



A systematic review of racial/ethnic microaggressions assessment in formal educational settings

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Abstract

Racial/ethnic microaggressions in educational settings are subtle daily manifestations of interpersonal racism that may communicate harmful messages and disrespectful behaviors toward students belonging to marginalized groups. Given the pivotal role of schools and universities in students' emotional, cognitive, and relational growth, it is critical to thoroughly understand the nuanced ways in which racial/ethnic microaggressions may manifest in education through accurate target- and context-specific measurement. In recent years, despite the growing amount of research in this area, there has been no systematic research specifically directed at comparing and analyzing the measurement tools used to assess students' unique perspectives and experiences in formal educational settings. A systematic literature search on PsychINFO, Web of Science, Scopus, and PubMed was conducted in March 2024 following PRISMA guidelines. The search identified 8,406 papers and a final set of 83 papers has been selected. The specificities of the tools for the context, the theoretical dimensions evaluated, the characteristics of the samples, and the psychometric properties of the measurement tools were examined. The results revealed 28 different tools used in the educational settings to assess racial/ethnic microaggressions. However, only five (17.86%) of them are specifically designed to address racial/ethnic microaggressions that happen within secondary or higher education. Additionally, findings underline that although current measures reference Sue's (2007) original taxonomy, many instruments only partially align with this framework and often incorporate additional themes reflecting group-specific stereotypes and contextual experiences. Even in the case of the most commonly used measurement tools, a proper evaluation of the psychometric properties has been found to be scarce. Considering the specificity of the educational settings, there is a clear need for developing contextually and developmentally appropriate instruments, with good psychometric properties that can effectively evaluate students' experiences of racial/ethnic microaggressions. This will support an advancement of the current knowledge of underlying processes and impact of this phenomenon.

Extended author information available on the last page of the article

Keywords Racial and ethnic microaggressions · Measurement tools · Racial and ethnic minorities · Educational settings

Institutional educational settings have long been spaces where cultural enrichment and diversity coexist with systemic inequalities (Van Ewijk & Sleegers, 2010). While schools and universities are expected to foster students' personal growth and social mobility (Agirdag et al., 2011; Juvonen et al., 2019; Schachner et al., 2015; Thijs & Verkuyten, 2014; Titzmann et al., 2015), they also face challenges in promoting equity and fairness for ethnic and racial underrepresented students (Berry, 2023). In fact, educational institutions often reflect and reinforce the broader societal power structures that shape students' experiences based on race and ethnicity.

The perpetuation of inequity through everyday practices has been described as systemic or everyday racism, emphasizing that discrimination is not merely the result of individual prejudice, but rather emerges from a network of structural and institutional practices that systematically exclude, marginalize, and disadvantage racial and ethnic minoritized students (Essed, 1991). Indeed, ethnic and racial underrepresented students frequently face significant barriers that impact their well-being, adaptation, and academic success (Hughes et al., 2016). Research indicates that these students often encounter discriminatory educational environments, where they must navigate prejudice, stereotypes, and bias-based forms of bullying (e.g., ethnic bullying; Palladino et al., 2020). However, challenges derived from systemic racism are not confined to overt acts of discrimination. Rather, they are often embedded in subtle, daily interactions and behaviors, such as racial and ethnic microaggressions, small, yet cumulative, slights that sustain exclusion and marginalization (Ogunyemi et al., 2020).

Within this framework, research on racial/ethnic microaggressions has originally aimed to explore how individuals from racialized backgrounds experienced covert racism within predominantly White institutions, which are typically shaped by the broader forces of White supremacy, colonialism, and the lasting legacy of racism (Clark & Spanierman, 2018; Gao, 2025). However, though the concept of racial/ethnic microaggressions emerged within the United States (U.S.) context particularly through the lens of African American people's experiences in a racially stratified society (Alhassan et al., 2024), it is important to recognize that these behaviors are not confined solely to the U.S. context. Microaggressions are a global phenomenon, as racial and ethnic inequalities are present in many countries around the world. Whether in Europe, Asia, or Africa, multicultural societies often encounter similar forms of subtle racial discrimination, where power imbalances rooted in colonialism, immigration, and ethnic diversity continue to shape the social dynamics of everyday interactions (DeCuir-Gunby et al., 2024).

Empirical evidence from international contexts further underscores how these dynamics operate outside the U.S. landscape. For instance, recent research in European educational settings highlights that minoritized students frequently encounter subtle structural barriers and exclusionary linguistic policing that mirror transatlantic microaggressions, yet are uniquely colored by local historical configurations of immigration and integration policies (Civitillo et al., 2024).

However, the concept of microaggressions has been predominantly developed and applied within the U.S. context, and its use in other countries remains limited (Osho & Alorme, 2024). Given its strong connection to specific socio-historical conditions, the application of this construct outside the U.S. requires careful contextualization; otherwise, it would not always capture the unique forms of racialized experiences in different cultural settings.

The term *microaggression* was first introduced by scholar Pierce (1970) to denote offensive mechanisms characterized by their insidious and subtle nature, targeting African American people. Building upon Pierce's terminology, Sue et al. (2007) further refined and popularized the concept of microaggressions, presenting a widely embraced taxonomy in contemporary academic literature and research. Currently, scholars define racial/ethnic microaggressions as insidious daily expressions of discrimination directed toward people from ethnic and racial minoritized groups, aimed at denigrating or undermining their inherent value and dignity (Solórzano et al., 2000; Williams et al., 2020). These subtle acts encompass a spectrum of manifestations, including comments, behaviors, or environmental cues that convey derogatory messages, perpetuating biases against individuals based on their race or ethnicity (Sue, 2010).

Although the terms "racial/ethnic microaggressions" and subtle/perceived discrimination have frequently been used interchangeably in the literature, distinguishing between them is essential to ensure conceptual precision, as they refer to related but fundamentally distinct constructs. To ensure conceptual clarity, this review distinguishes between three often-conflated constructs. Perceived discrimination is defined as an individual's self-reported experience of being treated unfairly, representing a broad psychological appraisal of mistreatment (Williams et al., 1997). Within this, subtle discrimination refers to a broader umbrella of indirect, covert, and low-visibility discriminatory treatment that is often easier to deny than blatant prejudice (Pettigrew & Meertens, 1995). Finally, racial/ethnic microaggressions represent a specific, event-level subtype of subtle discrimination. They are characterized as brief, commonplace, and often ambiguous indignities that communicate hostile or derogatory messages toward minoritized groups (Sue et al., 2007). Whereas these constructs overlap, they are not interchangeable: for instance, a student may perceive discrimination without experiencing a specific microaggression, or conversely, experience a microaggression without immediately labeling it as "discrimination."

The complexity of such subtle phenomenon arises from its multifaceted nature. Indeed, according to Sue and colleagues' (2007) taxonomy, microaggressions may manifest in three different forms. *Microinsults* occur when subtle, possibly unintentional, yet demeaning remarks are made. *Microinvalidation* refers to actions that negate or dismiss the experiences of individuals from marginalized groups, whereas *microassaults* involve more overt acts expressing explicit hostility or aggression. Moreover, microaggressions may extend beyond everyday interpersonal interactions to encompass cultural, social, and historical factors that are manifested at the systemic and environmental levels (e.g., *environmental microaggressions*) (Spanierman et al., 2021). More specifically, each form of microaggression conveys distinct, group-specific themes and hidden messages. Researchers have progressively categorized these themes through empirical studies investigating the experiences of

diverse underrepresented groups. In a systematic synthesis of this literature, Williams et al. (2021) identified 16 distinct categories of microaggressions targeting individuals across various nationalities and ethnic backgrounds. Key categories include: Not a true citizen; Racial categorization and sameness; Assumption about intelligence, competence, or status; False color blindness/ invalidating racial or ethnic identity; Criminality or dangerousness; Denial of individual racism; Myth of meritocracy/race is irrelevant for success; Reverse-racism hostility; Pathologizing minority culture or appearance; Second-class citizen/ignored and invisible; Tokenism; Connecting via stereotypes; Exoticization and eroticization; Avoidance and distancing; Environmental exclusion; and Environmental attacks.

Stemming from Sue's (2007) work, the term racial/ethnic microaggressions has gained prominence, becoming part of mainstream discourse, media, and scholarly literature. Studies on this topic have increased rapidly. After searching major databases, Osman et al. (2024) reported a 770% growth rate in related publication during the 2010s, with a projected 150% growth rate expected in the 2020s. Indeed, there have been over 1120 publications mentioning the term "microaggressions" since 2007, with 332 appearing between 2019 and 2020 (Costa et al., 2022).

Whereas the framework on microaggressions proposed by Sue et al. (2007) has been widely influential in understanding subtle forms of discrimination, it has also faced substantial criticisms. Among others, Lilienfeld (2017) argues that the term microaggression is overly broad, encompassing a wide spectrum of behaviors ranging from unintentional slights to overt discrimination and making it difficult to distinguish between genuine prejudice and ambiguous social interactions, raising concerns about misclassification and interpretative bias. Additionally, scholars have noted that microaggressions are often defined primarily through subjective perception, leading to inconsistencies in measurement and interpretation (Harrison & Tanner, 2018). Much of the research relies on self-report surveys, which, valuable for capturing lived experiences, may also be prone to biases, such as recall errors and individual differences in sensitivity to discrimination (Lilienfeld, 2017). Furthermore, some critics argue that microaggression research lacks robust empirical validation, as there is limited experimental or longitudinal evidence demonstrating its causal impact on psychological well-being (Scott et al., 2020). Beyond methodological concerns, scholars have debated the broader implications of the term "microaggression." Some argue that framing these incidents exclusively as "aggressions" reinforces a one-sided perspective that may discourage constructive dialogue and cross-cultural understanding (Lukianoff & Haidt, 2018). Rather than fostering mutual engagement, the emphasis on aggression may contribute to heightened polarization, making it more challenging to address unconscious bias in a way that promotes meaningful change.

In response to scholarly debates that occasionally dismiss microaggressions as merely subjective or conceptually elusive, it is imperative to ground the construct in established empirical and theoretical frameworks. As demonstrated by Monnica T. Williams's scholarship, racial microaggressions are not only operationalizable through validated measures but also possess significant clinical relevance, showing consistent associations with measurable outcomes such as anxiety, depression, and race-based traumatic stress (Saxberg et al., 2026; Williams et al., 2018, 2020, 2023). This empirical rigor is further bolstered by a solid theoretical foundation in Criti-

cal Race Theory (CRT). Following the work of Solórzano (1998), microaggressions must be understood not as isolated interpersonal slights, but as everyday manifestations of institutionalized racism and power imbalances (Kohli & Solórzano, 2012). In formal educational settings, these subtle forms of racism accumulate over time, fundamentally shaping students' sense of belonging and psychological well-being (Pérez Huber & Solorzano, 2015). By synthesizing these perspectives, it becomes clear that the microaggression construct is both theoretically grounded and empirically tractable, serving as a necessary tool for analyzing the persistent impact of systemic racism in schools.

In these diverse settings, predominantly white institutions (PWIs) function as "racialized organizations" (Ray, 2019) where microaggressions are not merely isolated interpersonal errors, but everyday enactments of a "White Institutional Presence" (Gusa, 2010). This structural framing suggests that education settings are not neutral spaces; rather, they are environments where formally neutral rules and routines, such as meritocratic standards or secular norms, can still distribute legitimacy and opportunity in racially unequal ways (Doharty, 2020; Ray, 2019). Consequently, microaggressions operate as a primary mechanism through which these institutions maintain racial hierarchies among minoritized students and faculty across different national landscapes (Rollock, 2021).

Although many issues are still waiting for an answer from the advancement of research, the increased attention to racial/ethnic microaggressions has led to a proliferation of empirical research, special journal issues, books as well as systematic reviews across academic disciplines including psychology, education, medicine, and sociology to cite a few (Choi et al., 2022; Spanierman et al., 2021; Williams et al., 2021; Wong et al., 2014). This scholarly work has expanded knowledge by investigating various factors, processes, and causes associated with ethnic microaggressions, as well as examining their impact on individuals' psychological well-being and sociocultural adaptation (Costa et al., 2022; Osman et al., 2024).

A substantial number of studies have demonstrated a significant relationship between experiences of racial/ethnic microaggressions among students and depressive symptoms (Lambert et al., 2009), psychological distress (Sanchez et al., 2018) as well as symptoms of racial battle fatigue (Smith et al., 2016), stress, anxiety, and many other physiological effects, such as somatic symptoms (Torres-Harding et al., 2020), nausea, backache (Ong et al., 2013) or sleep disturbance (Ong et al., 2017). At the same time, other researchers have underlined the adverse impact of racial microaggressions on self-esteem (Costa et al., 2022; Nadal et al., 2014), life satisfaction (Andreou et al., 2021), body image (Matsuzaka et al., 2022), and academic performance (Keels et al., 2017; McCabe, 2009; Solórzano et al., 2019; Steketee et al., 2021; Sue et al., 2009; Torres et al., 2010), while also investigating the moderating and mediating role of diverse resources at both the individual (e.g., resilience, identity, coping mechanisms) (Choi et al., 2017; Loyd et al., 2022) and collective levels (e.g., collectivistic beliefs, Farber et al., 2021).

Moreover, researchers indicate that messages and prevalence of racial/ethnic microaggressions can vary significantly across diverse contexts, differentiating between those occurring in community daily life and those in institutional environments such as schools and universities (Benner et al., 2022; Osho & Alormele, 2024).

With reference to the latter, given that schools and universities are not only spaces for academic learning but also primary sites of identity development and socialization, they are critical environments for understanding racial and ethnic microaggressions. Within these settings, ethnic and racial minoritized students navigate institutional norms and daily interactions that may implicitly reinforce racial hierarchies, making educational institutions particularly relevant contexts for studying how systemic racism manifests in daily interactions (Benner et al., 2022). Additionally, school experiences shape long-term psychological well-being, self-concept, and academic achievement, highlighting the urgency of addressing racial and ethnic microaggressions in these settings (Steketee et al., 2021).

Despite the critical relevance of educational settings, the scholarly landscape regarding racial and ethnic microaggressions has evolved into a field that is rapidly growing yet developmentally and methodologically uneven. Recent scholarship confirms that microaggressions are a pervasive K-12 phenomenon, no longer confined to the higher education contexts where much of the foundational work originated (Fu et al., 2024; Steketee et al., 2021).

Specifically, a robust evidence base has emerged concerning early adolescence, identified as a key developmental window where intensified racial-ethnic identity exploration heightens vulnerability to these slights (Fu et al., 2024). Meta-analytic evidence from 68 studies underscores that teacher-based discrimination in these years directly correlates with diminished academic performance and psychological well-being (Civitillo et al., 2024). However, research involving younger children and pre-K students remains comparatively sparse and disproportionately reliant on qualitative case studies rather than large-scale, developmentally stratified quantitative measures (Essien & Wood, 2021).

Furthermore, an emerging body of “raciolinguistic” and institutional research suggests that microaggressions in schools are often nested within broader structures, such as language policing, exclusionary discipline, and biased curricula, which communicate systemic belonging or exclusion (Cushing & Snell, 2023). Consequently, while the field has moved beyond a limited state, there remains a critical need for systematic research that captures how these experiences evolve across the full developmental spectrum and how unique institutional ecologies shape students’ experiences.

In the wake of the work of Sue et al. (2009) scholars have started developing tools to investigate the construct of racial/ethnic microaggression, e.g., creating self-report measures able to reflect its multidimensional nature. These efforts have significantly advanced the research on ethnic discrimination, resulting in a rapid growth in scholarly publications and a rising array of tools designed to assess the occurrence and extent of racial/ethnic microaggressions among different ethnic communities (such as the Racial and Ethnic Microaggression Scale developed by Nadal, 2011, or the Racial Microaggressions Scale developed by Torres-Harding et al., 2012), as well as specific marginalized groups (e.g., transgender individuals, people with diverse sexual orientations, disabilities related measures etc.; Williams, 2021).

However, despite the growing interest in microaggressions, there has not been a comprehensive synthesis of these assessment tools to evaluate the contexts and target population for which these instruments have been developed, the theoretical foundations on which these tools are grounded, as well as their psychometric properties,

such as their reliability and validity. In addition to these, considering the specificities of the educational context and given that students from historically marginalized racial/ethnic groups may potentially be at risk of experiencing a spectrum of hindrances, a systematic review focusing specifically on exploring existing measures of racial/ethnic microaggressions in students within formal educational environments, would be vital for the advances of research in this area. Indeed, it would be useful to researchers and practitioners in better comprehending the impact of racial/ethnic microaggression on this specific population, highlighting process and dynamics peculiar to this context.

Therefore, to address this research gap, we conducted a comprehensive analysis of current assessment tools for racial/ethnic microaggression currently used in scientific literature. Our systematic review aimed to achieve three primary objectives: firstly, identifying studies' characteristics (sample, country, educational context); secondly, examining the theoretical dimensions that underpin these measurement tools; and finally, assessing their psychometric properties. To ensure a focused examination of racial and ethnic microaggressions within educational contexts, our review specifically included studies in which the racial/ethnic microaggressions occurred within formal learning environments, such as schools and universities. Studies in which students reported microaggressions in general social settings (e.g., workplaces, public spaces) were excluded to maintain relevance to the educational context. This decision aligns with prior research highlighting educational settings as pivotal sites where students from marginalized racial/ethnic backgrounds encounter subtle discriminatory experiences that influence their well-being, identity development, and academic outcomes (Keels et al., 2017; McGee & Stovall, 2015). Given the increasing recognition of educational institutions as both sites of social mobility and systemic exclusion, this review aims to synthesize and evaluate the tools developed to measure racial and ethnic microaggressions within these critical settings.

1 Method

The present systematic review was conducted following the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines (Moher et al., 2010). The stages are illustrated in the flow diagram (Fig. 1).

As illustrated in the PRISMA flow chart (Fig. 1), the selection process followed a systematic multi-step approach. Four different electronic databases were searched without any time restriction: PsycINFO, Web of Science, Scopus, and PubMed. The search was completed in March 2024 combining terms in titles, abstracts, or keywords. Three clusters of keywords were employed: the first cluster pertained to the characteristics of the individuals who are targets of this specific type of racial/ethnic microaggressions (keywords: ethnic*, racial*); the second cluster related specifically to the construct of microaggressions (keywords: microaggressi* OR micro-aggression* OR "micro aggression*"); and the third cluster focused on the formal educational setting (keywords: school, universit*, academi*, stud*, class*, college*). In the first stage we identified 3523 records in PsychINFO, 1,767 in Web of Science, 2,334 in Scopus, 782 in PubMed.

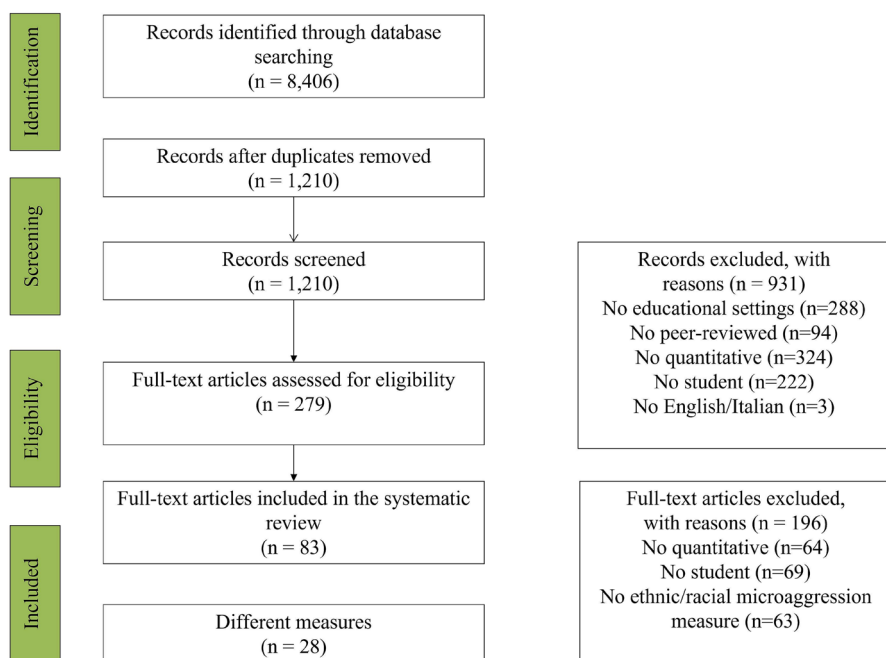


Fig. 1 PRISMA Flow Chart

The following inclusion criteria were established: (a) peer reviewed research article; (b) quantitative research (e.g., qualitative analyses, systematic research, meta-analysis were excluded); (c) studies assessing racial/ethnic microaggressions; (d) research exploring the experiences and perspectives of students, namely studies including children, adolescents, and young adults enrolled in formal educational institutions; (e) studies written in English or Italian, the mother tongue of the researchers.

All records were exported to Zotero reference library (Fernandez, 2011), resulting in 8,406 initial records. After the automatic removal of duplicates, 1210 unique documents remained. The screening based on title, abstract, and keywords was conducted independently by two authors. Inter-raters' agreement on the acceptance/rejection criterion at this stage was computed on a subsample of 242 papers (20% of records) and was 97% ($k = .91$), indicating very high agreement.

In the final stage, a subsample of 17 full-text records (20% records included at this stage) was screened independently by the two researchers. The inter-raters' agreement on the acceptance/rejection criterion at this stage was 88% ($k = .88$), also indicating a very high agreement between reviewers. All discrepancies between reviewers were resolved through detailed discussion until 100% consensus was reached, ensuring a robust selection process.

Initially, the searches yielded 8,406 documents, which were reduced to 1210 following the automatic removal of duplicates using Zotero software. Consequently, 280 of 1210 manually analyzed abstracts fulfilled the inclusion/exclusion criteria, which led to a complete reading of these documents. A total of 931 records were excluded during abstract screening for different reasons: different context than for-

mal educational settings ($n=288$); no peer reviewed articles ($n=94$); no quantitative studies ($n=324$); no student population ($n=222$); and not written in English or Italian ($n=3$).

After a thorough reading of the 280 full texts, 196 were excluded for the following reasons: no quantitative measure of racial microaggression ($n=63$); non-quantitative design ($n=64$); no students population ($n=69$). Finally, eighty-three documents were included in the present systematic review (see Fig. 1).

To evaluate the quality of the included studies, two researchers independently conducted assessments following recommendations from the NHS Centre for Reviews and Dissemination (2008) and utilized a validated checklist designed for quantitative studies by Kmet et al. (2004). The original 14-item checklist was adapted for this review: three criteria related to interventions were deemed irrelevant to our study and excluded from the checklist (i.e., random allocation, blinding of investigators, and blinding of subjects). The remaining items for quality assessment encompassed study questions, study design, method of subject selection, subject characteristics, outcome and exposure measures, sample size, description of analyses, estimate of variance for the main results, study of confounding, descriptions of results, and conclusions. Detailed results can be found in the Supplementary Materials. All 83 papers were evaluated as more than adequate in quality, leading to the inclusion of all documents for the synthesis (see Supplementary Materials).

1.1 Data coding

Various research variables were systematically examined to address the three research aims. To achieve the first objective (i.e., studies characteristics), we coded information on the countries where the research was conducted and samples characteristics encompassing gender, age (mean age and standard deviation), race/ethnicity, generational status (e.g., first- or second-generation of immigrants), and the educational context in which participants were enrolled at the time of the study (e.g., middle school, high school, college).

Concerning the second objective, which involved analyzing the theoretical dimensions underpinning each instrument, we coded the content of each dimension along with its specific definition. To clarify the psychometric structure of the reviewed instruments, we categorized them as either unidimensional or multidimensional. More specifically, unidimensional tools are designed to measure racial/ethnic microaggressions as a single, cohesive construct, yielding a total composite score. Multidimensional tools, conversely, treat microaggressions as a multifaceted phenomenon, utilizing subscales to distinguish between different types of slights (e.g., the taxonomy of Sue et al., 2007). This distinction is typically supported by factor-analytic evidence, where multi-dimensional scales demonstrate a better fit when partitioned into specific latent factors.

Regarding the third aim of the systematic review, which focused on analyzing the psychometric properties of the measures, the following variables were taken into account: number of the items, reliability, and validity of the instruments.

2 Results

Among the 83 papers included in the Systematic Review, we found 28 instruments focused on racial and ethnic microaggressions involving students within formal educational contexts. Table 1 provides information on studies' characteristics, in terms of context of the study, sample characteristics such as age, ethnicity, and generational status, whereas Table 2 illustrates relevant information detecting the theoretical dimensions and psychometric properties of the instruments included in the review.

Overall, the reviewed research on racial and ethnic microaggressions was primarily conducted in the U.S., with a smaller body of work originating from different countries. The participant samples were ethnically diverse, with a predominant focus on college students and a lesser emphasis on high school and middle school students. The measurement instruments varied in their dimensionality, with 46.4% being unidimensional and 53.6% being multidimensional. Whereas most studies reported high reliability of these instruments, some encountered difficulties in confirming the original factor structures when applied to younger populations. At the same time, others failed to report the validity of the measures. Only a limited number of instruments were specifically designed for educational contexts, with the aim of capturing the diverse range of racial/ethnic microaggressions experienced by students from various ethnic backgrounds.

2.1 Characteristics of the studies

The research was predominantly conducted in North America, with only two studies carried out in Europe and one study taking place in Palestine. To be more specific, the majority of the studies ($n=79$; 95.18%) were conducted in the U.S. The remaining studies were conducted in Canada ($n=1$; 1.20%), the UK ($n=1$; 1.20%), Belgium ($n=1$; 1.20%), and Palestine ($n=1$; 1.20%).

The race or ethnicity of the participants were reported in all the studies. In the U.S., the instruments were administered to an ethnically diverse population. Across the included studies, participant demographics varied, but racial and ethnic representation followed a general trend. The majority of participants were Asian/Asian American (31.6%), followed by Black or African American (22.9%), Latinx (19.9%), White (13.7%) and individuals identified as multiracial, Native, or Middle Eastern (12%). Participants in the Canadian study were also from varying ethnic and cultural backgrounds. They were: White; Black; Hispanic; Indigenous; East/Southeast Asian; South Asian; Middle Eastern, or generally multiracial (Feng et al., 2023). In Europe, the UK work (Williams et al., 2016) described the ethnicity of the participants categorizing them in two different groups, namely white and people of color. The latter comprised Black, East/South/Asian, or multiracial students. On the other hand, the Belgium study used a sample of pupils with an other-than-Belgian descent asking for the birthplace of the adolescent's maternal grandmother to assess ethnicity (D'hondt et al., 2023). The Palestine study administered the instrument to a sample of Palestinian adolescents (Berger et al., 2020).

Of the 83 studies, 31 reported the generational status of the sample involved in the study (37.34%). Of these, the studies conducted in the U.S. were aimed at both first generations and second generations or higher.

Most studies applied the instruments both to men and women, except for those explicitly examining gendered racial microaggressions in female students, such as the research conducted by Bonifacio et al. (2018), Manns-James et al. (2021), and Erving et al. (2022). These studies are infused with an intersectional perspective, aiming to discern the unique experiences of young women subjected to discrimination based on their multiple intersecting group memberships, encompassing ethnic and gender identities.

The majority of the studies involved college students, whether graduate or undergraduate ($n=72$; 86.75%). Additionally, six studies specifically targeted high school students, whereas another one of them focused on adolescents attending middle school. Furthermore, one instrument was administered across three distinct student groups: college, high school, and middle school students (Collins & Stevenson, 2023). Three studies worked with students enrolled in master's or PhD programs, namely in the post-secondary and tertiary education (Bonifacio et al., 2018; Proctor et al., 2018; Vaishnav & Wester, 2023).

2.2 Underlying theoretical dimensions

Regarding the dimensionality of the instruments, 46.4% of the tools reported a uni-dimensional definition of racial/ethnic microaggressions ($n=13$). The remaining 53.6% ($n=15$) took a multidimensional view, identifying up to six dimensions of microaggressions directed toward people with ethnic and racial backgrounds. Among those that adopted a multidimensional framework, some referred explicitly to Sue's taxonomy-incorporating categories such as microassaults, microinsults, and micro-invalidations-whereas others developed their dimensions empirically through factor analytic procedures (e.g., CFA or EFA), resulting in diverse labeling and interpretations across measures.

Overall, the Racial and Ethnic Microaggression Scale (REMS, Nadal, 2011) and the Racial Microaggressions Scale (RMAS, Torres-Harding et al., 2012) were the most commonly used assessment tools in research, across different educational contexts and with varied cultural groups, being respectively cited in 21 studies and 15 studies. Moreover, the RMAS and the REMS subsequently served as the foundation for developing other measurement tools also discussed in review.

A key distinction among the instruments lies in their methodological approach: whereas some unidimensional measures directly inquired about personal experiences (Blume et al., 2012; De Coster & Thomson, 2017; Franklin, 2019; Franklin et al., 2014), others focused on observed occurrences (Marconi et al., 2022). Indeed, unidimensional measurements mainly referred to both overt (e.g. perceived discrimination) and subtle forms of discrimination (e.g., ethnic/racial microaggression) asking for the occurrence of verbal, behavioral, or environmental experiences that have directly or indirectly devalued racial/ethnic heritage, identity, or culture (Dickerson et al., 2019). Across the reviewed studies, in several cases, the two constructs of perceived discrimination and subtle or covert forms of discrimination were assessed

Table 1 Studies' Characteristics

Scale	Reference	Developed by	Sample (Women; %)	Ethnic Groups (ethnicity)	Generational Status	Type of Students	Mean Age (SD)	Country
Racial and Ethnic Microaggression scale (REMS)	Anglin and Lui (2023)	Nadal (2011)	955 (W = 602, 63%)	White (N = 87); Black (N = 214); Asian (N = 320); Latino/a (N = 334)	1st generation (N = 360; 37.7%) 2nd generation (N = 488; 51.1%) non-immigrant (N = 107; 11.2%)	College students	M = 19.96 (SD = 2.49)	USA
-	Bonifacio et al. (2018)	Nadal (2011)	202 (W = 100%)	Mexican (37.6%), South American (16.3%), mixed (i.e., parents from two different groups; 13.9%), Puerto Rican (10.9%), Dominican (8.4%), Central American (4.5%), Cuban (2.5%), other (5.4%), and missing (0.5%)	1st generation Latinas (32.7%); 2nd generation Latinas (52%); 3rd generation Latinas (14.9%)	College students (26.2%); Master's program students' (37.6%); Doctoral students (21.8%); other (14.4%)	M = 29.5 (SD = 8.92)	USA
-	Buckner et al. (2024)	Nadal (2011)	300 (W = 66.5%)	Black/African American; White (25.6%); Hispanic/Latin (9.3%); Asian/Asian American (4.4%); Middle Eastern/Arab American (1.9%); Native Hawaiian/Pacific Islander (2.2%); Asian Indian (1.1%); American Indian/Native Alaskan (1.1%)	-	College students	M = 19.5 (SD = 2.1)	USA
-	Davenport et al. (2021)	Nadal (2011)	140 (W = 69.3%)	African American (N = 87; 62.1%); Hispanic/Latinx (N = 53; 37.9%)	-	College students	M = 20.7 (SD = 1.22)	USA
-	Farber et al. (2021)	Nadal (2011)	549 (W = 380, 70.2%)	Black/African American (N = 179; 32.6%); Hispanic, Latino, of Spanish origin (N = 200; 36.4%);	-	College students	M = 20.64 (SD = 4.14)	USA

Table 1 (continued)

Scale	Reference	Developed by	Sample (Women; %)	Ethnic Groups (ethnicity)	Generational Status	Type of Students	Mean Age (SD)	Country
-	Forrest-Bank and Jenson (2015)	Nadal (2011)	409 (W = 271, 64.2%)	White (N = 123; 30%); Asian (N = 101; 25%); Latino/Hispanic (N = 103; 25%); Black (N = 82; 20%)	2nd generation or higher (N = 338; 82.6%) Born in the U.S.: - Mother (N = 251; 61.4%); - Father (N = 250; 61.1%)	Undergraduate college students	M = 24 (SD = 4.2) (ranging from 18 to 35 years old)	USA
-	Francois et al. (2023)	Nadal (2011)	295 (W = 77%)	Black or African Americans (N = 217; 74%); Asian/Asian American, Native American/Indigenous, White (N = 78; 26%)	-	College students	> 18	USA
-	Lui et al. (2022)	Nadal (2011)	895 (W = 60%)	Black (20.8%); Asian (31.6%); Latina/o (30.8%); White (8.2%); Middle Eastern (6.6%)	1st generation (N = 338; 37.8%); U.S. born (N = 557; 62.2%)	Undergraduate college students	M = 19.94 (SD = 2.48)	USA
-	Lui et al. (2022)	Nadal (2011)	915 (W = 60%)	Asian (N = 288; 31%); Latina/o (N = 282; 31%); Black (N = 190; 21%); other (Native Americans, Biracial, and Middle Eastern, N = 79; 9%); White (N = 75; 8%)	1st generation (N = 340; 37.2%) 2nd generation (N = 479; 52%) Non immigrant (N = 96; 11%)	College students	M = 19.94 (SD = 2.47)	USA
-	Kim (2017)	Nadal (2011)	144 (W = 104)	African Americans (N = 17), Asian Americans (N = 73), Hispanics (N = 24); biracial (N = 28); multiracial (N = 2)	2nd or 3rd generation (N = 118)	College students	M = 20.12 (SD = 2.95)	USA
	Manns-James et al. (2021)	Nadal (2011)	136 (W = 100%)	African American women	-	College students	M = 19.9	USA
	Middleton & Owens (2023)	Nadal (2011)	121 (W = 100%)	African American women	-	College students	Ranging from 28 to 32	USA

Table 1 (continued)

Scale	Reference	Developed by	Sample (Women; %)	Ethnic Groups (ethnicity)	Generational Status	Type of Students	Mean Age (SD)	Country
-	Nadal et al. (2014)	Nadal (2011)	225 (W = 71.6%)	Latinas/os (N = 87; 38.7%); Blacks/African Americans (N = 44; 19.6%); Whites/European Americans (N = 43; 19.1%); Multiracial persons (N = 19; 8.4%); Asian Americans/Pacific Islanders (N = 23; 10.2%); not identified with any category (N = 9; 4%)	1st generation (N = 62; 27.6%); 2nd generation (N = 163; 72.4%)	College students	M = 19.73 (SD = 3.24) from 17 to 40	USA
-	Palmer-Bacon et al. (2020)	Nadal (2011)	40 (White and Asian W = 100%; Black W = 60%; Hispanic W = 70%)	non-Hispanic White, Black/African American, Latinx, and Asian	-	Undergraduate college students	M = 18.4; (SD = .74)	USA
-	Proctor et al. (2018)	Nadal (2011)	228 (W = 192, 84%)	African American/Black (N = 50; 21.9%); Asian, (N = 40; 17.5%), Hispanic/Latino (N = 77; 33.8%); multiracial (N = 53; 23.2%); other (N = 8; 3.5%)	-	Specialist/ masters' degree programs, (n = 126; 55%); Phd doctoral programs (n = 71; 31%); Psyd doctoral programs (n = 21; 9%); Education doctoral programs (n = 10; 4%)	M = 27.55 (SD = 5.95)	USA

Table 1 (continued)

Scale	Reference	Developed by	Sample (Women; %)	Ethnic Groups (ethnicity)	Generational Status	Type of Students	Mean Age (SD)	Country
-	Ramsey et al. (2023)	Nadal (2011)	87 (W=83, 95.4%)	American-Indian, Alaskan Native, or Indigenous Peoples of Canada (N=1; 1.1%); Asian (N=15; 17.2%); Black, African American, or African (N=1; 1.1%); Hispanic, Latinx, or Spanish (N=7; 8.0%); Middle Eastern (N=2; 2.3%); White (N=52; 59.8%); Biracial (N=8; 9.2%); Prefer not to respond (N=1; 1.1%)		College students	M=29.4 (SD=5.78)	USA
-	Sanchez et al. (2018)	Nadal (2011)	308 (W=141, 46%)	Asian (N=164; 53.1%); Latinx (N=152; 46.9%)	1st generation (N=40; 12.9%); 2nd generation (N=193; 62.7%); 3rd generation (N=32; 10.1%); 4th generation or beyond (N=44; 14%)	College students	M=20.65 (SD=1.61 (from 18 to 26)	USA
-	Sarsar et al. (2023)	Nadal (2011)	139 (W=69.4%)	White (77%); Black/African American (7%); Hispanic/Latinx (3%)		College students	M=20 (SD=1.16)	USA
-	Su et al. (2020)	Nadal (2011)	383 (W=81%)	Black/African American	-	College students	M=20.65 (SD=2.28)	USA
-	Su et al. (2022)	Nadal (2011)	383 (W=81%)	Black/African American	-	College students	M=20.65, SD=2.28	USA
-	Williams et al. (2016)	Nadal (2011)	113 (W=98)	White (68.1%); Black (14.2%); Multiracial (10.6%); East/South Asian (7.1%)	-	Undergraduate college students	M=20.39 (SD=5.74)	UK

Table 1 (continued)

Scale	Reference	Developed by	Sample (Women; %)	Ethnic Groups (ethnicity)	Generational Status	Type of Students	Mean Age (SD)	Country
Racial Micro-aggressions Scale (RMAS)	Berger et al. (2020)	Torres-Harding et al. (2012)	777 (W=64.9%)	Palestinian Israelis	-	Students from 10 to 12 grades	M=15.93 (SD=1.06)	Palestina
-	Brezinski et al. (2018)	Torres-Harding et al. (2012)	53 (W=71.7%)	Black/African American (N=50; 94.3%); Multiracial (part Black/African American; (5.7%))	-	Undergraduate college students	M=22.01 (SD=6.96)	USA
-	Feng et al. (2023)	Torres-Harding et al. (2012)	1,280 (W=966; 75.5%; first generation W=72.51%; Canadian-born W=77.45%)	White (N=462; 36.1%); Black (N=192; 15.0%); Hispanic (N=32; 2.5%); Indigenous (N=13; 1.0%); East/Southeast Asian (N=214; 16.7%); South Asian (N=138; 10.8%); Middle Eastern (N=166; 13.0%); Other (N=9; 0.7%); Multiracial (N=46; 3.6%); missing (N=8; 0.6%)	1st generation immigrants (i.e., born outside of Canada) (N=502; 39.2%); Canadian-born (N=776; 60.6%)	College students	M=19.10 (SD=1.50)	Canada
	Hernandez and Villodas (2019)	Torres-Harding et al. (2012)	681 (W=488, 71.7%)	Mexican, Mexican-American or Chicana/o (N=313; 43.8%), Hispanic (N=87; 12%), and Latina/o or Latin American (N=73; 9.4%)	1st generation (N=62; 9.1%); 2nd generation (N=484; 71.1%); 3rd generation (N=51; 7.5%); 4th generation (N=50; 7.3%); 5th generation (N=31; 4.6%)	Undergraduate college students	M=20.1	USA

Table 1 (continued)

Scale	Reference	Developed by	Sample (Women; %)	Ethnic Groups (ethnicity)	Generational Status	Type of Students	Mean Age (SD)	Country
-	Hernandez and Villodas (2020)	Torres-Harding et al. (2012)	681 (W=488, 71.7%)	Mexican, Mexican-American or Chicana/o (N=313; 43.8%), Hispanic (N=87; 12%), and Latina/o or Latin American (N=73; 9.4%)	1st generation (N=62; 9.1%); 2nd generation (N=484; 71.1%); 3rd generation (N=51; 7.5%); 4th generation (N=50; 7.3%); 5th generation (N=31; 4.6%)	Undergraduate college students	M=20.1	USA
-	Hollingsworth et al. (2017)	Torres-Harding et al. (2012)	153 (W=76, 56.3%)	African American	-	College students	M=19.45	USA
-	Marks et al. (2021)	Torres-Harding et al. (2012)	189 (W=166)	Black American	-	College students	M=22.45 (SD=6.17)	USA
-	O'Keefe et al. (2015)	Torres-Harding et al. (2012)	405 (W=249)	American Indian/Alaska Native (N=142; 35.1%), African American/Black (N=135; 33.3%), Hispanic/Latino(a) (N=80; 19.8%), or Asian/Asian American (N=48; 11.9%)	-	Undergraduate college students	M=19.65	USA
-	Robinson-Perez et al. (2020)	Torres-Harding et al. (2012)	216 (W=151, 71.23%)	Students of color	-	Undergraduate college students	Under 18 (N=135; 62.79%); 19 older (N=80; 37.21%)	USA
-	Samek et al. (2024)	Torres-Harding et al. (2012)	400	Asian (10%); Black or African (20%); Hispanic (20%); two or more race (10%)	-	college students		USA

Table 1 (continued)

Scale	Reference	Developed by	Sample (Women; %)	Ethnic Groups (ethnicity)	Generational Status	Type of Students	Mean Age (SD)	Country
-	Suh et al. (2024)	Torres-Harding et al. (2012)	140 (W=55; 53.4%)	African/Black (N=43, 42.0%), Asian (N=32, 31.3%), Latinx (N=12, 11.7%), Biracial (N=7, 7.0%), Native American (N=5, 4.9%), and Arab/Middle Eastern (N=3, 3.0%)	1st generation (N=28; 27.2%); 2nd generation (N=20; 19.4%); 3rd generation or higher (N=53; 51.5%)	college student	M=21.3 (SD=3.3)	USA
-	Torres-Harding et al. (2020)	Torres-Harding et al. (2012)	467 (W=367; 78.6%)	African American (N=176; 37.7%); Latino (N=130; 27.8%); Asian American, South Asian, Pacific Islander, or Middle Eastern (N=106; 2.7%); American Indian/Native American (N=8; 1.7%); biracial or multiracial (N=47; 10.1%)	1st generation (N=51; 10.9%); 2nd generation (N=167; 35.8%); 3rd generation (N=35; 7.5%), international students and/or foreign nationals (N=7; 1.5%), none of the above (N=202; 43.3%)	college students	M=24.16 (SD=6.86)	USA
-	Williams et al. (2018)	Torres-Harding et al. (2012)	123 (W=98)	Monoracial African American (N=102); Biracial African American (N=21)	-	undergraduate college students	M=21.07 (SD=4.95)	USA
-	Williams et al. (2017)	Torres-Harding et al. (2012)	177 (W=75.2%)	African American (N=65; 32.2%); European American (N=112; 55.7%)	-	undergraduate college students	M=21.13 (SD=3.98)	USA

Table 1 (continued)

Scale	Reference	Developed by	Sample (Women; %)	Ethnic Groups (ethnicity)	Generational Status	Type of Students	Mean Age (SD)	Country
Daily Life Experiences scale (DLE; Harrell et al., 1997), a subscale from the Racism and Life Experiences Scale (RaLES)	Vaishnav and Wester (2023)	Harrell et al. (1997)	101 (W = 78; 78%)	Black/African American (N = 53; 53%); Latinx/Latin American (N = 25; 25%); Asian American (N = 7; 7%); Native American/Alaska Native (N = 1; 1%); Multiracial (N = 6; 6%); Race/Ethnicity not reflected in the options (N = 9; 9%)	-	doctoral students	> 18	USA
-	Salami et al. (2021)	Harrell et al. (1997)	225 (W = 169; 74.80%)	African American	-	college students	M = 20.43 (SD = 1.79)	USA
The Racial Microaggressions in Higher Education Scale	Choi et al. (2017)	Lewis et al. (2017)	353 (W = 46%)	Asian and Asian-American	-	undergraduate college student (83%); graduate or professional students (17%)	M = 21 (SD = 3.15)	USA
-	Choi et al. (2021)	Lewis et al. (2017)	553 (W = 41.3%)	Asian and Asian-American	-	undergraduate students (83%); graduate or professional students (17%)	M = 22 (SD = 3.27)	USA
-	Lewis et al. (2021)	Lewis et al. (2017)	1,710 (W = 39%)	Black/African American (21.8%); Asian/Asian American (45.6%); Hispanic/Latino (25%); American Indian/Alaska Native (0.4%); Native Hawaiian/Pacific Islander (0.5%); Multiracial (6.7%)	-	college students	M = 22.51 (SD = 4.41)	USA

Table 1 (continued)

Scale	Reference	Developed by	Sample (Women; %)	Ethnic Groups (ethnicity)	Generational Status	Type of Students	Mean Age (SD)	Country
School-based racial/ethnic microaggressions (SB-REMA)	Durkee et al. (2021)	Keels et al. (2017)	533 (W = 65%)	Black (N = 176); Latinx (N = 261)	1st generation (57%); 2nd generation or higher (43%)	college students	M = 18.2 (SD = 0.45)	USA
-	Holter et al. (2023)	Keels et al. (2017)	47 (W = 38, 80.9%)	Indigenous	-	high school	M = 20.90 (SD = 1.82)	USA
-	Hope et al. (2016)	Keels et al. (2017)	533 (Black W = 75%; Latino W = 57%)	Black (N = 221); Latino (N = 312)	1st generation: Black (49%); Latino (69%) 2nd generation of higher Black (51%); Latino (31%)	undergraduate college students	M = 18.2 (SD = 0.47)	USA
-	Hope et al. (2018)	Keels et al. (2017)	504 (total sample W = 64%; Black W = 75%; Hispanic W = 56%)	Black (N = 221); Hispanic (N = 283)	1st generation: total sample (61%); Black students: (49%); Hispanic students (71%) 2nd generation or higher: total sample (39%); Black (51%); Hispanic (29%)	undergraduate college students	M = 18.2 (SD = 0.47)	USA
-	Keels et al. (2017)	Keels et al. (2017)	462 (Black W = 75%; Latinx W = 57%)	Black and Latinx	1st generation (8%); at least one foreign-born parent: Black (25%); Latinx (81%)	college students	M = 18.2; (SD = 0.45)	USA

Table 1 (continued)

Scale	Reference	Developed by	Sample (Women; %)	Ethnic Groups (ethnicity)	Generational Status	Type of Students	Mean Age (SD)	Country
-	McGee and Kruger (2022)	Keels et al. (2017)	108 (W=83)	African American	-	undergraduate college students	M=24.9 (SD=7.6)	USA
-	Pinedo et al. (2021)	Keels et al. (2017)	504 (W=75%; Black W=75%; Latinx W=57%)	Black (43.8%); Latinx (56.2%)	1st generation: Black (24%); Latinx (85%); 2nd generation or higher: Black (76%); Latinx (15%)	college students	M=18.2 (SD=0.47)	USA
Gendered Racial Microaggressions Scale (GRMS)	Erving et al. (2022)	Lewis and Neville (2015)	234 (W=100%)	Black Americans	1st generation (41%); 2nd generation (59%)	undergraduate and graduate students	Ranging from 18 to 65; 18–22 years (60%); 23–30 years (18%); 31–40 (19%); 41–older (13%)	USA
The Revised 28-Item Racial and Ethnic Microaggressions Scale (R28REMS)	Ebrahimi et al. (2024)	Forrest-Bank et al. (2015)	163 (W=66; 40.5%)	Black American		college students	M=25.7 (SD=3.27)	USA

Table 1 (continued)

Scale	Reference	Developed by	Sample (Women; %)	Ethnic Groups (ethnicity)	Generational Status	Type of Students	Mean Age (SD)	Country
-	Lui (2020)	Forrest-Bank et al. (2015)	713 (W=50.9%; Asian American W=42%; African American W=64.7%; Latinx Americans=60.4%)	Asian Americans (N=398; F=42.0%); African Americans (N=133); Latinx Americans (N=182)	1st generation: Asian Americans (55.5%); African Americans (6.8%); Latinx Americans (24.2%)	college students	M=22.72 (SD=4.76); Asian Americans (M=22.69; SD=3.69); African Americans (M=22.42; SD=5.34); Latinx Americans (M=23.02; SD=6.24)	USA
-	Forrest-Bank and Cuellar (2018)	Forrest-Bank et al. (2015)	213 (W=136; 63.8%)	Asian (N=74; 34.7%); Latino or Hispanic (N=67; 31.5%); Black (N=71; 33.5%); Native American (N=1; 0.5%)	-	college student	M=23.74; (SD=4.11)	USA
-	Forrest-Bank et al. (2015)	Forrest-Bank et al. (2015)	286 (W=191; 66.8%)	Asian (N=101; 35.3%); Black (N=82; 28.7%); Latino/Hispanic (N=103; 36%)	2nd or higher generation (N=220; 76.9%)	college students	M=24.02 (SD=4.30)	USA
-	Pro et al. (2018)	Forrest-Bank et al., (2015)	332 (W=66.4%)	Asian (36.5%); Hispanic/Latino(a) (24.7%); multiracial (19.0%); African American (16.0%); Middle Eastern/Arab American (3.9%)	-	undergraduate and graduate college students	M=22.6	USA

Table 1 (continued)

Scale	Reference	Developed by	Sample (Women; %)	Ethnic Groups (ethnicity)	Generational Status	Type of Students	Mean Age (SD)	Country
Ethnic micro-aggression scale (EMA)	Bozo et al. (2018)	Huynh (2012)	293 (W = 168; 57%)	Latina/o (N = 195; 63.5%); Mexican (94%); US born (86%); Asian American (N = 98; 36.5%); Vietnamese (N = 72); US-born (80%)	1st generation (N = 58); 2nd generation (N = 273); 3rd generation or higher (N = 22)	high school	M = 17.13 (SD = 0.73)	USA
-	D'hondt et al. (2023)	Huynh (2012)	2,763 (W = 49.9%)	Global South (N = 2,763; 71.9%)	Second and third generation (N = 2754; 71.2%)	high school (third year (grade 9 in the us) of secondary education)		Belgium
	Huynh (2012)	Huynh (2012)	360 (W = 57%)	Latino (N = 247); Asian American (N = 113)	-	high school students	M = 17.18, SD = .75	USA
	Huynh & Gilen-O'Neel (2016)	Huynh (2012)	360 (W = 57%)	Latino (N = 247); Asian American (N = 113)	Latino: Mexican (94.7%) 1st generation (15%) or 2nd generation (77%); Asian American: Vietnamese (73.5%) 1st generation (19%) or 2nd generation (79%)	high school students	M = 17.18 (SD = 0.75)	USA
Racial Micro-aggressions on Christian Campuses (RMCC)	Kim et al. (2021)	Kim et al. (2021)	300 (W = 219)	Asian American (N = 185); African American (N = 61); Hispanic (N = 32); Native Hawaiian or other Pacific Islander (N = 32); Non-Hispanic White (N = 24); and other ethnicities (N = 29)	1st generation (N = 75); 2nd generation or higher (N = 221); not specified (N = 4)	undergraduate college students	M = 20.39 (SD = 2.01)	USA

Table 1 (continued)

Scale	Reference	Developed by	Sample (Women; %)	Ethnic Groups (ethnicity)	Generational Status	Type of Students	Mean Age (SD)	Country
The Acceptability of Racial Micro-aggressions Scale (ARMS)	Law et al. (2019)	Mekawi and Todd (2018)	102 (W=73)	Asian American: Chinese (N=37); Filipino (N=27); Japanese (N=19); Korean (N=11); Taiwanese (N=8); Vietnamese (N=10); Cambodian (N=3); Indian (N=1); other (N=7)	2nd generation or higher (N=78)	undergraduate college students	M=20.45 (SD=3.42)	USA
-	Mekawi and Todd (2018)	Mekawi and Todd (2018)	Study 1 (N=596; W=64.4%); Study 2 (N=404; W=57.7%); Study 3 (N=90; W=67.8%)	Black/African-American: Study 1 (N=41; 6.9%); Study 2 (N=19; 4.7%); Study 3 (N=4; 4.4%) White: Study 1 (N=337; 56.5%); Study 2 (N=239; 59.2%); Study 3 (N=50; 55.6%) Latino/Hispanic: Study 1 (N=70; 11.7%); Study 2 (N=38; 9.4%); Study 3 (N=13; 14.4%) South Asian: Study 1 (N=43; 7.2%); Study 2 (N=26; 6.4%); Study 3 (N=3; 3.3%) East Asian: Study 1 (N=38; 6.4%); Study 2 (N=38; 9.4%); Study 3 (N=7; 7.8%) Pacific Islander: Study 1 (N=1; .2%); Study 2 (N=2; .5%); Study 3 (N=0); Middle Eastern/North African: Study 1 (N=8; 1.3%); Study 2 (N=3; .7%); Study 3 (N=0); Biracial or multiracial Study 1 (N=50; 8.4%); Study 2 (N=33; 8.2%); Study 3 (N=12; 13.3%); Other/Prefer not to answer: Study 1 (N=8; 1.3%); Study 2 (N=6; 1.5%); Study 3 (N=1; 1.1%)	-	undergraduate college students	Study 1 (M=19.57; SD=1.23); Study 2 (M=19.35; SD=1.19); Study 3 (M=18.99; SD=1.22)	USA

Table 1 (continued)

Scale	Reference	Developed by	Sample (Women; %)	Ethnic Groups (ethnicity)	Generational Status	Type of Students	Mean Age (SD)	Country
	Mujica et al. (2022)	Mekawi, Y., & Todd, N.R. (2018)	269 (W = 142; 67.6%)	Biracial/multiracial (N = 3; 1.43%); American Indian/Native American/Alaskan Native (N = 5; 2.38%); Hispanic/latinx (N = 8; 3.80%); Black/African descendant (N = 0; 0%); Asian/Pacific Islander (N = 0; 0%)		College students	M = 19.93 (SD = 4.33)	USA
Cultural Cognitions and Actions Survey (CCAS)	Kanter et al. (2017)	Kanter et al. (2017)	151 (Black W = 27; 82%; non-Hispanic White W = 71; 60%)	Black (n = 33); non-Hispanic White (N = 118)		Undergraduate college students		USA
Inventory of Microaggressions Against Black Individuals (IMABI)	Mercer et al. (2011)	Mercer (2011)	385 (W = 83%)	Black or African American	-	College students	M = 21.37 (SD = 5.11)	USA
-	Clark et al. (2018)	Mercer (2011)	400	European American (N = 313; 78.3%), Hispanic American (N = 39; 9.8%); African American (N = 22; 5.5%); Asian American (N = 23; 5.8%); Native American (N = 3; 0.8%)		College students	M = 26.04 (SD = 5.03)	USA
The Microaggressions Distress Scale (MDS)	O'Keefe and Greenfield (2019)	Walters (2005)	504 (W = 347; 69%)	American Indian/Alaska native (88.9%); Biracial or more than race selected (11.1%)	-	Post-secondary institutions	M = 26.85 (SD = 9.55)	USA

Table 1 (continued)

Scale	Reference	Developed by	Sample (Women; %)	Ethnic Groups (ethnicity)	Generational Status	Type of Students	Mean Age (SD)	Country
items from the Everyday Discrimination Scale	De Coster & Thomson (2017)	Williams et al. (1997)	385 (W=47%)	White (55%); African American (31%); Hispanic (5%); Asian (3%); other race (5%)		Middle schoolers	Black students (M=12.63); White students (M=12.28); other race (M=12.78)	USA
short version of the Microaggressions Distress Scale	Dickerson, D. et al. (2019)	Chae and Walters (2009)	182 (W=94; 52%)	Hispanic/Latino(a) (N=83; 46%); American Indian/Alaska Native (N=150; 82%); Asian/Asian American/Pacific Islander (N=7; 4%); Black/African American (N=20; 11%); White (N=32; 18%); Other (N=8; 4%)	-	High school students – Adolescents (school not specified)	M=15.6	USA
	Greenfield et al. (2021)	Walters (2005)	347	AI/AN (American Indian; American Native)		College and community students	M=28.45 (SD=9.97)	USA
no name—racial microaggression on the campus, academic and peer levels	Lee et al. (2020)	-	1688	Black/African American; Asian/Asian American; Indigenous/Native American; Latinx/Hispanic; Other Race	-	College students	-	USA
no name of the scale (items were derived from—and part of the—the Racial Battle Fatigue Scale (RBFS))	Franklin (2019)	-	399 (W=235, 58.9%)	African American, non Latino (N=239; 59.9%); Mexican American (N=103; 26%); Other Latino (N=57; 14.3%)	-	College students	-	USA

Table 1 (continued)

Scale	Reference	Developed by	Sample (Women; %)	Ethnic Groups (ethnicity)	Generational Status	Type of Students	Mean Age (SD)	Country
-	Franklin et al. (2014)	-	W=210 (W=131; 62.41%)	Latina/o students	-	College students	-	USA
Racial Microaggression Stress	Collins and Stevenson (2023)	Items modified from the FIRES scale (Coleman & Stevenson, 2013)	593 (W=317; 65.3%)	African American (47.8%); Latino (28.2); Asian (12.5%); Biracial (6.7%); White (3.5%); Middle Eastern (0.9%); Native American (0.5%)	-	Middle schoolers (15.8%); Upper schoolers (52.3%); College students (31.9%)	-	USA
The Bystander Intervention Measure for Racial Microaggressions (BIM-RM)	Jenkins et al. (2024)	Jenkins et al. (2024) derived from Nickerson et al. (2014)	536	American Indian, Native American, and/or Alaska Native (N=39); Asian (N=67); Black (N=102); Native Hawaiian or Other Pacific Islander (N=2); Multiracial (N=41); White Hispanic or Latino/a/x (N=85); White Non-Hispanic (N=191)	-	College students	Ranging from 19 to 25	USA
-	Marks et al. (2024)	Derived from Nickerson et al., (2014)	452 (W=66.6%)	Black (N=89); Latino/a/x (N=88); Asian American (N=38); Multiracial (N=29); American Indian, Native American, or Alaska Native (N=5); Native Hawaiian or Other Pacific Islander (N=3); White (N=200)	-	Undergraduate college students	M = 20.06; SD = 1.18	USA
Multigroup Everyday Racial Discrimination Scale (MERDS)	Lui and Kamata (2024)	Lui and Kamata (2024)	1355 (W=56%)	Asian American (n=656), Latino/a/x American or Hispanic (n=437), and African American or Black (n=262)	2nd generation (72.3%)	College and graduate students	M = 21.54 (SD = 4.04)	USA

Table 1 (continued)

Scale	Reference	Developed by	Sample (Women; %)	Ethnic Groups (ethnicity)	Generational Status	Type of Students	Mean Age (SD)	Country
Immigration Status Microaggressions Scale	Barrita et al. (2024)	Barrita et al. (2024)	436 (W = 313; 71.8%)	Asian, Asian American, or Pacific Islander (N = 210; 48.17%); Latinx, Latina/o, or Hispanic (N = 226; 51.83%)	1st generation (N = 15; 3.4%); 1.5 generation (53; 12.2%); 2nd generation (N = 276; 63.3%); 3rd generation (N = 58; 13.3%); 4th generation (N = 34; 7.8%)	College students	M = 19.41 (SD = 1.87)	USA
The Latino Male Undergraduates Educational Microaggressions Scale	Castellanos et al. (2018)		95	Latino male students		Undergraduate college students	M = 20.95 (SD = 2.30)	
no name	Garibay and Mathis (2021)		92	Black/African origin American	-	Undergraduate college students	-	USA
no name	Ong et al. (2013)	Items based on Sue's (2007) taxonomy	152 (W = 65)	Chinese Americans (N = 89; 58.5%); Asian Indians (N = 20; 13.2%); Taiwanese (N = 12; 7.9%); Koreans (N = 9; 5.95%); Vietnamese (N = 8; 5.3%); Filipinos (n = 6; 3.9%); Japanese (N = 5; 3.3%); other Asians (e.g., Cambodian, Hmong, Malaysian) (N = 3; 1.9%)	1st generation (8.6%); 1.5 generation (28.3%); 2nd generation (56.6%)	College students	M = 18.14 (SD = 0.55)	USA

Table 1 (continued)

Scale	Reference	Developed by	Sample (Women; %)	Ethnic Groups (ethnicity)	Generational Status	Type of Students	Mean Age (SD)	Country
-	Ong et al. (2017)	Items based on Sue's (2007) taxonomy	152 (W=65)	White/non-Hispanic (38.9%); Asian American (16.8%); Hispanic/Latino (11.9%); Black/African American (6.9%); American Indian/Alaskan Native (0.4%); Specifically: Chinese Americans (58.5%); Asian Indian (13.2%); Taiwanese (7.9%); Korean (5.9%); Vietnamese (5.3%); Filipino (3.9%); Japanese (3.3%); other Asian (e.g., Cambodian, Hmong, Malaysian, etc.) (1.9%)	1st generation (8.6%); 1.5 generation (28.3%); 2nd generation (56.6%)	College students	M=18.14 (SD=0.55)	USA
No name	Marconi et al. (2022)		1,164 (W=747, 64.2%); (W of color r=579, 65.1%)	White (N=273; 23.5%); Students of color (N=889) of them: Asian (N=339; 29.1%); African-American/black (N=144; 12.4%); Latinx (N=147; 12.6%); Other (N=37; 3.2%) Biracial (N=201; 17.2%); Multiracial (N=23; 2%)	-	Undergraduate college students	> 18	USA
No name	Blume et al. (2012)	-	684 (F=506; 65.8%)	African American (N=100; 56.2%); Asian American (N=37; 20.8%); American Indian (N=6; 3.4%); Hispanic or Latino American (N=35; 19.7%)	-	Undergraduate college students	M=18.75	USA

Table 1 (continued)

Scale	Reference	Developed by	Sample (Women; %)	Ethnic Groups (ethnicity)	Generational Status	Type of Students	Mean Age (SD)	Country
No name	Banks and Landau (2019)	Items based on Sue's (2007) taxonomy	631 (W=468)	White (N=480); Latinx (N=51); Bi/Multiracial (N=38); Black/African American (N=43); Asian (N=17); Middle Eastern (N=1); Native American (N=1)	-	Undergraduate college students	M=19.92, SD=2.71	USA
Cultural Cognitions and Actions Survey (CCAS)	Kanter et al. (2017)	Kanter et al. (2017)	151 (Black W=27; 82%; non-Hispanic White W=71; 60%)	Black (n=33); non-Hispanic White (N=118)		Undergraduate college students		USA

^aSchool and workplace microaggressions (4 items)^aMicroinvalidations (9 items); Workplace and School Microaggressions (5 items)^aInvisibility (8 items); Criminality (4 items); Low-Achieving/Undesirable Culture (10 items)^aAcademic Inferiority^aAcademic Inferiority^aColor Evasion (8 item); Power Evasion (9 items)1–5

Table 2 Psychometric Properties and theoretical dimensions

Assessment tool	Developed by	Reference	Designed for Educational Settings	N. Dim	Dimensions	Measure of
Racial and Ethnic Microaggression scale (REMS) By Nadal, K.L. (2011)	Nadal (2011)	Anglin et al. (2023)	No	6	Assumptions of inferiority (8 items); Second-class citizen/assumptions of criminality (7 items); Microinvalidations (9 items); Exoticization/assumptions of similarity (9 items); Environmental microaggressions (7 items); School and workplace microaggressions (5 items)	Occurrence/Frequency of experienced racial/ethnic microaggressions
-	-	Bonifacio et al. (2018)		6		Occurrence/Frequency of experienced racial/ethnic microaggressions
-	-	Buckner et al. (2024)		6		Occurrence/Frequency of experienced racial/ethnic microaggressions
-	-	Davenport et al. (2021)		6		Occurrence/Frequency of experienced racial/ethnic microaggressions
-	-	Farber et al. (2021)		1 (out of 6) ^a		Occurrence/Frequency of experienced racial/ethnic microaggressions
-	-	Forrest-Bank and Jenson (2015)		6		Occurrence/Frequency of experienced racial/ethnic microaggressions
-	-	Francois et al. (2023)		2 (out of 6) ^a		Occurrence/Frequency of experienced racial/ethnic microaggressions
-	-	Lui and Anglin (2022)		6		Occurrence/Frequency of experienced racial/ethnic microaggressions
-	-	Lui et al. (2022)		6		Occurrence/Frequency of experienced racial/ethnic microaggressions
-	-	Kim (2017)		6		Occurrence/Frequency of experienced racial/ethnic microaggressions

Table 2 (continued)

Assessment tool	Developed by	Reference	Designed for Educational Settings	N. Dim	Dimensions	Measure of
—	—	Mann-James et al. (2021)	—	6	—	Occurrence/Frequency of experienced racial/ethnic microaggressions
—	—	Middleton & Owens (2023)	—	6	—	Occurrence/Frequency of experienced racial/ethnic microaggressions
—	—	Nadal et al. (2014)	—	6	—	Occurrence/Frequency of experienced racial/ethnic microaggressions
—	—	Palmer-Bacon et al. (2020)	—	6	—	Perceived experiences of racial/ethnic microaggressions
—	—	Proctor et al. (2018)	—	3	—	Occurrence/Frequency of experienced racial/ethnic microaggressions
—	—	Ramsey et al. (2023)	—	6	—	Occurrence/Frequency of experienced racial/ethnic microaggressions
—	—	Sanchez et al. (2018)	—	6	—	Occurrence/Frequency of experienced racial/ethnic microaggressions
—	—	Sarsar et al. (2023)	—	6	—	Occurrence/Frequency of experienced racial/ethnic microaggressions
—	—	Su et al. (2020)	—	6	—	Occurrence/Frequency of experienced racial/ethnic microaggressions
—	—	Su et al. (2022)	—	6	—	Occurrence/Frequency of experienced racial/ethnic microaggressions
—	—	Williams et al. (2016)	—	6	—	Occurrence/Frequency of experienced racial/ethnic microaggressions

Table 2 (continued)

Assessment tool	Developed by	Reference	Designed for Educational Settings	N	Dim	Dimensions	Measure of
Racial Microaggressions Scale (RMAS)	Torres-Harding et al. (2012)	Berger et al. (2020)	No	3 ^a		Foreigner/Not Belonging (3 items); Criminality (4 items); Sexualization (3 items); Low-Achieving/Undesirable Culture (9 items); Invisibility (8 items); Environmental Invalidation (5 items)	Occurrence/Frequency of experienced racial/ethnic microaggressions
-	-	Brezinski et al. (2018)		6			Occurrence/Frequency of experienced racial/ethnic microaggressions
-	-	Feng et al. (2023)		6			Occurrence/Frequency of experienced racial/ethnic microaggressions
-	Hernandez and Villodas (2019)		Occurrence/Frequency of experienced racial/ethnic microaggressions	Likert	1–4	32 Cronbach $\alpha = .95$ Invisibility ($\alpha = .89$); Criminality ($\alpha = .85$); Low-Achieving/Undesirable Culture ($\alpha = .87$); Sexualization ($\alpha = .83$); Foreigner/Not Belonging ($\alpha = .78$); Environmental Invalidation ($\alpha = .81$)	Occurrence/Frequency of experienced racial/ethnic microaggressions CFI = .98, TLI = .97, SRMR = .02
-	-	Hernandez and Villodas (2020)		6			Occurrence/Frequency of experienced racial/ethnic microaggressions
-	-	Hollingsworth et al. (2017)		6			Occurrence/Frequency of experienced racial/ethnic microaggressions
-	-	Hope et al. (2016)		3			Occurrence/Frequency of experienced racial/ethnic microaggressions

Table 2 (continued)

Assessment tool	Developed by	Reference	Designed for Educational Settings	N. Dim	Dimensions	Measure of
—	—	Marks et al. (2021)	6	6		Occurrence/Frequency of experienced racial/ethnic microaggressions
—	—	O'Keefe et al. (2015)	6	6		Occurrence/Frequency of experienced racial/ethnic microaggressions
—	—	Robinson-Perez et al. (2020)	6	6		Occurrence/Frequency of experienced racial/ethnic microaggressions
—	—	Samek et al., (2024)	6	6		Occurrence/Frequency of experienced racial/ethnic microaggressions
—	—	Suh et al. (2024)	1 (out of 6) invisibility	6		Occurrence/Frequency of experienced racial/ethnic microaggressions
—	—	Torres-Harding et al. (2020)	6	6		Occurrence/Frequency of experienced racial/ethnic microaggressions
—	—	Williams et al. (2018)	6	6		Occurrence/Frequency of experienced racial/ethnic microaggressions
—	—	Williams et al. (2017)	6	6		Occurrence/Frequency of experienced racial/ethnic microaggressions
Daily Life Experiences scale (DLE; Harrell et al., 1997), a subscale from the Racism and Life Experiences Scale (RaLES)	Harrell et al. (1997)	Vaishnav and Wester (2023)	No	2	DLE-Frequency; DLE-Bother	Occurrence/Frequency and perceived bother

Table 2 (continued)

Assessment tool	Developed by	Reference	Designed for Educational Settings	N. Dim	Dimensions	Measure of
-	Harrell et al. (1997)	Salami et al. (2021)		As 1-dimension DLE-R		Occurrence/Frequency of experienced racial/ethnic microaggressions
The Racial Microaggressions in Higher Education Scale	Lewis et al. (2017)	Choi et al. (2017)	Yes	3	Micro-insults (5 items); Intellectual inferiority microaggressions (5 items); Invisibility microaggressions, (4 items)	Occurrence/Frequency of experienced racial/ethnic microaggressions
-		Choi et al. (2021)		3		Occurrence/Frequency of experienced racial/ethnic microaggressions
-		Lewis et al. (2021)		3		Occurrence/Frequency of experienced racial/ethnic microaggressions
School-based racial/ethnic microaggressions (SB-REMA)	Keels et al. (2017)	Durkee et al. (2021)	Yes	3 computed as a one-factor scale	Academic Inferiority; Expectations of Aggression Subscale; Stereotypical Misrepresentations computed as a single scale	Occurrence/Frequency of experienced racial/ethnic microaggressions
-		Holter et al. (2023)		3		Retrospective reflection of experiences of racial/ethnic microaggressions
-		Hope et al. (2018)		1 ^a		Occurrence/Frequency of experienced racial/ethnic microaggressions
-		Keels et al. (2017)		3		Occurrence/Frequency of experienced racial/ethnic microaggressions
-		McGee and Kruger (2022)		1 ^a		Occurrence/Frequency of experienced racial/ethnic microaggressions
-		Pinedo et al. (2021)		3		Occurrence/Frequency of experienced racial/ethnic microaggressions

Table 2 (continued)

Assessment tool	Developed by	Reference	Designed for Educational Settings	N. Dim	Dimensions	Measure of
Gendered Racial Microaggressions Scale (GRMS)	Lewis and Neville (2015)	Erving et al. (2022)	No	4	Assumptions of Beauty and Sexual Objectification (11 items); Silenced and Marginalized (7 items); Strong Black Woman Stereotype (5 items); Angry Black Woman Stereotype (3 items)	Occurrence/Frequency of experienced racial/ethnic microaggressions
The Revised 28-Item Racial and Ethnic Microaggressions Scale (R28REMS)	Forrest-Bank et al. (2015)	Ebrahimi et al. (2024)	No	5	Assumption of inferiority (7 items); Second-class citizen/ assumption of criminality (6 items); Assumption of similarities (5 items); Microinvalidations (6 items); Media microaggressions (4 items)	Occurrence/Frequency of experienced racial/ethnic microaggressions
-	Forrest-Bank et al. (2015)	Lui (2020)		5		Occurrence/Frequency and stress perceived stress related to racial/ethnic microaggressions
-	Forrest-Bank and Cuellar (2018)	Forrest-Bank and Cuellar (2018)		5		Occurrence/Frequency of experienced racial/ethnic microaggressions
-	Forrest-Bank et al. (2015)	Forrest-Bank et al. (2015)		5		Occurrence/Frequency of experienced racial/ethnic microaggressions
-	Pro et al. (2018)	Pro et al. (2018)		5		Occurrence/Frequency of experienced racial/ethnic microaggressions
Ethnic microaggressions scale (EMA)	Huynh (2012)	Bozo et al. (2018)		3	Emphasis of differences (4 items); Denial of racial reality (3 items); Negative treatment (5 items)	Occurrence/Frequency of experienced racial/ethnic microaggressions

Table 2 (continued)

Assessment tool	Developed by	Reference	Designed for Educational Settings	N. Dim	Dimensions	Measure of
-		D'hondt et al. (2023)		3		Occurrence/Frequency of experienced racial/ethnic microaggressions
-		Huynh (2012)		3		Occurrence/Frequency of experienced racial/ethnic microaggressions
		Huynh & Gillen-O'Neel (2012)		3		Occurrence/Frequency of experienced racial/ethnic microaggressions
Racial Microaggressions on Christian Campuses (RMCC)	Kim et al. (2021)	Kim et al. (2021)	Yes	2	RMCC-Misguided (reflected receiving misguided solutions to racism), RMCC Critical reflected receiving criticism in racialized messages	Occurrence/Frequency of experienced racial/ethnic microaggressions
The Acceptability of Racial Microaggressions Scale (ARMS)	Mekawi and Todd (2018)	Law et al. (2019)	No	2 ^a	Victim Blaming (9 items); Color Evasion (8 items); Power Evasion (9 items); Exoticizing (8 items)	Attitudes (acceptability of expressions of microaggressions)
-	-	Mekawi and Todd (2018)		4		Attitudes (acceptability of expressions of microaggressions)
		Mujica et al. (2022)				Attitudes (acceptability of expressions of microaggressions)
Cultural Cognitions and Actions Survey (CCAS)	Kanter et al. (2017)	Kanter et al. (2017)	No	5	5 different scenarios measuring one's self-reported likelihood of engaging in microaggressions	Attitudes (How likely is to say microaggressions)

Table 2 (continued)

Assessment tool	Developed by	Reference	Designed for Educational Settings	N. Dim	Dimensions	Measure of
The Bystander Intervention Measure for Racial Microaggressions (BIM-RM)	derived from Nickerson et al. (2014)	Jenkins et al. (2024)	No	5	Notice (3 items), Interpret (3 items), Accept Responsibility (3 items), Know (3 items); Act (14 items)	Attitudes
-	derived from Nickerson et al. (2014)	Marks et al. (2024)		5		Attitudes
The Latino Male Undergraduates Educational Microaggressions Scale	yes	Castellanos et al. (2018)	Yes	3	self-beliefs; social connections; values and customs	Occurrence/Frequency and feeling of being welcomed in the educational settings
no name—racial microaggression on the campus, academic and peer levels	-	Lee et al. (2020)	Yes	3	Microaggressions at campus level (5 items); academic level (5 items); peer level (6 items)	Reported feelings in response to racial/ethnic microaggressions
no name	Items based on Sue's (2007) taxonomy	Ong et al. (2013)	No	2	Microinvalidation; Microinsult	Occurrence/Frequency of experienced racial/ethnic microaggressions

Table 2 (continued)

Assessment tool	Developed by	Reference	Designed for Educational Settings	N. Dim	Dimensions	Measure of
-	Items based on Sue's (2007) taxonomy	Ong et al. (2017)	2		Microinvalidation; Microinsult	Occurrence/Frequency of experienced racial/ethnic microaggressions
No name	Items based on Sue's (2007) taxonomy	Banks and Landau (2019)	No	2	Experience; Offensive	Occurrence/Frequency; and perceived offensiveness of racial/ethnic microaggressions
Type	Range	N. of Items	Reliability			
Ordinal	1–5	45	Cronbach $\alpha = .89$ Assumptions of inferiority ($\alpha = .88$); Second-class citizen/assumptions of criminality ($\alpha = .85$); Microinvalidations ($\alpha = .85$); Exoticization/assumptions of similarity ($\alpha = .81$); Environmental microaggressions ($\alpha = .84$); School and workplace microaggressions ($\alpha = .70$)		No	No
Likert	1–7	45	Cronbach $\alpha = .91$		No	No
Ordinal	1–5	45	No		No	No
Dichotomous	0–1	35	No		No	No
Dichotomous	0–1	4	No		No	No
-	-	45	Cronbach $\alpha = .92$ (subscales ranging from .72 to .91)		No	No
Ordinal	0–1	14	Cronbach $\alpha = .93$		No	No
Ordinal	1–5	45	Cronbach $\alpha = .91$ Assumptions of inferiority ($\alpha = .87$); Second-class citizen and assumptions of criminality ($\alpha = .83$); Microinvalidations ($\alpha = .83$); Exoticization/assumptions of similarity ($\alpha = .80$); Environmental microaggressions ($\alpha = .84$); Workplace and school microaggressions ($\alpha = .69$)		No	No

Table 2 (continued)

Type	Range	N. of Items	Reliability		Efa	Cfa
Ordinal	1–5	45	Cronbach $\alpha = .89$ Assumptions of inferiority ($\alpha = .88$); Second-class citizen/assumptions of criminality ($\alpha = .84$); Micro-invalidations ($\alpha = .85$); Exoticization/assumptions of similarity ($\alpha = .80$); Environmental microaggressions ($\alpha = .84$); School and workplace microag-gressions ($\alpha = .70$)	No	No	
ordinal	1–2	45	Cronbach $\alpha = .90$	No	No	
Ordinal	1–2	45	No	No	No	
Ordinal	1–5	45	Assumptions of inferiority ($\alpha = .87$); Second-class citizen/assumptions of criminality ($\alpha = .82$); Micro-invalidations ($\alpha = .84$); Exoticization/assumptions of similarity ($\alpha = .78$); Environmental microaggressions ($\alpha = .79$)	No	No	
Dichotomous	0–1	45	Cronbach $\alpha = .93$ Assumptions of Inferiority ($\alpha = .89$); Second-Class Citizen and Assumptions of Criminality ($\alpha = .88$); Microinvalidations ($\alpha = .89$); Exoticization/ Assumptions of Similarity ($\alpha = .85$); Environmental Microaggressions ($\alpha = .85$)	No	No	
Likert	-	45	No	No	No	
Ordinal	1–5		Assumptions of inferiority ($\alpha = .91$); Microinvalidations ($\alpha = .91$); Workplace and school microag-gressions ($\alpha = .79$)	No	No	
Likert	1–4	45	No	No	No	
Likert	0–5	45	Cronbach $\alpha = .92$	No	No	
Dichotomous	0–1	45	No	No	Yes – confirmed as a single factor scale – CFI = .92, TLI = .90, RMSEA = .05, SRMR = .06	
Ordinal	1–5	45	No—The environmental microaggressions subscale was negatively correlated with the other subscales	No	No	
Ordinal	1–5	45	No—The environmental microaggressions subscale was negatively correlated with the other subscales	No	No	

Table 2 (continued)

Type	Range	N. of Items	Reliability	Efa	Cfa
Ordinal	1–5	45	Assumptions of Inferiority ($\alpha = .94$); Second-Class Citizen and Assumptions of Criminality ($\alpha = .93$); Microinvalidations ($\alpha = .89$); Exoticization/Assumptions of Similarity ($\alpha = 0.86$); Environmental Microaggressions ($\alpha = .97$); Workplace and School Microaggressions ($\alpha = .96$) Cronbach $\alpha = .92$	No	No
Likert	1–4	22		No	Yes – confirmed as a single factor scale— CFI = .88, TLI = .86, RMSEA = .07
Likert	1–4	32	Foreigner/Not Belonging ($\alpha = .78$); Criminality ($\alpha = .85$); Sexualization ($\alpha = .83$); Low-Achieving/Undesirable Culture ($\alpha = .87$); Invisibility ($\alpha = .89$); and Environmental Invalidations ($\alpha = .81$) Cronbach $\alpha = .95$	No	No
Likert	1–5	32		No	No
Likert	1–4	32	Cronbach $\alpha = .95$ Invisibility ($\alpha = .89$); Criminality ($\alpha = .85$); Low-Achieving/Undesirable Culture ($\alpha = .87$); Sexualization ($\alpha = .83$); Foreigner/Not Belonging ($\alpha = .78$); Environmental Invalidations ($\alpha = .81$)	No	Yes – confirmed as a single factor scale – fit indices not reported
Likert	1–4	32	Invisibility (Cronbach $\alpha = .79$), criminality (Cronbach $\alpha = .87$, low-achieving/undesirable culture (Cronbach $\alpha = .88$), sexualization (Cronbach $\alpha = .76$), foreigner/not belonging (Cronbach $\alpha = .83$), and environmental invalidations (Cronbach $\alpha = .79$) Cronbach $\alpha = .92$	No	No
Likert	1–4	15		No	No
Likert	1–4	32	Criminality ($\alpha = .92$); Environmental Invalidations ($\alpha = .88$); Foreigner ($\alpha = .89$); Invisibility ($\alpha = .93$); Low-Achieving/Undesirable Culture ($\alpha = .94$); Sexualization ($\alpha = .88$) Cronbach $\alpha = .94$	No	No
Likert	1–4	32	Yes	No	No
Likert	1–4	32	Cronbach $\alpha = .95$	No	No
Likert	1–4	8	Cronbach $\alpha = .89$	No	No
Likert	1–4	32	Foreigner ($\alpha = .70$); Low-Achieving ($\alpha = .87$); Sexualization ($\alpha = .83$); Criminality ($\alpha = .85$); Invisibility ($\alpha = .89$); Environmental ($\alpha = .81$) Cronbach $\alpha = .95$	No	No
Likert	1–4	32		No	No

Table 2 (continued)

Type	Range	N. of Items	Reliability	Efa	Cfa
Likert	1-4	32	Cronbach $\alpha = .95$	No	No
Likert	1-6	20	DLE-F ($\alpha = .93$); DLE-B ($\alpha = .91$); DLE-R Total ($\alpha = .95$)	No	No
Likert	1-6	18	DLE-F ($\alpha = .93$); DLE-B ($\alpha = .91$); DLE-R Total ($\alpha = .95$)	No	No
Likert	1-6	14	Cronbach $\alpha = .95$	No	No
Likert	1-6	14	Cronbach $\alpha = .92$	No	No
Likert	1-6	14	Cronbach $\alpha = .92$	No	No
Likert	1-4	15	Cronbach $\alpha = .92$	No	No
Likert	1-5	14	Cronbach $\alpha = .91$	No	No
			Academic Inferiority ($\alpha = .87$); Expectations of Aggression Subscale ($\alpha = .80$); and Stereotypical Misrepresentations Subscale ($\alpha = .72$)		
Likert	1-4	7	Cronbach $\alpha = .93$	No	No
Likert	1-4	15	No	Yes -3 factor structure	Yes -3 factor structure confirmed - RMSEA = .05, CFI = .98, TLI = .97, SRMR = .027
Likert	1-3	7	Cronbach $\alpha = .88$	No	No
Ordinal	0-4	15	at Time 1 ($\alpha = .93$), at Time 2 ($\alpha = .93$), at Time 3 ($\alpha = .95$)	No	No
Likert	1-5	26	Cronbach $\alpha = .95$	No	No
			Assumptions of Beauty and Sexual Objectification ($\alpha = .92$); Silenced and Marginalized ($\alpha = .88$); Strong Black Woman Stereotype ($\alpha = .75$); Angry Black Woman Stereotype ($\alpha = .80$)		
	1-6	28	Cronbach $\alpha = .95$	No	No
Likert	1-4	28	Cronbach $\alpha = .95$	No	No
Ordinal	1-6	28	Cronbach $\alpha = .88$	No	No
Ordinal	1-6	28	Cronbach $\alpha = .88$	Yes	No
			Second class citizen and assumption of criminality ($\alpha = .89$); Assumption of Inferiority ($\alpha = .91$); Assumptions of similarity ($\alpha = .80$); Microinvalidations ($\alpha = .83$); Media Microaggressions ($\alpha = .81$)		
Likert	1-6	28	Yes	No	No

Table 2 (continued)

Type	Range	N. of Items	Reliability	Efa	Cfa
Ordinal	0–5	12	Cronbach $\alpha = .81$ Reliability for the composite scale ranged from acceptable to good across ethnic groups (Latinos $\alpha = .82$; Asian Americans $\alpha = .73$) and nativity status (foreign-born $\alpha = .87$; US-born $\alpha = .79$)	No	No
Likert	1–6	9	Emphasis on differences (3 items, $\alpha = .74$); Denial of ethnic reality (2 items, $\alpha = .78$); Negative treatment (4 items, $\alpha = .73$)	No	Yes – after the removal of 3 cross-loading items, RMSEA = .050, SRMR = .033, CFI = .964
Likert	1–6	12	Emphasis on differences (4 items; frequency $\alpha = .71$; reactivity $\alpha = .66$), Denial of racial reality (3 items; frequency ($\alpha = .71$) and reactivity ($\alpha = .76$), Negative treatment (5 items frequency ($\alpha = .71$); reactivity ($\alpha = .72$))	No	Yes – 3-factor structure confirmed CFI = .95, RMSEA = .05, No
Ordinal	1–6	12	Cronbach $\alpha = .81$	No	No
Likert	1–5	24	No	Yes	No
Likert	1–6	17	Color evasion ($\alpha = .92$); Power evasion ($\alpha = .96$)	No	No
Likert	1–6	34	Victim blaming ($\alpha = .93$); Color evasion ($\alpha = .94$); Power evasion ($\alpha = .94$); Exoticizing ($\alpha = .91$)	Yes – 4 factor structure	Yes – 4 factor structure confirmed—low fit parameters (CFI = .71, TLI = .73)
Likert	1–6	34	Victim blaming ($\alpha = .92$); Color evasion ($\alpha = .96$); Power evasion ($\alpha = .95$); Exoticizing ($\alpha = .94$)	No	Yes – inadequate goodness-of-fit indices—CFI = .88 / TLI = .87 / RMSEA = .09; 4 factors structure confirmed

Table 2 (continued)

Type	Range	N. of Items	Reliability	Efa	Cfa
Ordinal	1–5	30	Cronbach $\alpha = .92$ Scenario 1 $\alpha = .89$; Scenario 2 $\alpha = .70$; Scenario 3 $\alpha = .79$; Scenario 4 $\alpha = .76$; Scenario 5 $\alpha = .80$ Notice $\alpha = .634$, Interpret $\alpha = .638$, Accept $\alpha = .644$, Know $\alpha = .690$, Act $\alpha = .877$	no	No
Likert	1–4	26	No	No	Yes – 5 factors structure confirmed; CFI = .93; TLI = .92; RMSEA = .50; SRMR not reported; Yes – structure confirmed – CFI = .92, TLI = .91, RMSEA = .50
Likert	1–5	25	No	No	No
Likert	1–6	No	No	No	No
Dichotomous	0–1	20	No	No	No
Dichotomous	0–1	20	test–retest correlation of .71	No	No
Likert	1–5	22	Range $\alpha = .33/.87$	No	No
One dimensional instrument					
Scale					
Inventory of Microaggressions Against Black Individuals (IMABI)	Developed by	Designed for educational context	Reference	N. Of items	
The Microaggressions Distress Scale (MDS)	Mercer et al. (2011) Walters (2005)	No No	Mercer et al. (2011) O’Keefe and Greenfield (2019)	14 9 (out of 10)	
items from the Everyday Discrimination Scale	Williams et al. (1997)	No	De Coster & Thomson (2017)	6	
short version of the Microaggressions Distress Scale	Walters (2009)	No	Dickerson et al. (2019)	10	
Multigroup Everyday Racial Discrimination Scale (MERDS) by	Lui and Kamata (2024)	No	Lui and Kamata (2024)	28	
Immigration Status Microaggressions Scale	Barrita et al. (2024)	No	Barrita et al. (2024)	6	
no name of the scale (items were derived from—and part of the—the	–	No	Franklin (2019)	6	
Racial Battle Fatigue Scale (RBFS)					

Table 2 (continued)

One dimensional instrument					
Scale	Developed by	Designed for educational context	Reference	N. Of items	
-	-	No	Franklin et al. (2014)	6	
Racial Microaggression Stress	Items modified from the FIRES scale (Coleman & Stevenson, 2013)	No	Collins and Stevenson (2023)	8	
No name		No	Garibay and Mathis (2021)	5	
No name		No	Marconi et al. (2022)		
No name	-	No	Blume et al. (2012)	51	
One dimensional instrument					
Measure of	Type	Range	Reliability	Efa	Cfa
Occurrence/Frequency of experienced racial/ethnic microaggressions	Ordinal	0–4	Cronbach $\alpha = .94$	No	Yes – structure confirmed CFI = .99, TLI = .99, RMSEA = .05
Occurrence/Frequency of experienced racial/ethnic microaggressions	Dichotomous	0 = no; 1 = yes	No	No	No
Perception of truth of racial/ethnic microaggressions	Continuous	1–4	No	No	No
Occurrence/Frequency of experienced racial/ethnic microaggressions	Ordinal	-	Cronbach $\alpha = .80$	No	No
Occurrence/Frequency of experienced racial/ethnic microaggressions	Likert	1–4	No	Yes	Yes – structure confirmed CFI = .98, TLI = .971, RMSEA = .05, SRMR = .29
Occurrence/Frequency of experienced racial/ethnic microaggressions	Likert	1–4	Cronbach $\alpha = .91$	No	No
Occurrence/Frequency of experienced racial/ethnic microaggressions	Ordinal	1–5	No	No	Yes – structure confirmed – poor to adequate fit indices
Occurrence/Frequency of experienced racial/ethnic microaggressions	Ordinal	1–5	No	No	Yes – structure confirmed – adequate to good fit RMSEA = .07, CFI = .95, SRMR = .04
Perceived stress related to experiences of racial/ethnic microaggressions	Likert	1–4	Cronbach $\alpha = .86$	No	No

Table 2 (continued)

One dimensional instrument		Type		Range	Reliability	Efa	Cfa
Measure of					Cronbach	No	No
Occurrence/Frequency of experienced racial/ethnic microaggressions		Continuous		1–5	$\alpha = .84$	No	No
Witnessing and Experienced microaggressions		Categorical		1–3 (yes, no, unsure)	No	No	No
Experienced microaggressions		Categorical			No	No	No

interchangeably. This interchangeable use was particularly evident in tools that did not explicitly reference Sue's taxonomy but instead adopted broader or less clearly defined terminology. For instance, some studies categorized microaggressions under the broader umbrella of perceived discrimination, whereas others referred to subtle discrimination without specifying its relationship to microaggressive behavior. This variability in terminology reflects a lack of consensus in the operationalization of constructs related to racial/ethnic discrimination within educational settings.

Conversely, multidimensional measures varied in their identified dimensions and labeling of constructs, reflecting a lack of consensus in the operationalization of racial/ethnic microaggressions. Many measurement tools aligned closely with Sue et al. (2007) theoretical framework, capturing dimensions that directly corresponded to his taxonomy (Mekawi & Todd, 2018; Ong et al., 2013). However, other instruments adopted alternative conceptualizations, centering on thematic elements specific to the experiences of marginalized student groups. These alternative dimensions provided nuanced insights into the complex challenges faced by students from diverse backgrounds in educational settings, thereby extending Sue's (2010) taxonomy. Broadly, these dimensions can be grouped into three primary categories: Perceptions of Inferiority and Exclusion; Assumptions of Deviance and Threat; and Identity Invalidation.

As for the first, perceptions of inferiority and exclusion, several measures captured experience of being perceived less competent, deserving less or even devalued due to race/ethnicity. These include: the Assumptions of Inferiority subscale, which refers to those situations where students from non-dominant cultural groups are made to feel less capable or inherently lesser due to their ethnicity or race (Forrest-Bank et al., 2015; Keels et al., 2017; Lewis & Neville, 2015; Lewis et al., 2017; Nadal, 2011); the Second-Class Citizen subscale, which pertained to the subtle yet pervasive ways in which students from non-dominant cultural groups are treated as inferior or less deserving of opportunities and rights (Forrest-Bank et al., 2015; Nadal, 2011); the Low-Achieving/Undesirable Culture Subscale, which referred to students' perception of their ethnic/cultural heritage as inadequate, underperforming, or undesirable, and how often others perceived academic success as a result of affirmative action or as uncommon (Torres-Harding et al., 2012).

As for the category of Assumptions of deviance and threat, subscales included: Assumption of Criminality subscale, which was made to capture those insidious ways in which individuals from non-dominant cultural groups are unjustly perceived as inherently criminal or deviant due to their race or ethnicity (Forrest-Bank et al., 2015; Nadal, 2011; Torres-Harding et al., 2012); the Expectations of Aggression subscale, which captures phenomenon where students belonging to the non-dominant cultural groups are marginalized, and feared due to stereotypical attributions of aggressive behaviors by other students within education settings (Keels et al., 2017). Also dimensions of stereotypical representations of minoritized groups fell into the category of microinsult, such as the "Strong Black Woman Stereotype" and the "Angry Black Woman Stereotype" subscales of the Gendered Racial Microaggressions Scale (GRMS; Lewis & Neville, 2015) and the "stereotypical misrepresentation" subscale of the School Based Racial/Ethnic Microaggressions (SB-REMA; Keels et al., 2017). In general, all these dimensions were designed and used to capture the subtle, often unintentional behavioral and verbal remarks that express disrespect towards students

from cultural groups that are not dominant, aiming to subtly belittle, stereotype or otherize these individuals (Sue et al., 2007, 2010).

Many subscales focused on how racial/ethnic microaggressions dismiss, ignore, or deny a person's racial/ethnic identity. This category includes: the Invisibility Subscale (Keels et al., 2017; Lewis et al., 2017; Torres-Harding et al., 2012), which was intended to capture the subtle ways in which students of different ethnic and racial groups may feel unseen, ignored, or invalidated because of their ethnic/racial heritage as well as the extent to which they may feel marginalized or left out of discussions or events by others; the Sexualization And Exoticization Subscale, which refers to the objectification or reduction of students to stereotypical or hypersexualized images or roles (Nadal, 2011; Torres-Harding et al., 2012); and Not Belonging/Being Considered a Foreigner subscale, which measured students' experiences of being treated as a foreign citizen not belonging to that nation (Torres-Harding et al., 2012). In general, all these dimensions were made to reflect those verbal comments, or behaviors that marginalize, invalidate, or dismiss the psychological experiences and realities of students belonging to non-dominant cultural groups (Sue et al., 2010).

Environmental microaggressions have also been explored, as Sue (2007, 2010) originally proposed that systemic-level microaggressions contribute to racial disparities in educational settings. Instruments measuring this category examined how students perceived the underrepresentation of their racial/ethnic group in institutional settings, media representation, and positions of power (Torres-Harding et al., 2012). Examples of items capturing systemic and environmental levels forms of subtle discrimination were: "I observed people of my race in prominent positions (or roles) at my workplace or school"; "I observed people of my race portrayed positively in movies", and "I observed that someone of my race is a governmental official in my state" (Nadal, 2011) and "Where I work or go to school, I see few people of my racial background" (Torres-Harding et al., 2012), where negative responses to these items are interpreted as indicators of subtle environmental discrimination.

Whereas most of these dimensions directly reflect Sue's framework, some instruments expanded the concept of microaggressions by incorporating prejudicial and ideological attitudes. For instance, the Acceptability of Racial Microaggressions Scale (ARMS; Mekawi & Todd, 2018) introduced dimensions such as Victim Blaming (criticizing and pathologizing ethnic minorities on the basis of stereotypes) and Exoticizing (sexualizing and objectifying bodies of people from minoritized groups) which were considered specific forms of microinsult whereas Color Evasion (denying ethnic differences) and Power Evasion (statements that implies the denying of racism and disparities based on race/ethnicity) were considered forms of microinvalidation (Law et al., 2019; Mekawi & Todd, 2018).

Most measurement tools were developed to assess the frequency of the direct experiences of marginalized ethnic groups' students. In contrast, scales designed to assess attitudes or to rate the offensiveness of microaggressions have been limited to only a few cases (Harrell et al., 1997; Vaishnav & Wester, 2023). In these instances, participants were asked to indicate their likelihood of engaging in microaggressions across various contexts (Kanter et al., 2017), to evaluate how acceptable it is to make racial/ethnic microaggressive statements or to assess perceptions of how offensive they may be in others (Law et al., 2019; Mekawi & Todd, 2018). However, in these

cases, scales were designed not only to capture the perceptions and attitudes of students from minoritized cultural groups but also to incorporate the perspective of the dominant majority (Banks & Landau, 2019). Among measures, the Bystander Intervention Measure for Racial Microaggressions (BIM-RM), developed by Jenkins et al. (2024), was the only one that intended to measure bystander intervention in racial/ethnic microaggressions asking participants to report the frequency with which they reported engaging in the five step of the bystander intervention model proposed by Latané and Darley (1970), namely notice the event, interpret the event as needing intervention, accept responsibility, know how to intervene, and act. In addition to these, a research study specifically examined stress stemming from witnessing specific forms of microaggressions (Collins & Stevenson, 2023) utilizing items adapted from the FIRES scale (Coleman & Stevenson, 2013), thus unveiling how stressful it is for people with different ethnic/racial identities to witness – overt or covert—racist behaviors. However, whereas these measures – FIRES and BIM -RM—do not directly assess the frequency of experienced microaggressions, their inclusion in this Systematic Review reflects an effort to contextualize racial/ethnic microaggressions within broader racial dynamics, thus aligning with emerging research that considers microaggressions not only isolated incidents but part of a wider socio-cultural environment, influencing both individual stress responses and intervention behaviors.

2.3 Instruments' characteristics and psychometric properties

2.3.1 Number of items

The number of items in the different instruments varied according to the number of dimensions included. Among instruments with one dimension only ($n=11$), the item count spanned from 6 (De Coster & Thompson, 2017; Williams et al., 1997) to 51 (Blume et al., 2012). In contrast, for instruments reporting identifiable dimensions ($n=13$), the minimum number of items per dimension was three—as in the case of the “Foreigner/Not Belonging” subscale of the RMAS, the “Angry Black Woman Stereotype” subscale of the Gendered Racial Microaggressions Scale (GRMS) developed by Lewis and Neville (2015); and the “Denial of racial reality” subscale of the Ethnic Microaggression Scale (EMA), whereas the maximum number of items was 11, as in the cases of the “Assumptions of Beauty and Sexual Objectification” subscale of the GRMS, and the “Experience” and “Offensive” subscales in the study of Banks and Landau (2019).

Moreover, the number of subscales in these multidimensional measures ranged from two to six. For example, the Racial Microaggressions Scale (RMAS) includes three subscales (“Foreigner/Not Belonging”, “Criminality/Assumption of Dangerousness”, and “Low Achieving/Intelligence”), whereas the Gendered Racial Microaggressions Scale (GRMS) consists of six dimensions, including “Assumptions of Beauty and Sexual Objectification” and “Silencing and Marginalization.” This variability highlights the diverse conceptualizations of racial and ethnic microaggressions across different measures.

2.3.2 Instruments' reliability

Data on internal consistency were reported in 62 studies (74.7%). However, within these studies, Cronbach's alpha values consistently exceeded the threshold of .70 as recommended in the literature (Ratner, 2009), signifying satisfactory or high reliability of the employed instruments.

In the evaluation of reliability, two studies (Ong et al., 2013, 2017) provided test-retest correlations for the items. These correlations were assessed across weeks, revealing a week-to-week correlation of $r = .71$ for total microaggressions scale, with $r = .65$ for the microinsults, and $r = .69$ for microinvalidations' subscales, respectively, indicating robust reliability.

2.3.3 Instruments' validity

A total of eight out of 83 (9.64%) studies reported the structure resulting from the exploratory factor analyses (EFAs; Forrest-Bank et al., 2015; Franklin, 2019; Franklin et al., 2014; Keels et al., 2017; Kim et al., 2021; Lui & Kamata, 2024; Mekawi & Todd, 2018; Mercer et al., 2011), and 17 studies (20.48%) presented confirmatory factor analyses (CFAs; Berger et al., 2020; Bowen & Stewart, 2021; D'hont et al., 2023; Franklin, 2019; Franklin et al., 2014; Hernandez & Villodas, 2019, 2020; Huynh, 2012; Jenkins et al., 2024; Keels et al., 2017; Lui & Kamata, 2024; Marks et al., 2024; Mekawi & Todd, 2018; Mercer et al., 2011; Mujica et al., 2023; Sanchez et al., 2018).

Significantly, among those who conducted CFA, four studies were unable to corroborate the original factor structures of the instruments. This resulted in the adoption of a 1-factor structure, specifically computing a total scale score. This included the studies by Berger et al. (2020) and Hernandez and Villodas (2019, 2020), both utilizing the Racial Microaggressions Scale (RMAS; Torres-Harding et al., 2012), a 6-factor scale. In a similar manner, Durkee and colleagues (2021) were unable to confirm the original three-factorial structure of the SB-REMA (Keels et al., 2017), thus computing one-factor scale.

Additionally, Sanchez et al. (2018) and Su et al., (2020, 2022), employing the Racial and Ethnic Microaggressions Scale (REMS; Nadal, 2011), a six-dimensional scale, did not confirm the factorial structure. In particular, the "Environmental Microaggressions" subscale exhibited a negative correlation with the other five subscales. In such cases, authors calculated a total score for racial microaggressions by averaging scores across all subscales, excluding the environmental microaggressions subscale.

Despite demonstrating validity in adult populations, both the Racial and Ethnic Microaggression scale (REMS; Nadal, 2011) and the Racial Microaggressions Scale (RMAS; Torres-Harding et al., 2012) failed to confirm their initial dimensionality when applied to a younger population of students. Nevertheless, these two instruments constitute the most extensively utilized measures in the studies analyzed, with 26.0% employing REMS and 17.4% utilizing RMAS, respectively, even though they were not specifically designed for educational settings.

In contrast, the IMABI (Mercer et al., 2011), the MERDS (Lui & Kamata, 2024) scales emerged as the exclusive unidimensional measures validated through both EFA and CFA. Measures adapted from instruments assessing perceived racial discrimination, such as DLE (Salami et al., 2021; Vaishnav & Wester, 2023), and the Everyday Discrimination Scale (De Coster & Thomson, 2017), did not undergo formal validation. However, an exception was noted for items derived from the Racial Battle Fatigue Scale (RBFS) in Franklin's studies (2014, 2019), where both EFA and CFA affirmed that RBFS items were consistent with a measure that captures experiences of racial microaggressions.

The synthesis of the psychometric evidence reveals a significant 'validity gap' in the measurement of racial microaggressions within educational research. Whereas internal consistency is robust across nearly all identified instruments, the frequent failure of confirmatory factor analyses (CFAs) to replicate original factor structures—particularly for the REMS and RMAS—suggests that the dimensional boundaries of microaggressions are highly sensitive to sample characteristics and institutional contexts.

This trend indicates two primary psychometric weaknesses in the field: first, a lack of structural stability, where theoretical categories (e.g., microinsults vs. microinvalidations) overlap or collapse when applied to diverse student populations; and second, a deficit in discriminant validity, as many instruments struggle to statistically distinguish subtle microaggressions from broader experiences of general racial discrimination. For the field, this means that while current scales are reliable for detecting the *presence* of racial stress, their ability to precisely categorize the *type* of microaggressive encounter remains inconsistent. Consequently, future research should move beyond reporting Cronbach's alpha and prioritize the use of invariance testing and longitudinal CFA to ensure that these instruments maintain their structural integrity across different developmental and cultural stages.

2.4 Instruments developed for the educational context

Scales specifically designed for educational settings were a scant minority ($n=5$ out of 28; 17.86%). These assessment tools were developed with the aim of measuring a broad spectrum of microaggressions that students from diverse backgrounds may encounter, encompassing both racial/ethnic microaggressions that may manifest through interpersonal interactions, such as insults or verbal remarks, as well as racial/ethnic microaggressions present within the educational environment. The majority of these assessment instruments were developed by incorporating items derived from previously validated measures (i.e., the RMAS by Torres-Harding et al., 2012; the Schedule of Racist Events of Landrine & Klonoff, 1996) and studies (Nadal, 2011; Sue, 2010) involving adult populations, which were then adapted to fit the educational context. In a different case (Castellanos et al., 2018), for items and scale development, authors drew on existing literature on their actual experiences as students belonging to a specific ethnic group.

The *Racial Microaggressions in Higher Education Scale* was developed by Lewis et al. (2017) to evaluate three specific types of microaggressions that students from diverse cultural or ethnic backgrounds may encounter in formal educational settings.

The dimensions identified by the scale were derived from previous research on adult population and included: Invisibility Microaggressions (e.g., “I have felt excluded by others on this campus because of my race”), Microinsults (e.g., I have experienced someone making offensive jokes to me on this campus because of my race), and Intellectual Inferiority Microaggressions (e.g., “I have had my contributions minimized in the classroom because of my race”). Whereas three studies have employed this scale (Choi et al., 2017, 2021; Lewis et al., 2021), none has undertaken analyses to evaluate the validity or confirm the factorial structure of this scale, despite demonstrating its good reliability.

The *School-Based Racial/Ethnic Microaggressions* (SB-REMA) developed by Keels et al. (2017) used the original taxonomy of Sue et al. (2007), which categorized microaggressions into three distinct forms—microinsult, microassault, and microinvalidation—that were respectively reconceptualized as: Academic Inferiority, which measures experiences of academic discouragement; Expectations of Aggression, which measures perceptions of others acting as though they were scared; and Stereotypical Misrepresentations to reflect denial of racial/ethnic disparities, such as obstacles or being exoticized because of one’s race or ethnicity. The factorial structure of the scale was tested and validated across different demographic subgroups of college students. However, there is no research using the SB-REMA that confirms the factorial structure of the scale, as studies reported only internal reliability, or validates it on samples of younger students.

The scale developed by Lee et al. (2020) was designed to capture instances of racial/ethnic microaggressions across three distinct domains that reflect different aspects of students’ experiences: the campus environment in general, the academic settings, including interactions with instructors or advisors, and peer interactions. Also in this case, the psychometric validation of the instrument was not comprehensively examined in the study of Lee et al (2020).

From a different perspective, the *Racial Microaggressions on Christian Campuses* (RMCC) by Kim et al. (2021), a two-factor structure scale, measured RMCC-Misguided that reflects receiving misguided solutions related to racialized experiences and RMCC-Critical that reflects receiving criticism, exoticization, or minimization of racialized experiences. As for the psychometric properties of the RMCC, the study reported only exploratory factor analyses (EFA) results whereas also showing good reliability of the instrument.

The *Latino Male Undergraduates Educational Microaggressions Scale* by Castellanos et al. (2018) was specifically designed to capture racial/ethnic microaggressions within the university context that are rooted in group-specific stereotypes about individuals of Latin descent. The scale acknowledges the context- and culture- sensitive nature of the construct of racial/ethnic microaggressions, addressing a gap in existing scales that consider the unique educational experiences of this cultural group. More specifically, the measure reflected subtle assumptions and biases regarding self-value and capacities, social connections and values, such as cultural activities. The 25 items evaluated individuals’ encounters with racial/ethnic microaggressions and how these experiences affected their feelings of being/not being welcomed within educational settings. A sample item was “Someone Anglicizes your name (e.g., changes your name without your permission from Roberto to Robert or Bob”). As for the psycho-

metric properties of the scale, the study reported only the factorial structure of the tool, whereas didn't report its reliability.

3 Discussion

This systematic review included 83 studies and has identified 28 different measures used by scholars to assess racial/ethnic microaggressions in samples of students in formal educational settings. Almost half of the instruments were unidimensional (46.0%), while 54.0% were multidimensional. Overall, these instruments were designed to capture a range of subtle manifestations of racism targeting students from diverse nationalities and racial/ethnic backgrounds, spanning from over, deliberate actions to tiny, unconscious slights (Garcia & Johnston-Guerrero, 2015). Generally, the majority of the measures' dimensions fell into the two broader categories of microinsults and microinvalidations, with a few cases assessing microassaults and environmental slights, varying based on specific group-based themes and stereotypes about non-dominant cultural groups.

Whereas racial/ethnic microaggressions may be present in both school and university/college educational settings, research has not adequately focused on the experiences of students in lower grades. Most studies have primarily focused on college populations, overlooking the distinct experiences and developmental issues of younger students. This lack of representation highlights the significance of broadening research endeavors to encompass various age groups within educational environments, as students at the lower grades experience distinct developmental stages and challenges which differ significantly from those encountered by young adults in college or university (Stekeete et al., 2021).

Adolescents have been found to be more vulnerable to the negative effects of racial and ethnic discrimination on their identity development and mental health (Benner, 2017; Benner & Wang, 2017; Huynh & Fuligni, 2010) with longitudinal studies suggesting that early exposure to racism influence later health during students' life course (Benner et al., 2022; Cave et al., 2020; Yang, 2019). As a consequence, tackling racial/ethnic microaggressions at this stage could be crucial to define effective early interventions to address discrimination at its early stages, whereas also helping teachers and educators in recognizing and dismantling causes of disparities and discrimination within the educational environment (Midgette & Mulvey, 2024), as they play a critical role in the emotional, psychological and intellectual development of their students (Grütter et al., 2021).

A key pattern identified through studies, under review is the prevalence of measures developed within the U.S. context. Whereas early research on microaggressions and discrimination primarily centered on Asian American and Black/African American populations, recent studies have increasingly examined the experiences of other racial and ethnic minority groups, highlighting the diverse nature of microaggressions across educational settings. Specifically, the races/ ethnicities of the participants in the reviewed studies were: Black/African American, Hispanic/Latino(a), Asian, Asian American, American Indian, Native American, Alaska Native, Middle Eastern, and other or multiples races. Generally, authors referred to all these cultural/

ethnic groups as People of Color (POC) to be distinguished from those participants of White origin (Lui & Kamata, 2024).

This dominance of a U.S.-centric perspective raises concerns about the generalizability of findings to diverse cultural and geographical contexts. Indeed, different countries and cultures may hold their own specific biases and stereotypes about cultural groups that current measurement tools may overlook (Smith et al., 2011; Xiao et al., 2026).

Synthesizing international evidence from the reviewed literature, it becomes evident that how racial/ethnic microaggressions do not operate according to a monolithic, U.S.-centric template; rather, they function as context-specific mechanisms of social regulation that determine parameters of belonging and visibility.

In the Palestinian context, the etiology of microaggressions transcends a simple racial binary, emerging instead from the structural conditions of prolonged military occupation and ethno-national fragmentation. Berger et al. (2020) demonstrate how chronic psychological distress is exacerbated by ‘boundary-testing’ interactions, where everyday linguistic practices transform interpersonal encounters into sites of political erasure. Here, microaggressions act as ‘everyday reminders’ of systemic vulnerability.

Conversely, in the United Kingdom, the trigger for microaggressions is inextricably linked to the country’s colonial legacy and the racialized nuances of classed respectability. As Williams et al. (2016) argue, British Higher Education institutions often operate under a facade of post-racial progressivism, where overt institutional racism is replaced by covert exclusion. In these settings, microaggressions are frequently weaponized through the enforcement of British values and other seemingly neutral secular norms.

The Belgian case further de-centers the racial narrative by highlighting how visible Muslimness and linguistic background activate exclusionary responses. The research by D’hondt et al. (2023) suggests that microaggressions are not merely isolated insults but symbolic violence that steers life courses and regulates access to spaces historically reserved for the white, secular hegemony.

Across these diverse geopolitical landscapes, systemic racism exhibits a high degree of plasticity, masking itself within the discourses of neutrality, secularism, or meritocracy. This strategic ambiguity renders microaggressions particularly insidious, making them easier to deny and harder to name. Consequently, whereas the original taxonomy of Sue’s (2007) remains a vital descriptive baseline for identifying the *form* of these interactions (e.g., microinsults or microinvalidations), it is analytically insufficient to capture the macrostructures of political violence and the ‘coloniality of power’ that authorize these encounters.

The cultural specificity in the reviewed instruments might limit their effectiveness outside of North American context, thus highlighting the need for developing more suitable measures tailored to different cultural and national contexts. Expanding research on racial and ethnic microaggression in this way may be a crucial step towards establishing a situated taxonomical language that promotes a broader understanding of how microaggressions operate and their impact on targets (Williams et al., 2020, 2021). Such efforts could enhance cross-cultural dialogue and contribute to more effective strategies for addressing discrimination globally (Di Luigi, 2023).

Whereas Sue et al.'s taxonomy (2007, 2010) remains an important conceptual foundation in the field of racial/ethnic microaggression research, the present review highlights a significant divergence between this theoretical model and the empirical structures of the existing measurement tools. Although many instruments were inspired by Sue's tripartite classification –microinvalidation, microinsults, microassault– their operationalization often departs from this framework in both structure and content. It is crucial to distinguish between measures that empirically identify multiple factors through statistical analyses (e.g., factor analysis) and those that align with a theoretical framework, such as Sue's taxonomy of microaggressions (2007, 2010). Whereas a few tools incorporate subscales directly corresponding to Sue's categories, the majority identify dimensions through data-driven processes, resulting in varied labeling and inconsistent alignment with the original taxonomy. Moreover, despite the use of multidimensional item pools, psychometric analyses often reveal a strong first factor accounting for most of the variance, suggesting that these instruments may ultimately measure a single overarching perception of racial/ethnic microaggressions. This raises the possibility that, in real-world settings, the lived experience of microaggressions is not easily disentangled into discrete theoretical categories but instead operates as a largely unidimensional psychological construct. Such findings point to a potential mismatch between theoretical assumptions and how individuals perceive and internalize racial/ethnic microaggressions, warranting further investigation into both conceptual clarity and empirical validity in future research.

Future research should prioritize addressing critical psychometric gaps (Irawan et al., 2025). Indeed, whereas most instruments demonstrate acceptable internal consistency, construct validation procedures are rarely reported with questions remaining about the convergent and discriminant validity of the tools, especially in relation to other related constructs such as perceived discrimination. Moreover, a key direction lies in clarifying which aspects of Sue's taxonomy are most empirically supported and which may require refinement or expansion. Indeed, the focus of these tools was on delineating microinvalidation and microinsults, and occasionally microassaults. More specifically, they encompassed diverse themes and dimensions that demonstrated the multifaced and nuanced unique realities of different minoritized groups within their respective environments (Howell et al., 2024).

For instance, dimensions within these tools grasp the specific nature of racial and ethnic microaggressions, revealing the perpetuation of stereotypes and prejudices associated with students' ethnic/cultural membership, as in the case of Hispanics students' struggling with issue of immigrant status (Bonifacio et al., 2018; Davenport et al., 2021; Farber et al., 2021; Forrest-Bank & Jenson, 2015; Keels et al., 2017; Pinedo et al., 2021; Sanchez et al., 2018), African American students' facing stereotypes about aggressive behaviors, intelligence or criminality (Erving et al., 2022; Hollingsworth et al., 2017; Manns-James et al., 2021; Marks et al., 2021; McGee & Kruger, 2022; Robinson-Perez et al., 2020; Salami et al., 2021; Su et al., 2020, 2022). In addition to these, dimensions of racial and ethnic microaggressions were also able to grasp the unique perspective of stigmatized underrepresented groups such as Asian (Choi et al., 2017, 2021), Middle Eastern, white, Indigenous (Francois et al., 2023; Holter et al., 2023; Lewis et al., 2021) as well as biracial or multiracial students (Mekawi & Todd, 2018) based on those stereotypes that are rooted in social

attitudes and historical inequalities. These results echoed the importance of developing a unified language of microaggressions that may better allow for cross-cultural and broader understanding and quantitative measurement (Williams et al., 2021).

A key finding of this review is the necessity of a hierarchical understanding of microaggressions within the broader field of discrimination studies. We argue that ethnic microaggressions should be treated as the microlevel, interactional expression of subtle bias. Specifically, we propose a hierarchy where: (a) subtle prejudice acts as the attitudinal antecedent; (b) subtle discrimination represents the indirect behavior; and (c) microaggressions are the specific, everyday manifestations of such behavior.

Distinguishing these levels is crucial for educational research. A general measure of perceived discrimination may be too coarse to capture the campus-specific and interactional features that define the student experience. Conversely, scales targeting microaggressions must focus on brief and ambiguous slights from peers and faculty to maintain construct validity. As noted in recent literature, when measures are not conceptually distinct, they risk capturing general unfairness or non-ethnic stigma rather than the cumulative psychological toll of microaggressive experiences (Anglin & Lui, 2023; Wong et al., 2014).

Most of the assessment tools in the reviewed studies were not originally designed to grasp what happens in the educational settings. Rather, they underwent initial validation with an adult population before being adapted to measure racial/ethnic microaggressions with sample of students in educational contexts. It is possible that this adaptation process may have raised concerns about their suitability and reliability when used with younger students. Indeed, the use of adult-oriented instruments could have overlooked important nuances and developmental differences relevant to school-aged adolescents and young adults within college and universities, potentially limiting the accuracy of assessment within this specific population. In addition to these, using these instruments may also fail to consider contextual factors related to racial/ethnic microaggressions in an educational environment.

Assessment instruments specifically designed to measure racial/ethnic microaggressions in formal educational settings, such as schools or universities, represented a significant minority of the reviewed tools (i.e., 5 out of 28). Nevertheless, even when learning settings were the preferential context for measuring microaggressions, there appeared to be a deficiency in considering the developmental factors and dynamics involved in the experiences of subtle discrimination faced by younger students.

Assessing both environmental dynamics, including peer and student-teachers' relationships, as well as the developmental aspects involved in the phenomenon, is a crucial step toward effectively identifying those who are targeted by racial/ethnic microaggressions and determining appropriate interventions within schools and universities (Bowen & Stewart, 2021). In addition to this, many of these tools were not properly validated on younger samples of middle and high school students, focusing on college and universities' students.

Moreover, the time frames of the scales may not be appropriate for use in school settings, as noted by Bowen and Stewart (2021), as they might impose excessive cognitive demands to students of that age by asking students to report experiences of racial/ethnic microaggressions over the previous six months, without recognizing that significant changes take place over a shorter period of time.

As authors have made clear, the specificity of racial and ethnic microaggressions within the school ecology relies on the fact that these subtle slights often communicate derogatory messages about the importance of students' contributions, their capabilities or expected life outcomes (Allen et al., 2013).

In order to bridge these gaps, future research should take into account the following considerations. First, new measures should prioritize multidimensional designs over unidimensional ones. While total scores provide a general index of frequency, multidimensional structures are essential to distinguish between different types of indignities (e.g., microinsults vs. microinvalidations), which may yield distinct psychological and academic outcomes. Second, instruments must be developmentally appropriate for younger students. This involves not only simplifying language to avoid abstract jargon but also adjusting recall timeframes; for children and adolescents, asking about experiences over the past week or month is preferable to the six-month windows typical of adult scales, thereby reducing cognitive load and recall bias.

Furthermore, future tools should expand beyond target-based self-reports to include multi-informant and bystander perspectives. Incorporating teacher reports or observer-based scales, would allow researchers to capture the systemic nature of the school climate. By triangulating students' subjective experiences with teacher or peer perspectives, it becomes possible to identify not only the occurrence of microaggressions but also the institutional dynamics that sustain them. Therefore, it is essential that measurement tools are designed to examine properly the domain of the educational spaces, capturing environmental dynamics and peer to peer as well as teachers-students interactions.

By taking into consideration the unique dynamics of the educational settings it is possible to effectively comprehend how school and universities' ecologies may serve as a vehicle for racial/ethnic disparities, such as microaggressions, thus conveying socio-cultural messages that sustain culturally minoritized students' sense of inferiority and impact their overall well-being (Allen et al., 2013; Cokley, 2006). That is to say that the recognition of racial and ethnic microaggressions, stemming from broader institutional dynamics and everyday interactions (Gao, 2025; Smith et al., 2025), is a critical move toward addressing the underlying causes that lead students to feel unwelcome or personally diminished (Solórzano et al., 2000; Yosso et al., 2009) whereas it also contributes to creating an inclusive environment that respects diversity, nurtures a positive students' self-concept, and celebrates diverse ethnic heritages (Pérez Huber et al., 2021; Young & Anderson, 2018).

Before moving into the conclusions, we should acknowledge some limitations of the present study. Firstly, we included only quantitative peer-reviewed papers thus excluding grey literature and non-published works that possibly could have provided further insights into the progress of this field of research; secondly, by restricting our research to English and Italian written papers, we may have limited our results by not identifying relevant studies published in other languages. This oversight could mean overlooking significant information and scale development. Qualitative studies, in particular, could have provided a deeper understanding of the lived experiences of targets, whereas gray literature might have offered preliminary data on emerging assessment tools that have not yet reached formal publication. Future research

should integrate these sources to provide a more comprehensive foundation for tool development and refinement. Additionally, our review was confined to peer-reviewed research articles only, meaning that we could have missed important results in dissertations and other papers. Furthermore, limiting the search to specific databases and choosing specific search terms, we may also have missed out significant results. Lastly, we specifically focused on formal education settings, whereas excluding discriminatory dynamics within informal learning environments as well as other educational settings—thus downplaying their impact on the well-being and successful adaptation of students of underrepresented groups.

4 Conclusions

To conclude, this systematic review has sought to gain a more profound insight into the instruments used for assessing racial and ethnic microaggressions within formal educational environments. By doing this, it also provides a thoughtful exploration of students' samples demographics, including their ethnic background and generational status, whereas also uncovering theoretical foundations and psychometric properties. This provides valuable groundwork for researchers interested in measuring these covert forms of aggression or aiming to develop new assessment tools within this field.

According to measures, racial and ethnic microaggressions could be considered a multidimensional and intricate concept that encompass a spectrum of behaviors, ranging from overtly discriminatory acts to more subtle slights, whose effect varies according to context and recipient's perception (Sue, 2010). Whereas measurement tools have dealt with conceptual intricacy, there are limited scales designed to cater to the unique experiences of students from underrepresented backgrounds, particularly those who are in high schools and lower grades.

The overwhelming dominance of U.S.-based research, accounting for 95% of the reviewed studies, poses significant challenges for the global generalizability of microaggression theory. Most existing scales are built upon U.S. historical and socio-political dynamics, such as the Black-White racial binary or specific immigrant narratives like the 'model minority' myth. When these measures are exported to different cultural contexts, such as Europe or the Middle East, they often fail to capture the specific nuances of local minoritization processes rooted in religion, linguistic differences, or distinct colonial histories. This 'conceptual imposition' risks overlooking other forms of microaggressions that do not fit the U.S. taxonomic model.

To advance the field beyond this U.S.-centric focus, future cross-cultural research should prioritize qualitative grounding by conducting focus groups with local minoritized populations to identify culturally specific everyday slights that may be absent from U.S. instruments. Furthermore, a process of cultural decentering is essential; rather than relying on simple translation, researchers should utilize back-translation and cognitive interviewing to ensure the psychological equivalence of items across contexts. Contextual validity must also be addressed by accounting for local systemic factors, such as how microaggressions in European settings might be more closely tied to perceptions of secularism or national belonging than in the U.S. Finally, it is

imperative to rigorously test for psychometric invariance to guarantee that instruments function consistently across different cultural and ethnic groups in the new setting, thereby ensuring that the measurement of microaggressions remains robust and culturally sensitive.

Improving efforts toward the creation of ad-hoc tools to address the issue of racial and ethnic microaggressions in schools and universities is paramount. These instruments could be a prominent asset within this context, as they have the potential to not only enhance the understanding of the nuances of these phenomena, gaining a deeper insight into how they appear and sustain racism and discrimination, but also monitor their impact on students' well-being, school climate and welfare, and the broader learning community. It would suggest that with a better grasp of the difficulties experienced by students who are targets of racial and ethnic microaggressions, teachers and educators could more properly define effective strategies to prevent or address the consequences of a hostile environment (Howarth & Andreouli, 2015). In addition, this would assist policymakers in tackling the root causes of microaggressions within learning environments in order to eradicate the stereotypes and prejudices that sustain systemic racism and prioritize the creation of a culture of inclusivity where all students are valued and have equal opportunities.

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Declarations

Conflict of interest We have no known conflict interest to disclose.

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