with friends (Hart et al., 2004), and processing emotions (Brinton & Fujiki, 2011; Fujiki et al., 2002). Consequently, adolescents with communication difficulties such as developmental language disorder are at greater risk of social and emotional difficulties. In a longitudinal study to investigate this, Conti-Ramsden et al. (2019) tracked the social and emotional development of a cohort of children diagnosed with developmental language disorder (DLD) across four age points between the ages of 7 ($N = 242$) and 16 ($N = 139$). Overall, they found that emotional and peer difficulties were present from childhood to adolescence in just over half the sample. Conti-Ramsden et al. (2019) point to pragmatic language difficulties as playing a significant role in these results, highlighting language skills such as drawing inferences and appropriate conversational turn taking.

Communication also plays an important role in enabling adolescents to construct a coherent and well-adjusted account of their past to support the emerging life story (Bohn & Berntsen, 2008; Westby & Culatta, 2016). A life story is a person's narrative account of their life that integrates past experiences (autobiographical events) with who they are now and who they expect to become. It encompasses various autobiographical past events, including key low points (e.g. death of a loved one), high points (e.g., birth of child), or turning points (e.g., near-death experience), which are linked to form a coherent whole (Habermas & Bluck, 2000; Westby & Culatta, 2016). (See Westby & Culatta (2016) for an in-depth discussion of life stories and single-event personal narratives.) A coherent and well-formed life story allows an individual to make informed choices, understand personal motivations, engage in effective problem solving strategies, and take responsibility for one's actions (Westby & Culatta, 2016). In contrast, a poorly formed or disorganised life story may lead to an underdeveloped personal identity, in turn leading to a range of social and emotional problems (Alonso-Stuyck et al., 2018). Long-term impacts arising from these social and emotional problems include impaired social and academic functioning, difficulties with emotion regulation, lower quality of life, and potentially reduced career opportunities (Schlack et al., 2021). Evaluating the language skills required in sharing autobiographical personal narratives could be an important factor in supporting adolescents with co-occurring communication and mental health concerns.

Personal Narratives in Adolescence

Daily-event personal narratives, like the autobiographical narratives of a life story, are often the media for expressing thoughts and feelings about important topics to those within circles of friendships, reinforcing sameness within a group, or highlighting differences between ‘us’ and ‘them’ (Hartup, 1996; Hill & Coufal, 2005). At an intrapersonal level, sharing personal narratives and reflecting on important events assists in processing internal states, allowing an adolescent time and space to reflect and make meaning out of these events (Bohn & Berntsen, 2008; Daniel, 2009). In telling their personal narratives, adolescents seek to reinforce friendships, and in return, receive positive direction and emotional support throughout life (Habermas & Bluck, 2000; Westby & Culatta, 2016). The ability to tell personal narratives also supports academic achievement, where adolescents are required to draw on their own experiences as they interact with fiction, expository, and informational texts (Westby & Culatta, 2016). Indeed, evidence of the educational relevance of personal narratives in adolescence comes from the inclusion of capabilities or standards related to understanding, producing, and writing personal narratives in various education curricula such as the Australian Curriculum Version 9 within the Personal and Social Capability learning continuum (The Australian Curriculum Assessment Reporting Authority, n.d.) and the Common Core State Standards (National Governors Association for Best Practices and Council of Chief State School Officers, 2010).

In summary, sharing personal narratives is integral to adolescents’ social and emotional development, making it important to understand the language skills involved from the perspectives of both language performance and psychological functioning. There is abundant evidence supporting the elicitation and analysis of personal narratives in the assessment of children’s language abilities. Peterson, McCabe, and colleagues were among the earliest proponents of the use of personal narratives in assessment, establishing the Conversational Map Elicitation Procedure for eliciting personal narratives from children, ages 3 to 9 (Peterson & McCabe, 1983). They also contributed to the field in developing the Narrative Assessment Profile for evaluating narrative discourse coherence (Bliss et al., 1998; Peterson & McCabe, 1983). Since this time, personal narratives have been used to study the language skills of various populations of children, for example: children with learning disabilities (Celinska, 2004), autistic children (Bang et al., 2013; Hilvert et al., 2020), children with Down syndrome (van Bysterveldt et al., 2012), children who use alternative / augmentative communication devices (Soto et al., 2009), and children from different cultural and linguistic backgrounds (Westerveld et al., 2022). However, it is unclear whether there is similar support for the analysis of personal narratives in the language assessment of adolescents, despite the evidence of continuing development across various aspects of language from childhood, through adolescence, and into adulthood (Nippold, 2000).

Assessing Communication Ability in Adolescents

SLPs assess communication ability and language skills across a range of contexts including education and mental health services, often relying on the results of norm-referenced but decontextualised language tests that generally focus on aspects of language at the word and sentence levels (Hallin & Partanen, 2024; Izaryk et al., 2021). In discourse sampling and analysis, SLPs sample specific types of discourse to analyse the language sample using word- (e.g., internal state vocabulary, lexical diversity), sentence- (e.g., complexity of clause and phrase structure, between-sentence cohesion), and text-level (e.g., narrative structure such as story grammar, topic maintenance) measures. In comparison to standardised language tests, discourse sampling and analysis offers an ecologically valid method for assessing contextualised, functional language ability that supplements the results of norm-referenced language tests (Heilmann, Tucci, et al., 2020). Various discourse genres have been used in the assessment of language skills, from retelling fables to explaining how to play a favourite game or sport. Personal narratives are used in discourse sampling across age groups; in preschool populations (e.g., Gorman et al., 2016; Imgrund et al., 2019), school-age children (e.g., Lenhart et al., 2022; Srivastava et al., 2023), adolescents (e.g., Nippold et al., 2017; Wallis & Westerveld, 2024), adults (e.g., Bryant et al., 2017), and globally to examine the impact of cultural and linguistic differences (e.g., Westerveld et al., 2022). However, in the adolescent age group, discourse sampling and analysis has tended to focus more on academic genres such as persuasion (Heilmann, Malone, et al., 2020), critical thinking (Nippold et al., 2020), and summarising (Lundine et al., 2018). Given their role in adolescent social and emotional development, personal narratives would appear to be a relevant discourse to analyse and evaluate language performance, particularly within the mental health context. Indeed, personal narratives and particularly life event narratives, play an important role in various clinical approaches to psychotherapy (e.g., helping clients to focus on recommendations of a course of future action to be taken in behaviour therapy or to consider the qualities of emotional experiences in emotion focused therapy [Habermas & Döll-Hentschker, 2017]), further reinforcing their relevance with this clinical population.

Wallis et al. (2025) surveyed 43 SLPs working with adolescents with mental health concerns and found that only half the respondents were frequently eliciting personal narratives as part of their assessments, and only 52% of these SLPs felt confident in analysing the sample. The majority of participants (86%) reported eliciting personal narratives informally during conversation and often relied on informal methods of analysis. Wallis et al. (2025) suggest that clinical guidelines could encourage SLPs to elicit and analyse personal narratives on a more routine basis, using more formalised approaches to discourse sampling and analysis to respond to clinical questions and inform targeted goal setting and intervention. Before developing such guidelines however, the current state of the research must be explored, to better understand the varying purposes for examining personal narratives and current sampling and analysis practices.

Sampling and Analysis of Personal Narratives

Analysis of personal narratives provides a profile of language strengths and challenges. The tasks used to elicit personal narratives vary widely, often depending on the clinical question (i.e., what information the SLP wants to obtain by doing an assessment) or the purpose of the sampling (e.g., diagnosis vs. progress monitoring). Personal narratives can be elicited as a monologue, or drawn from an interview or conversation format, or co-constructed with the examiner, a parent, or a peer. In the Conversational Map Elicitation Procedure, developed by Peterson and McCabe (1983), examiners share a story about their own personal experience and then invite the child to tell one of their own personal stories about common daily events. In contrast, to observe an adolescent's ability to create a well-sequenced narrative from beginning to end, tasks that elicit personal narratives as a monologue with minimal additional prompts offer greater clinical utility (Miller et al., 2016). Other variations of sampling and elicitation include: (1) spoken versus written modes, (2) how much scaffolding is provided in the prompt, (3) whether picture prompts are used, (4) how many personal narratives are elicited, and (5) the actual topic focus. Prompts can generate scenarios personally associated with daily events (as in the Conversation map Elicitation Procedure; Peterson & McCabe, 1983), emotion-based events (e.g., happy, sad; as in the Global TALES protocol; Westerveld et al., 2022), or autobiographical events (McAdams, 2008).

Once a personal narrative has been elicited and transcribed, it can be analysed using various language measures. Some measures such as the number of different words and the mean length of utterances are calculated as a basic count of words or an average of sentence length. In comparison, measures such as coherence, consider the narrative holistically and are more complex, often consisting of subscales in conjunction with scoring matrices (e.g., Narrative Coherence Coding Scheme: context, chronology, theme; Reese et al., 2011). This wide variety in approaches to analysing personal narratives illustrates the richness of language data that can be collected and examined in evaluating language performance. Given the relevance of personal narratives in assessment practices and for targeted intervention with adolescents with and without co-occurring communication and mental health needs, a systematic review of the literature will offer insight into the use of personal narratives in adolescent research and provide possible guidance for how these results could be applied clinically in assessment.

Current Study

This systematic literature review aims to provide a comprehensive overview of the elicitation tasks and language measures used in sampling and analysing the personal narratives of adolescents, with a particular interest in adolescents with mental health concerns. The study focuses on spoken personal narratives as this is the mode of most day-to-day social interactions and for engaging with mental health interventions. The

results will contribute to understanding the purposes and clinical utility of sampling and analysing spoken personal narratives, as a suitable tool for assessing functional language skills in adolescents.

The following research questions guide this review:

1. What areas of adolescent development or functioning are examined through the elicitation and analysis of spoken personal narratives?
2. What tasks are used to elicit spoken personal narratives from adolescents?
3. Which language measures are used to analyse the spoken personal narratives of adolescents?
4. Which tasks and language measures are used to examine the spoken personal narratives of adolescents with mental health concerns?

Method

This systematic literature review follows the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement (Page et al., 2021) drawing from data identified through a pre-registered systematic review (PROSPERO: CRD42022345679). This broader systematic literature review investigated the elicitation and analysis of personal narratives in school-aged children and adolescents and is the work of VG and MW with assistance from AW. The current literature review is a post-hoc analysis, focusing on adolescents. This review was planned and initiated as part of a separate research study into adolescents with mental health concerns and was not informed by the results of the broader systematic review. To identify studies relevant to the elicitation and analysis of personal narratives, a systematic review methodology was chosen as the most suitable approach to appraise and synthesise the results in order to inform clinical practice (Munn et al., 2018). Studies identified for inclusion in the broader review were filtered for the ages of 12;0 to 18;11 for the review reported here. Although current thinking describes adolescence as 10 to 24 years of age, this review narrowed the focus to school-aged adolescents (12 to 18 years), reflecting the years of secondary schooling in Australia.

Eligibility Criteria

Studies of all designs, both quantitative and qualitative, were acceptable for review. The pre-registered protocol for the broader systematic review investigated personal narratives, listing the following inclusion criteria: (1) children and adolescents talked about a specific, personally experienced, past event, (2) personal narratives were elicited spontaneously or by an adult, (3) defined school-age as between 4 and 18 years old, and (4) included participants with and without confirmed diagnoses of neurodevelopmental disorders. Exclusion criteria encompassed studies that: (1) did not report on the analysis of the children's personal narratives or focused on accuracy of recall, (2) reported exclusively on participants outside the specified age range or where data

for this range could not be isolated, and (3) reported on personal narratives that were co-constructed, or related to staged events.

For this post-hoc analysis, the final results were filtered to only include studies investigating the personal narratives of school-aged adolescents. This analysis applied three further exclusionary criteria: (1) results were aggregated across the age ranges (e.g., only presented combined results for 6 to 14 years old); (2) studies drew on written personal narratives, as the written mode is not commonly used in naturalistic social situations or mental health therapies, and (3) studies included participants with neurodevelopmental disorders and reported verbal or nonverbal IQ standard scores below 70, as the review aimed to describe tasks and measures appropriate for examining language at an adolescent developmental level.

Search Strategy

The original search was conducted across six databases, CINAHL & Medline (EBSCO Host), ERIC (ProQuest), ProQuest Dissertations & Theses Global, PsycINFO, and Scopus in August 2022 with no restriction on the publication period, following the PROSPERO-registered protocol. Predetermined search strings and terms used were (1) child and adolescent related: child*,adolesc*,teen*,preschool*,pre-school*,student*,kindergarten* combined with (2) narrative related: "personal narrative*", "event narrative*",recount*, "life stor*", "life narrative*", "discourse analysis". Terms were first run independently, then combined. Only peer-reviewed papers and dissertations published in English were included. This initial search yielded 17,531 studies after duplicates were removed. Due to the large number of records retrieved, no additional hand-searching of reference lists was conducted. An update search was conducted in September 2024 adhering to the same protocol, identifying a further 2,720 studies. As some databases did not accept specific dates, the date range for all six databases in the update search was set at 01/01/2022, resulting in some overlap with the initial search. Duplicates in the overlap were identified and removed through Covidence, with the final selection of full-text articles manually checked to ensure no duplicates remained. A total of 20,251 records were retained. After title and abstract screening and full-text screening, 211 studies were included in the broader review. These studies were then filtered by age-range, resulting in 58 studies being retained for full-text screening and analysis in the current review.

Reliability

Four reviewers (including AW, MW, and VG) independently screened titles and abstracts for eligibility in the broader systematic review conducted through Covidence. Consensus was reached between two reviewers, and inter-rater reliability was conducted on approximately 10% of the abstracts ($n = 1,790$) by VG, MW, and AW, showing 98% agreement on the inclusion or exclusion of studies. For the update search, AW and VG conducted the title and abstract screen followed by full text screening.

The first author (AW) conducted the process of coding the results of full text screenings from the broader review, based on the age of participants and in discussion with VG and MW when issues were identified. Final consensus for studies to be included in the current review was reached through discussion between three authors (AW, MW, and VG).

Data Extraction

For the current review, data extracted from each study included: (1) citation (title, author, year of publication), (2) country of origin and language spoken, (3) participant demographics (age, gender, diagnostic characteristics where indicated), (4) sample size, (5) study objectives, (6) number of narratives and types of prompts used for elicitation, and (7) language measures reported. The language measures were examined to extract data related to specific terminology used in referencing them. Descriptive information including the unit of measure and scoring process for each language measure was also extracted. All papers were coded by the first author. Where uncertainties were noted, three authors (AW, MW and MM) discussed until agreement was reached. The dual professional input on the review team (speech-language pathology and psychology) ensured that the full scope of the studies was well covered.

Results

Study Selection

The initial search strategy yielded a total of 20,251 studies, representing combined results from the initial and update searches and after duplicates were removed. Title and abstract screening resulted in 457 studies retrieved for full text review. Subsequently, 211 studies met eligibility criteria for the broader systematic literature review. After these studies were filtered for the target age range, 58 studies were identified. A full text review was completed, to address the additional inclusion and exclusion criteria, resulting in a final 27 eligible studies. Figure 1 presents the PRISMA flowchart, providing an overview of the initial and post-hoc analyses, reporting total numbers followed by a breakdown of original search results plus the update.

Study Quality

The quality of studies was appraised using the McMaster Critical Review Form for Quantitative Studies (Law et al., 1998). Methodological rigor was established for key areas including: (1) relevance of study design to the aim of the study (2) sampling and participant details, (3) sample size justification, (4) sample / selection bias, (5) validity and reliability of outcome measures, and (6) statistical reporting of results. The key areas of each paper were considered against the criteria listed in the McMaster Critical Review guidelines and then rated as either meeting these criteria or not.

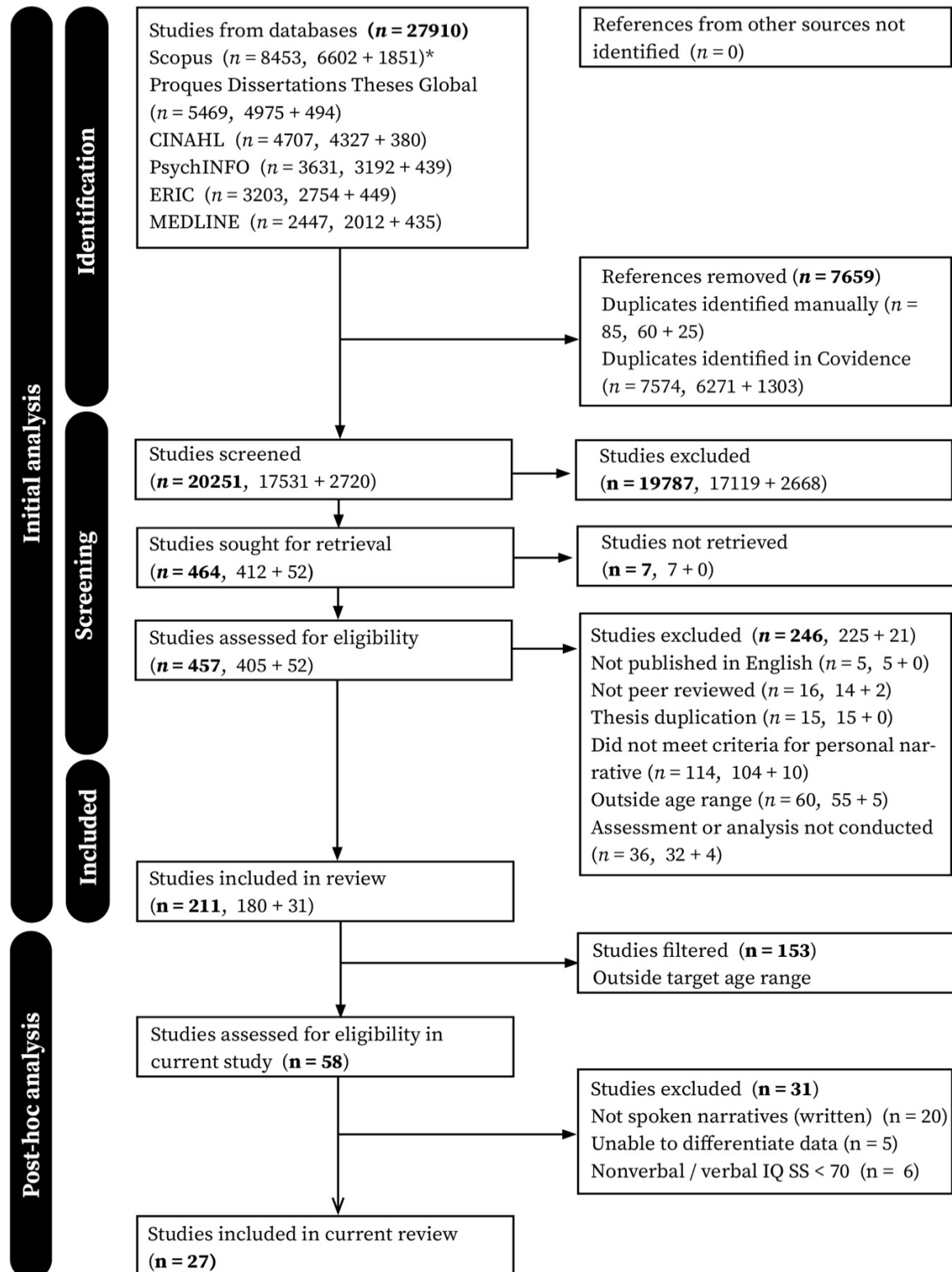


Figure 1. Prisma flow diagram.

Note. * Total number of studies is given, followed by numbers from the original search plus the update.

A final score is allocated based on the summation for each of the six key areas (i.e., a range of 0 to 6).

Quality varied across the six criteria but with generally poor ratings of less than three points in 13 out of the 27 studies. However, several factors are responsible. Study design was generally considered relevant to the stated aims. Overall, issues such as not justifying the sample size and not providing effect sizes for statistical analyses contributed to low ratings on these factors. Many studies either created scoring rubrics specific to the research area of investigation or used measures and outcomes previously reported in the literature, but which were adapted and used without piloting or reporting any reliability testing, lowering overall results for criterion five. Many studies were drawn from larger research projects and cited earlier papers for more information or details concerning aspects such as sampling, recruitment, study design, and outcomes. This made the judgment of quality difficult as earlier references were not referred to as part of this review process. In particular, details such as inclusionary and exclusionary details were not reported, and so overall rating for sampling details was rated as poor. Finally, the majority of studies were impacted by selection bias, with participants drawn from narrow demographics with some studies reporting an over-representation of parents with higher levels of education.

Study Characteristics

Data from 27 studies, reporting on 1,423 unique participants from 10 countries were extracted for further analysis. The majority of the 27 studies were conducted in English speaking countries, including the USA ($n = 14$), New Zealand ($n = 2$), Australia ($n = 2$), Canada ($n = 1$), and the UK ($n = 1$). Two studies came from Israel, one studying personal narratives in Hebrew and the other in Arabic. Other countries, each with one study, included Norway, Denmark, Germany, and Croatia. Increasing attention to the personal narratives of adolescents is reflected in the publication dates. A single study published in 1986 was identified for the entire period prior to 2000, four studies were identified between 2001 and 2010, 15 studies between 2011 and 2020, and seven studies were identified in the four years from 2021 to 2024.

Participant Characteristics

Table 1 presents an overview of the 27 studies and provides details of the participants. Four studies drew on a single participant pool and associated dataset (articles 1, 4, 26, & 27*). Similarly, studies 16 and 17** (Noel, 2011 and Noel & Westby, 2014) were a dissertation and a published paper reporting on the same dataset. These studies are highlighted in Table 1 with * or ** respectively. Overall, 1,423 participants were recruited across the studies (not including multiple counts from same participant pools and only counting adolescent participants). Sixteen studies examined personal narratives produced by typically developing adolescents, while five studies addressed clinical populations namely: deaf / hearing impaired, high-functioning autism

spectrum disorder (2 studies), young people who had suffered perinatal stroke, and hospitalised in-patients with various mental health diagnoses. Six studies targeted other groups of young people including effective / ineffective writers, young offenders in detention, adolescents from different cultural backgrounds, students with school suspension history, and young people who have reported sexual abuse.

Studies involving participants with mental health concerns.

Three studies (Lind et al., 2019; Mossige et al., 2005; Noel, 2011; Noel & Westby, 2014) involved adolescents with mental health concerns as participants, and only the Noel studies specifically examined language performance. Participants in the study by Lind et al. (2019) were inpatients in a private treatment facility (within the first two weeks of admission) and had been diagnosed with a range of mental disorders including, depressive disorders, eating disorders, and anxiety disorders. Mossige et al. (2005) examined the personal narratives of adolescents seeking support for a history of reported sexual abuse. The two studies by Noel (Noel, 2011; Noel & Westby, 2014) recruited 15 adolescents in a youth detention centre, five of whom were diagnosed with emotional disturbance. In her dissertation, Noel described the language performance of these adolescents, while the published study by Noel and Westby (2014) focused on the response to therapy of three of the adolescents with emotional disturbance. Further references to these studies will simply refer to the dissertation paper (Noel, 2011).

Areas of Adolescent Development and Functioning

The first research question asked which areas of adolescent development and functioning were examined through the elicitation and analysis of personal narratives. To answer this, the language measures analysed in each study were considered in how they related to the areas of adolescent development or functioning being investigated. As shown in Table 1, these areas included: language development (five studies), language performance (15 studies), discursive language use (nine studies), psychological functioning (14 studies), steps of social problem solving (one study), and cultural differences (two studies). Studies reporting on language development examined aspects of language specifically in relation to changes across at least two developmental time points. In comparison, studies reporting on language performance generally described or examined language using similar features of language but only at a single time point. Studies reporting on discursive language use focused on how language was used to construct meaning in relation to the phenomenological themes being investigated (e.g., generativity, masculinity).

Of the 27 studies, nine focused specifically on language aspects of personal narratives to: (1) describe adolescent language (Hill et al., 2021; Wallis & Westerveld, 2024), (2) investigate language development (Kuvač Kraljević et al., 2023; Ravid, 2005), and (3) compare language performance in target clinical populations with neurotypical and

typically developing adolescents (effective / ineffective writers, Gordon, 1986; deaf / hearing impaired, Kavar et al., 2019; autism, King et al., 2013; perinatal stroke, Reilly et al., 2013; adjudicated youths, Noel, 2011; Noel & Westby, 2014). The 14 studies that focused on psychological functioning investigated areas of well-being, narrative identity, mentalising, generativity, moral development and moral reasoning, identity diffusion, meaning-making, gendered identity, attachment, emotional expressivity, and emotion processing. Across the vast majority of studies, whatever their focus, the style of assessment was very similar. After a time of rapport building, adolescents were invited to share with the examiner their personal narratives. The various tasks and prompts used to elicit these narratives are described in the following section. Assessment sessions often also comprised other tasks or tests which targeted more directly the areas of research concern. For example, in considering the possible presentation of borderline personality disorder through features of an incoherent personal narrative, the Borderline Personality Disorder Feature Scale for Children (Crick et al., 2005) was also administered to adolescents in an inpatient setting (Lind et al., 2019).

Elicitation Tasks

Question two investigated the types of elicitation tasks that have been used to investigate adolescent language. Eleven studies elicited a single personal narrative from participants, 11 studies gathered two to four, and four studies collected six. Noel & Westby (2014) gathered several personal narratives across multiple baselines, intervention, and postintervention phases. Twelve studies, drawing from nine unique data sets, collected personal narratives of autobiographical events, namely events that participants considered to be high-points, low-points, or turning-points. These narratives were emotion-based, featuring times when the adolescent may have felt: (1) extreme joy, (2) extreme sadness, (3) in danger or frightened, and (4) very proud. Two studies investigated personal narratives relating to specific events: a recent school suspension (Kayama et al., 2015) or an incident involving sexual abuse (Mossige et al., 2005). These two studies and a third (Lind et al., 2019) drew the narratives from interview formats, with some uncertainty as to whether the personal narratives were examined as monologues. Three studies explored social or interactional events using prompts such as, “a time when someone calmed you down” or “a time you hurt someone”. Hill et al. (2021) and King et al. (2013) collected personal narratives of times related to daily events (e.g., “Tell me all about what you did on the weekend.”), and Wallis and Westerveld (2024) collected a variety of personal narratives related to emotion-based and social interaction-based events. While some personal narratives were elicited within broader contexts such as an interview (e.g., Lind et al., 2019) or therapy session (e.g., Mossige et al., 2005), most were elicited as a stand-alone monologue (22 studies).

Table 1. Overview of studies included in the review

Author (Year)	Population/Language Sample Size Age Range	Aims / Objectives To examine:	Areas of Functioning	Elicitation Task	Narrative Measures
1. Bohanek and Fivush (2010)*	TD, English speaking N = 66 (32F) 13 - 14yrs (n = 37) 15 - 16yrs (n = 29)	Gender differences Relations between ISL and emotional well-being	Language performance Psychological functioning	Four personal narratives • Two positive: e.g., excited or proud • Two negative: e.g., angry, sad, or scared	• Narrative topic or category • TNW • ISL: cognitive state words, emotion words, general affect
2. Chen et al. (2012)	TD, English speaking N = 90 (47F) 12 - 14yrs (n = 29) 15 - 17yrs (n = 31) 18 - 21yrs (n = 30)	Age, gender, event valence differences in coherence Relation between narrative coherence, well-being and prosocial behaviour	Language performance Language development Psychological functioning	Two personal narratives • Low point event: e.g., “extreme sadness, loneliness, fear” (always narrated first) • High point event: e.g., “extreme excitement, happiness, or peace” + follow-up questions	• Event type • Interview length - TNW • Narrative coherence ◦ Theme (Reese et al., 2011) ◦ Developmental consequentiality (Habermas & de Silveira, 2008) ◦ Meaning-making (McLean & Pratt, 2006)
3. Dianiska et al. (2024)	TD, English speaking N = 125 (84F) 14 - 19yrs	Effects of rapport building techniques in encouraging disclosure	Language performance	One personal narrative • Life event: “negative event or delinquent behaviour” of high seriousness	• TNW • Seriousness of event • Number relevant timeline details / evaluative details
4. Fivush et al. (2012)*	TD, English speaking N = 65 (32F) n = 37; 13 - 14yrs	Gender and event valence differences	Language performance	Four personal narratives • Two positive: “really happy, excited, or proud”	• Coherence (Reese et al., 2011) • Elaboration (Fivush et al., 2000) • ISL: cognitive state words,

Author (Year)	Population/Language Sample Size Age Range	Aims / Objectives To examine:	Areas of Functioning	Elicitation Task	Narrative Measures
	<i>n</i> = 28; 15 - 16yrs	Relations between narrative features and meaning-making and narrative identity	Psychological functioning	Two negative: “really angry, sad, or scared”	emotion words, general affect - Reflection: Insight (McLean & Pratt, 2006) - Connection - Agency - Narrative coherence: context, structure, evaluation (Baerger & McAdams, 1999) - Mentalising complexity
5. Foldager et al. (2024)	TD, Danish speaking <i>N</i> = 86 <i>n</i> = 12; 7 - 8;11yrs <i>n</i> = 26; 9 - 10;11yrs <i>n</i> = 24; 11 - 12;11yrs <i>n</i> = 24; 13 - 14;11yrs	Relations between narrative coherence and mentalising complexity across different narrative genres	Language performance Language development Psychological functioning	Six personal narratives Autobiographical memories + five fictional stories	
6. Frensch et al. (2007)	TD, English speaking Longitudinal study: <i>n</i> = 40; <i>M</i> = 14yrs <i>n</i> = 35; <i>M</i> = 16yrs <i>n</i> = 32; <i>M</i> = 20yrs	Development of generativity (caring for others)	Discursive language use Psychological functioning	Two personal narratives Critical turning point event: “real impact on the kind of person you are today”	- Generative themes - Caring - Productivity - General generativity (Peterson & Stewart, 1993)
7. Gordon (1986)	English speaking <i>N</i> = 10F Effective writers <i>n</i> = 5; 16;1 - 18;8yrs Ineffective writers <i>n</i> = 5; 16;5 - 17;11yr	Differences between spoken and written language Differences between effective and ineffective writers	Language performance	Two spoken personal narratives A time you were in danger or frightened Two written personal narratives	- Segmentation - Narrative and evaluative clauses (Labov & Waletzky, 1967) - Lexicon - Syntax - Information and propositions (Clark & Clark, 1977)

Author (Year)	Population/Language Sample Size Age Range	Aims / Objectives To examine:	Areas of Functioning	Elicitation Task	Narrative Measures
8. Hill, Whitworth, et al. (2021)	TD, English speaking N = 160 (88F) 12;0 – 15;11yrs	Differences in language across four different genres	Language performance	Three personal narratives • On the weekend • Accidents / injury • On a recent holiday	Micro-linguistic: • TNU, NDW, MLU • Number maze words; % maze words Micro-structural: • Cohesion: frequency and adequacy (Liles, 1985) Macro-structural: • Coherence: local and global (Glosser & Deser, 1991) • Correct Information Unit: relevance and efficiency (Nicholas & Brookshire, 1993) Super-structural: • Schema and order deviations • Genre shifts
9. Kwar et al. (2019)	Arabic speaking N = 124 (56F) Deaf / Hard of hearing n = 61; 12 - 16yrs Typical developing n = 63; 12 - 16yrs	Differences between adolescents with and without hearing loss	Language performance	One personal narrative • A time when you felt in danger or frightened	Macrostructure: • Story grammar (Labov & Waletzky, 1967) • High point analysis (Peterson & McCabe, 1983) Microstructure: • Productivity ○ Number content words; grammatical morphemes; syntactic units • Morpho-syntactic errors

Author (Year)	Population/Language Sample Size Age Range	Aims / Objectives To examine:	Areas of Functioning	Elicitation Task	Narrative Measures
					- Percentage complex sentences + Use of Modern Standard Arabic
10. Kayama et al. (2015)	Students who had received school suspensions English speaking N = 31 (10F) 11-17yrs	Use of criminal justice language	Discursive language use	One personal narrative Specific incident which led to school suspension Additional interview prompts	Criminal justice terms
11. King et al. (2013)	English speaking N = 81 High-functioning, ASD n = 27; 11-14yrs Language-matched n = 27; 5 - 15yrs Age-matched n = 27; 11-14yrs	Differences between adolescents with ASD and TD	Language performance	Six personal narratives Specific events (e.g., going on holidays, a birthday, a time you felt scared) + six recounts of general events (picture prompts used for autistic adolescents)	- Number of main body words - TNU; MLU - Number different word roots - Number mazes; maze words - Evaluative devices: Mental states, causal statements, character speech, negative comments, emphatic markers, hedges
12. Kuvač Kraljević et al. (2023)	TD, Croatian speaking N = 60 (34F) n = 20; 7.3 - 8.11yrs n = 20; 9.6 - 11.5yrs n = 20; 12.1 - 13.9yrs	Age, gender, and event valence differences Age sensitivity of Global TALES protocol	Language performance Language development	Six personal narratives Emotion-based events	- Lexical diversity: Lemma-token ratio, NDW - Productivity: TNW - Syntactic complexity: MLU-words, clausal density - Narrative coherence (Reese et al., 2011)
13. Lind et al.	Psychiatric	Narrative coherence	Psychological	One personal narrative	Narrative coherence

Author (Year)	Population/Language Sample Size Age Range	Aims / Objectives To examine:	Areas of Functioning	Elicitation Task	Narrative Measures
(2019)	inpatients - multiple mental health diagnoses English speaking N = 70 (56F) 12-17yrs	and identify diffusion	functioning	- Generated in Child Attachment Interview (Target et al., 2007) + two parent narratives	(Baerger & McAdams, 1999)
14. McMain (2022)	TD, “male adolescents of colour” English speaking n = 4; 15 – 17yrs	Formation of gendered identity	Discursive language use Psychological functioning	Two personal narratives - A time when someone calmed you down - A time when you calmed someone else down	Content analysis of themes: - Masculinity - Friendship - Choices
15. Mossige et al. (2005)	Children and adolescents who report being sexually abused Norwegian speaking N = 10 (8F) 7-16yo n = 2; 13 & 16yo	Language differences in telling events of sexual abuse compared with a stressful event Meaning-making of experiences	Language performance Psychological functioning	Two personal narratives - Most complex narrative pertaining to sexual abuse - Most elaborate narrative pertaining to a stressful event (extracted from therapy session)	- Level of elaboration (Stein & Albro, 1996) - High point analysis (based on Peterson & McCabe, 1983) - Contextual embeddedness (Buckner & Fivush, 1998) - Causal coherence (Habermas & Paha, 2001)
16. Noel (2011)**	Youth offenders in correctional facility English speaking N = 15M Typically achieving	Narrative skills and social problem-solving skills in high-risk adolescents	Language performance Social problem solving	Three personal narratives - Wanting something different - Asked to do something that not supposed to do	- Syntactic complexity: MLU - Story grammar (Fey et al., 2004) - Landscape of consciousness: emotions, metacognitive (Westby & Clauser, 1999)

Author (Year)	Population/Language Sample Size Age Range	Aims / Objectives To examine:	Areas of Functioning	Elicitation Task	Narrative Measures
	<i>n</i> = 5; 16;0 – 18;11yrs Emotion Disorder <i>n</i> = 5; 16;0 – 18;11yrs Learning disability <i>n</i> = 5; 16;0 – 18;11yrs			• Being told to do something that wasn't liked	• Connective words • Social problem-solving steps
17. Noel and Westby (2014)**	Youth offenders held in correctional facility English speaking Diagnosis of Emotion Disorder <i>N</i> = 3 (male) 17;0 – 19;11yrs	Intervention efficacy - targeting social problem solving strategies	Language performance Social problem solving	Four personal narratives: three at baseline, one at mastery of intervention • Wanting something different • Asked to do something that not supposed to do • Being told to do something that wasn't liked + additional prompts	• Story grammar (Fey et al., 2004) • Landscape of consciousness: emotions, cognitive states, judgement (Westby & Clauser, 1999) • Social problem-solving steps
18. Ravid and Cahana-Amitay (2005)	TD, Hebrew speaking <i>N</i> = 80 <i>n</i> = 20; 9 - 10yrs <i>n</i> = 20; 12 - 13yrs <i>n</i> = 20; 16 - 17yrs <i>n</i> = 20; 18+yrs	Use of verbal and adjectival nominals	Language development	One spoken personal narrative • A time when you had a problem with someone + one written narrative	• TNU-clauses • Number of finite and non-finite lexical verbs • Number of verb- and adjective-related nominals • Total predicative content
19. Recchia et al. (2015)	TD, English speaking <i>N</i> = 100 (52F) <i>n</i> = 34; 6.0 - 8.14yrs <i>n</i> = 33; 9.9 - 12.11yrs	Moral development comparing prosocial and transgressive behaviour	Discursive language use Psychological	Two personal narratives • A time when you hurt or upset someone • A time when you helped	• TNU-clauses • Narrative elements ○ Helpful or harmful actions ○ Conflict

Author (Year)	Population/Language Sample Size Age Range	Aims / Objectives To examine:	Areas of Functioning	Elicitation Task	Narrative Measures
	<i>n</i> = 33; 15.0 - 17.2yrs		functioning	a good friend (always last)	○ Reasons for harm or help ○ Consequences ● Self-related insights
20. Recchia et al. (2020)	TD, English speaking <i>N</i> = 275 (136F) (three datasets) <i>n</i> = 91; 6.3 - 8.5yrs <i>n</i> = 93; 10.4 - 12.5yrs <i>n</i> = 91; 15.3 - 18.0yrs	Relationship between expressions of emotion, motivations, and behaviours Development of emotional, social, psychological, understanding	Discursive language use Psychological functioning	One personal narrative ● A time when a friend did or said something that hurt you ● A time when kids wouldn't let you join in ● A time when a friend did or said some-thing that made you feel hurt or angry	● Narrative elements: ○ Emotion terms ○ Relationship contexts ○ Behavioural responses to harm ○ Motivations ○ Interpretations / evaluations
21. Reese et al. (2017)	TD, English speaking <i>N</i> = 268 (142F) Māori <i>n</i> = 90 Chinese <i>n</i> = 88 European <i>n</i> = 90 <i>n</i> = 80; 12-14yrs <i>n</i> = 92; 15-17yrs <i>n</i> = 96; 18-21yrs	Relationship between narrative identity, personality traits, and well-being Comparisons between three cultural groups	Discursive language use Psychological functioning Cultural differences	One personal narrative ● Turning point: event that has changed your life + specific follow-up questions	● Topic (Thorne et al., 2004) ● Causal coherence (Habermas & de Silviera, 2008) ● Thematic coherence (Reese et al., 2011) ● Emotional expressivity ○ Judgement ○ Event/emotion valence ○ Evaluation
22. Reilly et al. (2013)	English speaking Perinatal stroke <i>N</i> = 95 (47F) Right lesion	Later language development Comparisons	Language performance Language	One personal narrative ● A time when someone made you mad or sad	● Productivity: number of propositions ● Morphosyntactic errors ● Syntactic depth

Author (Year)	Population/Language Sample Size Age Range	Aims / Objectives To examine:	Areas of Functioning	Elicitation Task	Narrative Measures
	<i>n</i> = 9; 7.1 - 11.9yrs <i>n</i> = 6; 13.2 - 16.7yrs Left lesion <i>n</i> = 12; 7.9 - 11.4yrs <i>n</i> = 8; 12.5 - 16.6yrs Typical developing <i>n</i> = 30; 7.5 - 11.8yrs <i>n</i> = 30; 12.0 - 16.8yrs	between groups with perinatal stroke and TD	development	Prompting for specific narrative elements	• Complex syntax rate • Overall story grammar (Labov, 1972) • Narrative sophistication (Tolchinsky et al., 2002) ○ Setting
23. Senland and Higgins-D'Alessandro (2013)	English speaking <i>N</i> = 32 (9F) High-functioning ASD + Nonverbal learning disorder <i>n</i> = 16; 13-18yrs Typical developing <i>n</i> = 16; 12-18yrs	Development of moral reasoning and empathy	Discursive language use Psychological functioning	One personal narrative • A difficult time when you had a problem and didn't know what to do Follow-up questions to explore further	Content analysis for: • Empathic concern • Perspective taking • Sociomoral event types
24. Voswinckel and Stangier (2021)	TD, German speaking <i>N</i> = 60 (32F) 2 nd generation Turkish immigrants <i>n</i> = 30; 13 - 18yrs German peers <i>n</i> = 30; 13 - 18yrs	Intensity and regulation of pride experiences Comparison between two cultural groups	Discursive language use Cultural differences	One personal narrative • A time when you felt proud about yourself Specific prompts for narrative elements	Content analysis of pride categories: • Antecedents/triggers • Source of evaluation • Responses
25. Wallis and	TD, English speaking	Comparison across	Language	Six personal narratives	• TNU - C-units

Author (Year)	Population/Language Sample Size Age Range	Aims / Objectives To examine:	Areas of Functioning	Elicitation Task	Narrative Measures
Westerveld (2024)	N = 44 (23F) 12;2 – 17;11yrs	four genres	performance	• Happy/exciting time • Worried/confusing time • Problem time • Annoying person • A bully • Important person/event	• MLU-words • Moving average - NDW • Words per minute
26. Zaman and Fivush (2011)*	TD, English speaking N = 65 (34F) n = 37; 13 - 14yrs n = 28; 15 - 16yrs	Gendered narrative identity Comparison of intergenerational stories	Language performance Discursive language use Psychological functioning	Two personal narratives • A really positive event, happy, excited, or proud + Two stories each about mother and father	• TNW • Narrative elaboration (Fivush et al., 2000) • Narrative theme ○ Affiliation ○ Achievement • ISL: emotion words/references, cognitive state words
27. Zaman and Fivush (2013)*	TD, English speaking N=65; 13 – 16yrs	Attachment and intergenerational stories	Psychological functioning	Four personal narratives • Really positive event • Really negative event + two stories each about mother and father	• Coherence (Reese et al., 2011)

Note. * Studies 1, 4, 26, and 27 drew on data from the same participant pool. ** Studies 16 and 17, a dissertation and published paper, drew on data from the same participant pool. TD = typically developing (as defined by the original authors); F = female; TNW = total number of words; TNU = total number of utterances; NDW = number of different words; ISL = internal state language

There was also considerable variability in the style of prompts. Some narrative prompts simply stated the target scenario, others provided some scaffolding as examiners briefly shared a personal narrative of their own, and yet others provided more extensive scaffolding such as, “tell me what happened from the beginning to the end, what did you think and feel, and what the memory meant to you” (Foldager et al., 2024). In eight studies, researchers developed or adapted elicitation protocols based on scenarios the researchers anticipated would inform a specific topic of investigation. For example, Recchia et al. (2015) used the elicitation prompt: “Tell me about a time when you did or said something that ended up helping/hurting one of your good friends”, to investigate moral development by comparing responses to prosocial and transgressive behaviour. The Global TALEs protocol (Westerveld et al., 2022) that involves six mainly emotion-based prompts was used by Kuvač Kraljčić et al. (2013) to test the sensitivity of the protocol to track language development in the Croatian language. In some studies, examiners provided scaffolding within the prompt, specifically mentioning target narrative elements (e.g., “Tell me how it started, what happened, and how it all ended”; Reilly et al., 2013). One final study of note, Dianiska et al., 2024, examined three different rapport building conditions prior to eliciting the personal narratives, to determine the possible impact of each condition, suggesting that even the preliminary rapport building stage could exert an influence on narrative production.

Language Measures

In addressing research question three, around 50 language measures were identified across the studies, although confounding factors described below, inflated this count. Almost half the studies (44%) analysed four to six language measures, with studies specifically investigating language skills tended to examine more language measures overall (compared to studies investigating psychological functioning), using from 4 to 14 different measures. Most studies of psychological functioning tended to focus on language measures examining theme, coherence, and internal state words (emotion terms and mental state terms), while of the nine studies investigating language performance, two studies examined coherence, and two studies counted internal state words. The nine language studies tended to incorporate a broader range of measures at word, sentence, and text level to describe language development and performance, with six studies using language measures at each level. The most frequently used language measures in these studies were: (1) word-level measures - total number of words (three studies) and number of different words (five studies), (2) sentence-level measures – mean length of utterance (four studies) and total number of communicative units or sentences (five studies), and (3) text-level measures – number of story grammar components (three studies).

Confounding issues in providing an exact count of unique language measures were: (1) some measures, although differently named, appeared to evaluate the same or very similar narrative language feature (e.g., narrative clauses and timeline units); (2)

some studies named and reported on a single measure such as “coherence”, while other studies broke this measure down into components, reporting on individual components (e.g., context, chronology, theme, Reese et al., 2011); and (3) some studies investigated the same measure, but employed different scoring and analysis procedures.

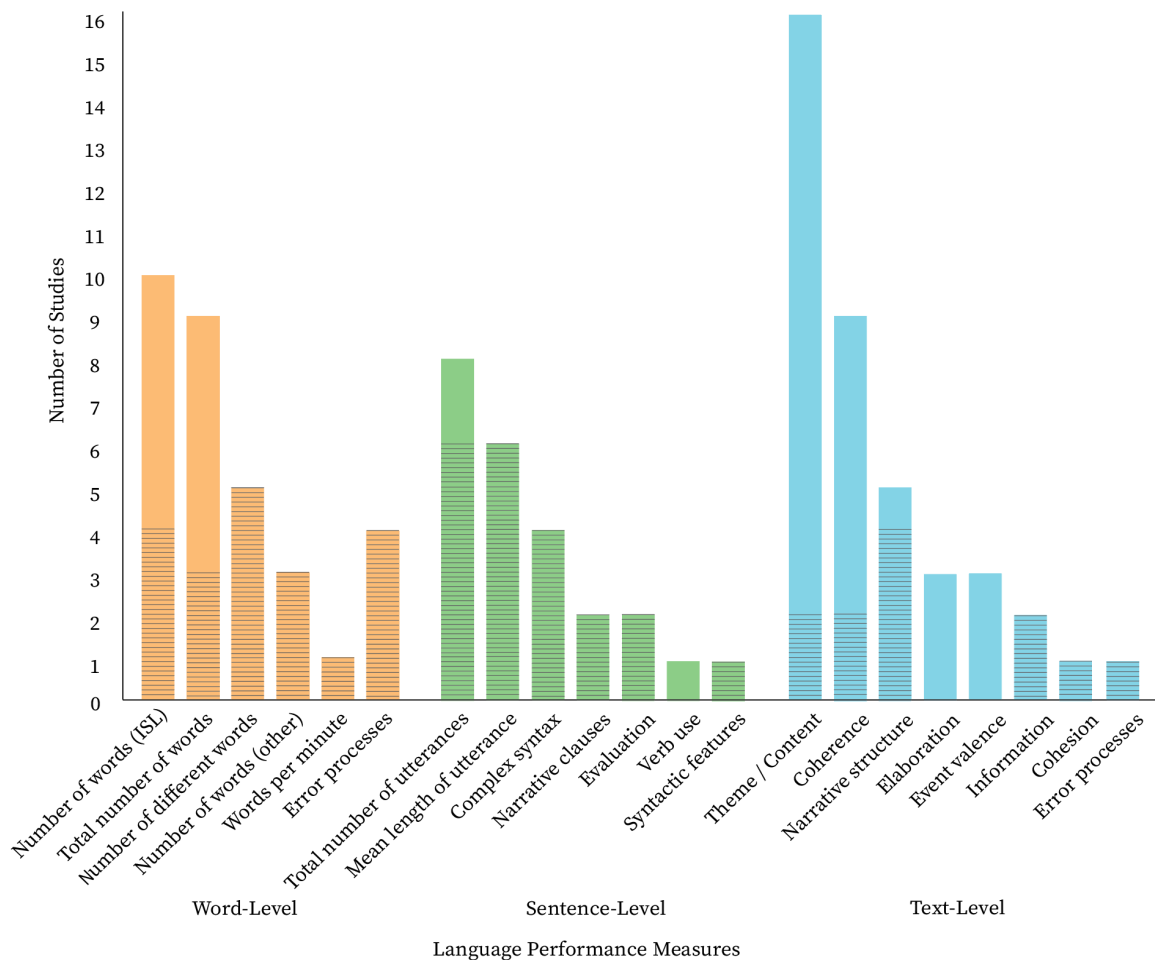


Figure 2. Number of studies reporting outcomes for language performance measures at word, sentence, and text levels. Note. Each bar represents the total number of studies that used each language performance measure, with shaded areas in each bar representing the number of studies specifically investigating language performance. Orange bars represent word-level language performance measures, green bars represent sentence-level measures, blue bars represent text-level measures.

Figure 2 presents an overview of the language performance measures, categorising them as word-, sentence-, and text-level language measures, and the number of studies that reported on each measure. Shading is used to highlight the number of studies

that specifically studied language skills compared to those that studied an area of psychological functioning.

Table 2 provides a more detailed and descriptive overview of the language measures, referencing the studies by citing the numbers assigned in Table 1 (studies focused specifically on language performance are bolded and italicised) and reflects the same terms that were used by original authors. In both Figure 2 and Table 2, several language measures have been collapsed under similar headings, as they are considered to be variants of the same type of measure or appear to be evaluating the same or similar aspect of language. For example, measures of lexical diversity, including number of different words, moving-average number of different words, type-token ratio, words-used-once ratio, different word roots, and lemma-token ratio, have been grouped together. To determine the most appropriate category, the various outcomes have been considered in terms of, “What is the basic unit of measure: word, sentence, or text?” In Table 2, some multi-component measures are listed both as the overall language measure (e.g., coherence) and as individual components (e.g., context).

Table 2. Descriptive overview of language measures identified as of interest

Language Measures	SLR articles [#]	Referred to as*	Scoring
Word-level measures			
Total number of words / content words / main body words / morphemes	1, 2, 3, 4, 5, 9, <i>11</i> , <i>12</i> , 26	Narrative length Language productivity Macrostructure	Count
Number of different words / moving average-number of different words / type-token ratio / words-used-once ratio / different word roots / lemma-token ratio	7, 8, <i>11</i> , <i>12</i> , 25	Lexical diversity	Count Ratio Average
Number of specific words - internal state language: - emotion terms, general affect, cognitive terms, mental state verbs, metacognitive, intent, desire, judgment	1, 3, 4, 7, <i>11</i> , <i>16/17</i> , 20, 26, 27	Lexicon Internal state language Evaluation, evaluative devices Landscape of consciousness	Count Percentage

Language Measures	SLR articles [#]	Referred to as*	Scoring
Number of specific words - other: - connective words, conjunctions, intensifiers, emphatic markers	7, 11, 16	Lexicon Evaluation	Count
Words per minute	25	Verbal facility	Average
Error processes at word level:		Morpho-syntax	Count
Morpho-syntactic errors	9, 22	Microlinguistic	Percentage
Dysfluency: number of maze words	8, 11	Microstructure	
Sentence-level measures			
Total number of utterances / C- units / T-units / propositions / clauses / intonation units	7, 8, 9, 11, 18, 19, 22, 25	Narrative length Language productivity	Count
Mean length of utterance - in words / morphemes / C-unis / T- units	7, 8, 11, 12, 16, 25	Syntactic complexity	Average
Complex syntax - clausal density / syntactic depth / percentage of complex sentences	8, 9, 12, 22	Syntactic complexity	Count Percentage
Narration / Narrative clauses / timeline units	3, 7	Narrative coherence	Count Percentage
Evaluation / Evaluative units: negative comments, causal statements, hedges, dialog, explicatives, comparitors, correlatives	7, 11	Evaluation	Count Percentage
Number of finite / non-finite verbs, number of verb- & adjective-nominals	18	Lexico-syntactic	Count Percentage
Syntax: form, function, position of clauses	7	Syntax	Count Percentage
Text-level measures			
General narrative theme / event type	1, 2, 21	Language expression	Semantic Category

Language Measures	SLR articles [#]	Referred to as*	Scoring
Narrative theme / content specific to research focus (e.g., generativity, connection, reflective insight)	2, 4, 5, 6, 10, 14, 15, 16/17, 18, 19, 20, 21, 23, 24, 26	Multiple constructs	Semantic Present/Absent Rating scale
Event valence	1, 2, 4	Valence	Semantic Category Rating scale
Coherence: Context, thematic, chronology (NaCCS, Reese et al., 2011)	2, 4, 12, 27	Coherence	Rating scale
Coherence: Context, structure, evaluation, integration (Baerger & McAdams, 1999)	5, 13	Coherence	Rating scale
Local / Global coherence (Glosser & Deser, 1990)	8	Macrostructure Coherence	Rating scale
Developmental consequentiality / causal (Habermas & De Silveira, 2008)	2, 15	Coherence	Rating scale
Context / setting / orientation / contextual embeddedness	4, 5, 12, 13, 15, 22	Coherence Narrative sophistication Narrative structure	Count Rating scale
Story grammar analysis	9, 16/17, 22	Macrostructure Coherence	Count Rating
High point analysis	9, 15	Narrative structure Macrostructure Coherence	Rank / Level
Elaborated structure / Elaboration	4, 15, 26	Narrative structure	Rank / Level Rating scale

Language Measures	SLR articles [#]	Referred to as*	Scoring
Information unit / propositional analysis: relevance, efficiency, depth, centres-of-interest	7, 8	Information Macro-structure	Count Average Percentage
Cohesion: frequency, adequacy	8	Microstructure	Count Percentage
Structural errors: genre shifts, schema and order deviations	8	Superstructure	Count

Note. [#] Articles are represented by the numbers assigned in Table 1. * Terms reflect those used by the original authors. Numbers italicised represent articles that focused on language performance.

Word-level Language Measures

At word level, measures were included if they addressed either words or morphemes. Of the 27 studies, 17 (48%), drawing from 13 unique data sets, used word-level language measures. The most frequently occurring measure was total number of internal state words as reflecting cognitive or emotional processes (10 studies). In some studies of psychological functioning, narrative length was used as a control variable in statistical analyses. Other word-level measures included total number of words, number of different words and counts of specific vocabulary, both semantic and syntactic (e.g., finite verbs, connective words). Two final language measures at word level were error measures of dysfluency (maze words) and morpho-syntactic errors. In all studies, measures were presented as frequency counts, averages, or percentages / proportion of the total.

Sentence-level Language Measures

Language measures that examined either phrases, clauses, communicative-units, or utterances were included at the sentence level. Narrative clauses (also referred to as timeline units) and evaluative clauses are considered at sentence level, as judgments were generally made utterance by utterance. Eleven studies (40%) reported on sentence-level language measures, with nine of these studies focused specifically on language performance. The most frequently occurring sentence-level measure was total number of utterances also used as a measure of language productivity or narrative length. There were no error measures at sentence level noted. Again, measures were generally reported as frequency counts, averages, or proportions / percentages.

Text-level Language Measures

Language measures were categorised as text level, if more than one sentence was considered in analysing the narrative. For example, Hill et al. (2021) examined cohesion, describing it as an across-sentence measure, hence it has been placed at text level. Twenty-four studies (89%), involving 19 data sets, reported findings related to text-level measures. Measures related to theme and content were the most commonly occurring, used in 17 studies (63%). Three studies used previously developed lists of categories to identify narrative themes, compared to 16 studies that developed novel lists of key words and phrases specific to the research question. Themes included: generativity (Frensch et al., 2007), mentalising complexity (Foldager et al., 2024), use of criminal justice terms (Kayama et al., 2015), attachment (Lind et al., 2019; Zaman & Fivush, 2013), gendered identity formation (McMain, 2022), meaning-making of traumatic events (Mossige et al., 2005; Recchia et al., 2019), social problem solving (Noel, 2011; Noel & Westby, 2014), moral agency and reasoning (Recchia et al., 2015; Senland et al., 2013), emotional expression and processing (Recchia et al., 2019; Reese et al., 2017), experiences of pride (Voswinckel et al., 2021), and affiliation and achievement (Zaman et al., 2011). Event valence (positive or negative) was considered in three studies however, this was often inherently pre-determined by specific elicitation prompts (i.e., talking about a high-point or a “really negative” event).

Narrative structure was measured through story grammar (three studies), high point analysis (two studies), and elaboration (three studies). It was also considered as a feature of coherence, especially the orientation (variously referred to as setting or context) (six studies). Coherence was measured in nine studies, however the terminology, measures, theoretical constructs, and combinations of features varied. Some studies used existing models of coherence in totality (e.g., the Narrative Coherence Coding Scheme, Reese et al., 2011), while others only used single subscales, notably context or causality. Error processes (schema deviations, order deviations, and genre shifts) were investigated by Hill et al. (2021).

Adolescents with Mental Health Concerns

Research question 4 examined which elicitation tasks and language measures were used to examine and analyse the personal narratives of adolescents with mental health concerns. Three different approaches were used to elicit personal narratives from adolescents with mental health concerns. Mossige et al. (2005) extracted spoken personal narratives from the therapy transcripts of adolescents seeking support for a history of reported sexual abuse, while Lind et al. (2019) examined inpatient adolescents' personal narratives that were elicited within the context of the Child Attachment Interview (Target et al., 2007). Noel (2011) used an elicitation task that targeted social problem-solving skills, with prompts developed specifically around the research questions (e.g., *“Tell me a story about a time with your family or friends that you wanted something, and they wanted something else. Tell me what you were thinking and how you solved the problem.”*)

Eight language measures were used to analyse the personal narratives across the three studies. Lind et al. (2019) and Mossige et al. (2005) focused on language measures at the text level. Coherence was examined by Lind et al. (2019), employing the approach developed by Baerger & McAdams (1999), while Mossige et al. (2005) examined contextual embeddedness, causal coherence, level of elaboration, and high point analysis. Noel (2011) investigated the language measures of story grammar, landscape of consciousness (internal state language), and the presence of social problem-solving strategies.

Discussion

This systematic literature review revealed that, as predicted, the majority of studies (18 out of 27) investigating the spoken personal narratives of adolescents addressed other aspects of development, namely psychological functioning, while only one third of the studies focused on aspects of language performance. Only the dissertation paper by Noel (2011; see also Noel & Westby, 2014) examined an aspect of psychological function and language in their investigation of the personal narratives told by adjudicated youths. However, only the language content of the narrative was considered as a measure of social problem-solving. No cognitive- or behaviour-based measures were used to determine social problem-solving skills, and so these were considered language-focused studies. Across the 27 studies, areas of investigation ranged from emotional well-being (Chen et al., 2012), to factors involved in gendered identity (McMain, 2022), and to linguistic differences in grammatical features and narrative structure between deaf and hard of hearing adolescents and typically developing peers (Kawar et al., 2019). Despite this broad range, and contrary to expectations, only three of the 27 studies investigated the personal narratives of adolescents with identified mental health concerns (Lind et al., 2019; Mossige et al., 2005; Noel, 2011). Finally, of the nine studies that specifically focused on language skills, four studies examined language development in typically developing adolescents, and five studies investigated language performance in clinical populations: autism, deaf and hard of hearing, perinatal stroke, and emotion disorder.

The review highlighted an increasing interest in the personal narratives of adolescents over the past three decades, particularly by researchers investigating psychological functioning, reflecting the important role of personal narratives in social and emotional development. Based on the relatively low number of studies, there seems to be less interest in the specific language aspects of adolescents' personal narratives. Although language skills continue to develop throughout adolescence (Heilmann, Malone, et al., 2020; Hill, Claessen, et al., 2021; Nippold, 2016), it may be that given the increasing demand on language skills from educational curricula, research has focused more on academic discourse genres such as moral reasoning and persuasion (see Lundine, 2020). However, language researchers should not disregard the equally important role of language for maintaining social connections and emotional well-

being, especially in the light of evidence of a high and increasing prevalence of mental health concerns amongst adolescents (Sacco et al., 2024).

Elicitation Tasks and Procedures

The range of elicitation tasks described in the research demonstrates how well-suited this discourse genre is for assessing adolescent language skills. From a clinical perspective, assessing an adolescent's ability to independently and chronologically organise their language to construct a personal narrative is important when deciding if intervention for text-level language is required (Miller et al., 2016). This review found that such an approach is certainly feasible in clinical practice, as demonstrated by several studies that elicited personal narratives as a monologue and used prompts that contained minimal scaffolding. This was particularly evident in the studies focusing on language skills (e.g., Kavar et al., 2019; Hill et al., 2021; Wallis & Westerveld, 2024). However, several potential factors influencing the clinical decision-making process were highlighted in the review. For example, the results of Dianiska et al. (2024) suggest that enhanced rapport building prior to assessment impacts the production of personal narratives. Dianiska et al. investigated the impact of different types of rapport building on adolescents' personal narratives, in terms of length of narrative and the amount of detail in both the narrative action and evaluative statements. They interviewed 125 adolescents, asking them to describe a serious life event (previously identified on a life event questionnaire). Interviewers used one of three conditions in building rapport with the adolescent: (1) standard rapport, where participants were asked a series of closed-ended background questions, (2) open-ended rapport, which involved open-ended, getting-to-know-you questions, and (3) enhanced rapport which involved open-ended questions with mutual self-disclosure by the examiner. Dianiska et al. (2024) found that when an examiner engaged in the enhanced rapport building condition, adolescents produced longer narratives that contained more timeline details, an important consideration when assessing language performance.

Another factor potentially influencing the clinical decision-making process was the type of prompt used to elicit the personal narratives. In general, researchers used prompts that were specifically phrased to align with their research focus, often involving a problem-based scenario (e.g., Recchia et al., 2015 to investigate moral reasoning). Autobiographical events based on the life story construct (Habermas & Bluck, 2000; McAdams, 2008) were most commonly used in studies examining psychological functioning, whereas the research investigating adolescents' language performance used a greater variety of elicitation prompts, including problem-based events, emotion-based events, daily events, or a combination of these (e.g., Wallis & Westerveld, 2024). Further, only one or two personal narratives related to life events were elicited in studies focusing on psychological functioning; while in studies targeting language, up to six personal narratives were elicited (e.g., King et al., 2013). Overall, these findings highlight that there is more than one way to sample adolescents'

personal narratives, and SLPs approaching assessment with an adolescent client could tailor the task and prompt/s to best suit the clinical focus. For example, adolescents with mental health issues could be prompted for personal narratives that are emotion-based, while those with difficulties in social interactions could be prompted using more socially-based scenarios. In the absence of normative data, the more important issue is to use a task that is meaningful and offers the greatest clinical utility. Protocols for eliciting personal narratives that included mutual sharing by the examiner would appear to encourage longer and more detailed narratives (e.g., Dianiska et al., 2024). However, eliciting several personal narratives may help to ensure that two or three longer narratives could be selected for analysis, providing more reliable outcomes (Kuvač Kraljević et al., 2023).

Narrative Language Measures

The review identified several language measures across word-, sentence-, and text-level categories, highlighting the analysis of personal narrative as a rich source of data. Studies that focused on psychological functioning as reflected in their research questions, employed a relatively narrow range of language measures, using them in a phenomenological manner to explore psychological constructs rather than language per se. For example, Fivush et al. (2012) measured coherence and internal state language to identify gender differences in meaning-making and narrative identity. In comparison, the nine studies specifically investigating adolescents' language skills, employed a greater number and diversity of word-, sentence-, and text-level measures to describe language skills, as well as measures of linguistic errors. However, many researchers used language measures that treated personal narratives as general language samples rather than recognising them as a distinct and unique discourse genre, which has important differences from other genres. For example, the majority of language studies looked at language productivity (total number of words and/or total number of communication units or sentences) and language diversity and complexity (number of different words and mean length of utterance). These language measures are investigated across various genres including persuasion (Heilmann, Malone, et al., 2020), moral reasoning (Wallis et al., 2021), summarising (Lundine et al., 2018), and explaining a favourite game or sport (Heilmann & Malone, 2014). Language measures such as coherence and internal state language, that could characterise language performance in this specific genre, a genre that is closely linked with social and emotional aspects of adolescence, were only measured in four studies of language performance: two studies investigating coherence and two different studies investigating internal state language. The study by Noel (2011), the only language study with a mental health focus, looked at emotion words and mental state verbs but examined story grammar as a text-level measure.

In summary, these results clearly show how language measures can be selected based on the purpose of the assessment in clinical use. To ensure this, the clinician or researcher needs to first consider which measures will provide the most useful

information. For example, questions regarding an adolescent's vocabulary skills would suggest word-level measures such as number of different words, or specific lexicons such as emotion words, or identifying semantic errors. However, a key advantage of discourse sampling and analysis is its ability to assess text-level language skills, which are not measured by standardised, norm-referenced language tests. The large number of studies focused on psychological functioning, which used coherence as a measure, associating it with social and emotional development in adolescents, suggests that coherence would be an appropriate text-level measure to consider. Incorporating text-level language measures in the analysis of personal narrative samples can lead to more informed conclusions, helping to shape targeted goals and intervention plans for addressing the language needs in an adolescent's social and emotional life.

Personal Narratives and Mental Health

A key focus of this review was to examine discourse sampling practices in relation to adolescents with mental health concerns. Two out of the three studies identified looked at personal narratives in relation to psychological functioning. These two studies drew personal narrative samples from therapy sessions (Mossige et al., 2005) or responses to the Child Attachment Interview (Lind et al., 2019). As such, it is unclear to what extent personal narratives were supported or scaffolded by the examiner / clinician and precisely what prompting was provided in eliciting the personal narratives. Similar to other studies that focused on psychological functioning, Lind et al. examined narrative coherence (Baerger & McAdams, 1999) in relation to features of borderline personality disorder. Whereas Mossige et al. adopted a more structural approach, analysing narrative structure, the level of elaboration, contextual embeddedness (orientating the listener), and causal coherence to explore how young people make meaning of events such as sexual abuse and to characterise how children and adolescents tell their personal narratives of these events. Noel (2011; see also Noel & Westby, 2014) provided a clear protocol for eliciting the personal narratives in her study of language performance and gathered results for narrative elements of story grammar, landscape of consciousness (internal state language and connective words), and social problem-solving skills to explore social problem-solving abilities of adolescents in detention centres and their response to targeted treatment.

All three studies have chosen or designed elicitation tasks and narrative language measures tailored to their specific research questions. However, the tasks and measures used, simply represent a sub-set of the overall findings of this review, as they were used in several studies investigating the personal narratives of adolescents without mental health concerns, with one exception. The measure of social problem-solving skills used by Noel (2011) was drawn directly from the intervention that was administered to the group of adolescents and reflects key expected outcomes of the therapy program.

Clinical Implications

Taken together, the results of this systematic literature review illustrate the usefulness of sampling and analysing personal narratives in adolescents, both with and without mental health concerns. Although only three of the 27 papers investigated the personal narratives of adolescents with mental health concerns, the high proportion of studies utilising the analysis of adolescent personal narratives to investigate psychological functioning suggests its suitability with this clinical population. For example, two of the most frequently used language measures examined internal state language (10 studies) and narrative coherence (nine studies), identifying two areas of intersect between psychological functioning and language ability. Both aspects of language are readily observed within a personal narrative in response to emotion-based prompts (e.g., high point, low point), therefore lending support to including the sampling and analysis of personal narratives in adolescent communication assessment.

The number and range of elicitation tasks and language measures identified in this review may mirror the various ways in which different assessment purposes can impact clinical decisions. These decisions include how the personal narratives are elicited, the wording of prompts, the number of personal narratives gathered, and the types of measures used to analyse the sample. The study by Dianiska et al. (2024) demonstrates that even the rapport building prior to eliciting the personal narratives can impact the results. The various standardised protocols used to elicit the personal narratives adopted in these studies, provide potential templates to support a structured approach for clinical use in an assessment context. Also, the range of word-, sentence-, and text-level language measures available to clinicians offers valuable clinical insight, complementing the results of standardised, norm-referenced assessments to reflect language in use. Measures could be selected to either confirm test results or supplement the findings. Considering that many norm-referenced tests tend to focus on aspects of word- and sentence-level language, sampling and analysing personal narratives allows SLPs a more appropriate way to investigate functional language at the text level.

Future Research

A variety of terms was used across these studies in relation to the labels used for the language measures and the names of systems used to categorise the measures, often reflecting contrasting theoretical constructs. For example, while coherence was examined in 10 studies, four different research groups were cited, (i.e., Baerger & McAdams, 1999; Glosser & Deser, 1997; Habermas & de Silveira, 2008; Reese et al., 2011), who all used different terms and methods of scoring. These differences are not considered 'bad' practice, merely a reflection of the complexities of this area. However, these differences may impede the clinician's ability to determine the best approach for their clinical needs. Denman et al. (2019) have demonstrated the benefits of a taxonomy of assessment terms for clinicians. Clinical guidelines that incorporate

a taxonomy of language measures that labels, defines, and describes the measures would help in addressing this issue. Guidelines could also provide direction around choosing elicitation tasks and language measures that would be most appropriate in addressing clinical needs and answering referral questions, given the wide range that is available.

The results from this review highlighted a diversity of studies examining psychological functioning and language, providing supporting evidence of the links between personal narratives and social and emotional development in adolescence. However, further research towards clarifying how these links could operate in supporting positive mental health outcomes is needed. Specifically, research examining the personal narratives of adolescents with mental health concerns compared to peers without identified mental health concerns could contribute to a better understanding of the role of language in mental health and vice versa.

Limitations

Although studies conducted in other languages could have been eligible for inclusion, the review was restricted to studies published in English. As such, additional studies that may have met criteria but were published in a language other than English, were missed, limiting the breadth of potential input to this review. Also, because of the significant numbers captured in phase one of this review, the review team made the decision not to expand the search by checking reference lists. Subsequently, it was decided that the post-hoc analysis should apply the same processes, and so no further searching was undertaken. Several studies in this review did not provide enough information to accurately judge the methodology of the elicitation of personal narratives. Aspects such as how much scaffolding was provided by additional questioning, and whether the data analysed was drawn only from the narratives, or if it included responses given in an interview format, were often unclear. This may have meant that some articles were incorrectly rejected as not meeting criteria, while other articles were included that should have been excluded. While many articles were read through several times to confirm eligibility, authors were not followed up to clarify these queries.

Conclusion

This systematic review of the literature provides supportive evidence for the use of sampling and analysis of personal narratives in the communication assessment of adolescents. The variety of tasks and language measures highlights the richness of clinical information that potentially can be drawn from personal narrative discourse analysis at word-, sentence-, and text-level of spoken language. However, the plethora of terms used in the literature could be confusing for the clinician, and work towards developing clinical guidelines and a taxonomy of the various terms is recommended.

Although there have been few studies specifically involving adolescents with mental health concerns, there is secondary evidence to indicate that the personal narrative genre is an appropriate discourse for use with this clinical population. The review has highlighted around 50 language measures available to clinicians and researchers to describe language performance, with distinct differences noted between the approach taken in investigating psychological functioning compared to language performance and ability. Increased collaboration between fields like speech-language pathology and psychology would enhance clinicians' and researchers' understanding of how personal narrative language can be analysed to better explore its connection to social and emotional functioning. This could lead to a greater understanding of the bi-directional relationship between mental health and language ability, which in turn could result in more germane interventions for adolescents with mental health concerns and/or communication difficulties. Further work is required to develop clinical guidelines in speech-language pathology and to grow a more collaborative approach amongst the different fields of research. The results of this review represent an important first step.

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Data, Code and Materials Availability Statement

All data related to the articles reviewed including summary points for inclusion and exclusion criteria and quality evaluation is available through OSF at https://osf.io/xwhns/overview?view_only=b12803bc140d4062ade5dc7f96df8159.

Authorship and Contributorship Statement

Adele Wallis conceptualised the study, designed the study, and wrote the first draft of the manuscript. **Adele Wallis, Vani Gupta**, and **Marleen Westerveld** contributed to reviewing the articles. **Adele Wallis, Marleen Westerveld, Vani Gupta** and **Matthew McKenzie** contributed to analysing the data, revising the drafts, and approved the final version of the manuscript.

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