Do Dysfunctional Attitudes Mediate or Moderate the Association Between Everyday Discrimination and Symptoms of Depression in Adolescents?

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Research Article

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Abstract

We aimed to integrate perceived everyday discrimination into Beck's cognitive model of depression. Participants included 339 adolescents (M = 14.19, 38.9% female), their majority identified as Black or White. Adolescents completed self-report instruments measuring perceived everyday discrimination, dysfunctional attitudes, and depressive symptoms. Our findings indicated a significant interaction effect between perceived everyday discrimination and dysfunctional attitudes on depressive symptoms. The analysis indicated no mediation effect of dysfunctional attitudes as the indirect effect was nonsignificant. If replicated, our findings highlight the importance of clinicians promoting social change to reduce discrimination and them supporting their clients by validating the unfairness of discrimination, help them to mitigate the negative effects of discrimination, and prepare them to cope with the potential of future discrimination.

Introduction

Depression is one of the leading diagnoses affecting adolescents today, with symptoms and prevalence increasing with age in the population [1-3]. Depressive symptoms can have a negative impact on an adolescent's life [4], increasing the importance of understanding and evaluating factors that affect depressive symptoms in adolescents. Beck's [5] theory of depression is a widely used approach to understand and evaluate factors that affect depressive symptoms. In this theory, Beck purposes that individuals with dysfunctional attitudes (chronic negative beliefs and attitudes that are perfectionistic and self-critical) are predisposed to experiencing depressive symptoms when exposed to stressors [5, 6]. One stressor that has been found to impact depressive symptoms is everyday discrimination [7, 8], which is interpersonal discrimination that is either chronic or episodic and includes indignities, micro-aggressions, and disrespectful and inequitable treatment [9-11]. While Beck [5] suggests dysfunctional attitudes serve as a mediator that is activated by repeatedly experiencing a stressor, a possibility arises that dysfunctional attitudes may better be understood as a moderator in that interacts with everyday discrimination and affects the strength of the relationship between everyday discrimination and depressive symptoms [12-14]. However, research examining dysfunctional attitudes as a moderator is mixed [15, 16]. Given these mixed findings, we seek to determine if dysfunctional attitudes mediate or moderate the relationship between everyday discrimination and depressive symptoms. Understanding the impacts of everyday discrimination, and the role of dysfunctional attitudes, on adolescent depressive symptoms could be helpful in prevention and treatment of depressive symptoms in adolescents.

Depressive Symptoms In Adolescents

At the present time, depression is one of the most prevalent mental health diagnoses affecting adolescents [1, 2], with studies showing 13.3% of all adolescents between the ages of 12–17 years experiencing symptoms consistent with a depressive episode [3]. While the prevalence of adolescents experiencing depressive symptoms is concerning in and of itself, there has been an increase in the
prevalence of depressive symptoms over the past two decades [1, 17, 18]. Even when adolescents report depressive symptoms at a level below the clinical threshold for diagnosis of Major Depressive Disorder, they have a decreased quality of life (19) and experience impairments in functioning [20, 21]. Based on these findings, it is important to look at factors that affect depressive symptoms in adolescence, and not just diagnosable depression. Once present, depressive symptoms often negatively impact several areas of an adolescent’s life, including a decrease in overall functioning in day-to-day life in areas such as academic functioning, self-care, and social interactions [4, 22] and often adolescents with depressive symptoms display more violent or aggressive behavior [4]. Additionally, research has found that adolescents who experience depressive symptoms are at a greater risk of suicide than those who do not report depressive symptoms [20, 23].

Prevalence of depressive symptoms have been found to vary across different groups, with individuals who identify as belonging to a minority group (related to ethnicity, gender, race, and sexual orientation, among other factors) reporting higher rates than those who do not belong to minority groups [24, 25]. While some studies have found little difference in depressive symptoms rates among Black, Hispanic, and White adolescents [2], other studies report that Black adolescents are at increased risk of chronic depressive symptoms [26] and Black and Hispanic adolescents are more likely to experience depressive symptoms that persistent into adulthood [27, 28]. Additionally, adolescents who identify as belonging to other minority groups, such as LGBT, are found to experience higher depression rates than adolescents who do not identify as LGBT [29, 30]. Given the elevated prevalence of depressive symptoms in adolescents belonging to minority groups, it is relevant to examine how different stressors, such as everyday discrimination, and vulnerabilities impact depressive symptoms. This is particularly true as it could also be helpful in prevention and treatment of depressive symptoms in minority adolescents.

**Beck’s Cognitive Theory Of Depression**

According to cognitive models of depression, depressive symptoms result from maladaptive, faulty, or irrational cognitions [5, 31–33] and have explained the development and maintenance of depressive symptoms in adolescents well [34]. In his theory, one of the most widely-accepted cognitive vulnerability-stress models of depression [32, 33, 35, 36], Beck [5] emphasizes the role negative environmental influences (stressors) play in activating cognitive factors (vulnerability), which then lead to depressive symptoms in adolescents [37]. One cognitive vulnerability proposed by Beck is dysfunctional attitudes, which involve themes of loss, inadequacy, failure, and worthlessness [5, 33]. Consistent with Beck’s cognitive vulnerability-stress models [5, 6, 38] authors of several empirical studies demonstrate that dysfunctional attitudes serve as mediators in the relationship between stressors and depressive symptoms in children and adolescents to age 15 years [39–41].

However, contrary to Beck’s model [5] and the above mentioned studies with children and adolescents 15 years and younger [39–41] other authors found that dysfunctional attitudes act as moderator and not as mediator in late adolescents and adults [13, 15]. Joiner et al. [13] found in a sample of college students
that dysfunctional attitudes do not mediate the association between the stressor (midterm grade) and depressive symptoms, but they actually interacted with the stressor and affected the strengths of the association between stressor and depressive symptoms. Similarly, Kuiper et al. [15] found that dysfunctional attitudes moderate the relation of microstresses on dysphoria in an adult sample, though did not moderate the relationship between microstresses and other depressive symptoms. These studies show some inconsistency in the role of dysfunctional attitudes between a stressor and depressive symptoms, with a notable difference in studies being the age of the population.

To help explain the inconsistent findings of the role of dysfunctional attitudes, Turner and Cole [16] hypothesized a shift of cognitive vulnerabilities from mediation to moderation during the transition from later childhood to early adolescence and tested this hypothesis. In other words, they suggest that while stressors lead to the development of cognitive vulnerabilities which then further relate to depressive symptoms in childhood (mediation), during adolescence cognitive vulnerabilities that have already formed interact with stressors (moderation) to predict depressive symptoms. Though examining their hypothesis, Turner and Cole did not measure dysfunctional attitudes specifically, they measured cognitive vulnerability, which included attributional style and cognitive errors. Their findings supported their hypothesis that the moderation model of cognitive vulnerabilities was a better fit for some stressors and cognitions than others [16]. Turner and Cole recommended further investigation into different cognitive vulnerabilities and stressors, which would allow us to understand if and when the shift from mediation to moderation takes place with multiple cognitive vulnerabilities. Following the recommendation of Turner and Cole [16] and building on the previously outlined research [13, 15, 16] in this study we examine whether dysfunctional attitudes, as specific cognitive vulnerability, serve as mediator or moderator in the relationship between an adolescent's experience of everyday discrimination and depressive symptoms.

**Everyday Discrimination**

Discrimination is the unjust or prejudicial treatment of people based on identity or group membership (such as, but not limited to, age, ethnicity, gender, race, religious affiliation, and sexual orientation) and can be perpetuated on an individual, institutional, or systemic level. Everyday discrimination, which constitutes one form of discrimination an individual may experience, operates on an individual, person-to-person level, reinforced through the systems of oppression that are already in place and constitutes of recurring indignities, micro-aggressions, harassment, and disrespectful and inequitable treatment an individual experiences [9–11, 43]. Further, everyday discrimination is a frequent occurrence for individuals who belong to a minority group [8]. Perceived discrimination has been found to differ from other measures of discrimination due to its basis on one's personal recognition and self-report of the discrimination occurring [25]. Defining everyday discrimination as an individual's subjective experience, and measuring their perceived experience of everyday discrimination, is helpful to account for the many types and impacts of discrimination an individual may experience based on any characteristic, identity, or minority group status.
Discrimination in any form has been found to worsening depressive symptoms [7, 8]. Individuals belonging to a minority group, regardless of the minority group the individual identifies with, who experience any form of discrimination have been found to have higher rates of depression than those not belonging to a minority population [24, 25, 30]. Adolescents have been found to experience an increased level of discrimination compared to children [43–45] and may be especially vulnerable to the negative effects of that experience [43, 46, 47]. During adolescence an individual explores their own identity, seeks to increase social connection and relatedness, and may become more sensitive to criticism, judgment, and discrimination [43, 46, 47]. As adolescents develop their identity related to ethnic, gender, and sexual identity, they may experience increased discrimination due to being more identifiable by the majority group as fitting within an oppressed minority group [48–52]. This increased experience of discrimination has been found to be a stressor that can be harmful to mental health [8]. Adolescents who report experiencing everyday discrimination have been found to have increased depressive symptoms [53]. Based on these findings, it is clear that experiencing everyday discrimination is a stressor that has been linked to increased depressive symptoms, with adolescents being especially negatively impacted by the experience of everyday discrimination [30, 44, 46, 47].

**Purpose Of The Present Study**

The goal of our study is to integrate perceived everyday discrimination into Beck's cognitive model of depression [5]. By doing this, we hope to explain the relationship between everyday discrimination and depressive symptoms in adolescents by investigating the role of dysfunctional attitudes in this association in adolescents. The integration of everyday discrimination into the model is of significance as perceived everyday discrimination has been found to be a specific stressor associated with an increase of depressive symptoms [7, 8, 53–55]. Despite the link between perceived everyday discrimination to depressive symptoms, no studies to date have examined the specific role dysfunctional attitudes plays in the relationship between perceived everyday discrimination and depressive symptoms in adolescents.

In line with Beck's cognitive vulnerability-stress model [5, 6, 38], we would expect dysfunctional attitudes to serve as a mediator between perceived everyday discrimination and depressive symptoms. However, based on previous research, the role of dysfunctional attitudes seems to be dependent on age, with a shift in adolescence from mediation to moderation [16]. In line with Beck's theory, empirical research with children and adolescents 15 years and younger has supported the mediating effect of dysfunctional attitudes [39–41]. However, research with older adolescents and adults provides evidence that dysfunctional attitudes do not always act as a mediator. Specifically, some findings suggest that the role of dysfunctional attitudes is a moderator between a stressor and depressive symptoms in adolescence [13, 15, 16]. As such, we hypothesize that dysfunctional attitudes will moderate and not mediate the relationship between everyday discrimination and depressive symptoms due to the age of our study sample.
Method

Participants

Participants for this study were sampled from a public high school in a Southern U.S. city before the COVID-19 epidemic. According to U.S. News, 59% of students at this high school are members of underrepresented racial and ethnic groups and 73% of students are economically disadvantaged. With a graduation rate of 72%, this high school has a lower graduation rate than surrounding high schools (BLINDED FOR REVIEW). There was a total of 339 participants, ranging in age from 13 to 16 years of age ($M = 14.19$, $SD = .54$). For this sample, 204 (60.2%) of participants identified as male, 132 (38.9%) identified as female, and 3 (0.9%) did not report a gender. The racial breakdown for participants was as follows: 157 (46.3%) identified as Black, 118 (34.8%) identified as White, 44 (13.0%) identified as Mixed Race, 8 (2.4%) identified as Other, 2 (0.6%) identified as Native American, and 1 (0.3%) identified as Asian/Pacific Islander. Ethnically, 6 (1.8%) of participants identified as Hispanic, 198 (98.2%) identified as non-Hispanic.

Measures

Everyday Discrimination Scale

The Everyday Discrimination Scale (EDS, 42) measures aspects of interpersonal discrimination that are chronic or episodic in the everyday life of the individual. On this scale, adolescents reported how often situations of discrimination, such as being treated with less respect, being called names or insulted, or being threatened or harassed, happened to them in their day-to-day life. The responses are on a 6-point Likert-type response format for each of 9 questions, with responses of “1” indicating almost every day to “6” indicating never. The scale includes questions such as “In your day-to-day life, how often (are)... You are treated with less respect than other people are?” The sum score range for the EDS is from 9 to 54, and each item is reverse scored, with higher overall scores indicate higher reports of perceived everyday discrimination. A study using a sample of Black adolescents found an internal consistency for the measure of .87 [56]. In their study with white, Black, and Biracial adolescents, Goosby et al. [57] also obtained a good internal consistency ($\alpha = .90$) for the measure. The internal consistency of the measure for this study was good ($\alpha = .82$) based on criteria outlined by George and Mallery [58].

Dysfunctional Attitude Scale-Short Form (DAS-SF)

The Dysfunctional Attitude Scale-Short Form (DAS-SF) is a self-report measure of the of dysfunctional attitudes experienced by the youth with 9 items taken from the original Dysfunctional Attitudes Scale [59]. Responses are on a 5-point Likert scale (1 = totally agree to 5 = totally disagree), and include statements such as, “I should be happy all the time.” Once completed, items are reverse coded and summed. Scores range from 9 to 45, with higher scores on the scale representing greater levels of maladaptive thinking being endorsed. When administered to adolescents, the internal consistency of the DAS-SF ranges
between \( \alpha = .61; 60 \) and \( \alpha = .88 \) [61]. The internal consistency of the measure for this study was within that range and acceptable (\( \alpha = .74, 58 \)).

**Center for Epidemiological Studies - Depression Scale**

The Center for Epidemiological Studies Depression Scale (CES-D, 62) is a 20-item self-report measure of depressive symptoms for use in the general population, with an age range of 13 and older. On the CES-D, adolescents rate how often over the past week they experienced symptoms such as crying spells, poor appetite, and feeling lonely. Responses are on a 4-point Likert scale for each item (0 = *Rarely or None of the Time*, 1 = *Some or Little of the Time*, 2 = *Moderately or Much of the Time*, 3 = *Most or Almost All the Time*), and include questions such as “I felt sad” and “I thought my life had been a failure.” Items are summed, with items 4, 8, 12, and 16 needing to be reversely coded, and total scores range from 0 to 60. Higher scores indicate greater endorsement of depressive symptoms. Hale et al. [63] found in their study with Black and White adolescent females a good internal consistency (\( \alpha = .89 \)). The internal consistency of the measure for this study was good (\( \alpha = .83, 58 \)).

**Procedure**

Our study received approval from the Institutional Review Board of the BLINDED University and the public high school in which the study was conducted. Consent was received from parents of adolescents and each adolescent participant provided assent. Adolescents were administered questionnaires in group settings during regular school hours. Administration was monitored by researchers to ensure each adolescent completed questionnaires individually and to answer any questions or provide clarity related to questionnaire content. Questionnaires were read aloud to any adolescent who had difficulty with reading. If an adolescent was missing on the initial day of administration, additional make up days to complete the questionnaire were available to reduce the amount of missing data. Adolescents were not provided with incentives to participate in the study.

**Data Analysis**

Prior to conducting analysis, data was inspected for missing responses, outliers, and to ensure the assumptions for regression analysis were met, including homoscedasticity, multicollinearity, and normality. Missing data were analyzed for completion of measures by participants and for randomness of missing data. Participants needed to complete at least 75% of items in order to be included in the study, as a tolerance level of 75% for completion is considered acceptable [64]. Item-level missing data was examined, and Little’s Missing Completely at Random test was conducted. Missing data was identified to be low at 5.9%. Little’s MCAR indicated data were missing completely at random (\( \chi^2 = 2515.96, df = 2482, p = .31 \)). Overall, the assumptions for regression analysis were met with the exception of normality for CES-D, which was found to have a positive skew (1.20) and kurtosis (1.07). As a result, a Box Cox transformation [65] was conducted with the resulting skew and kurtosis being considered normal (0.01 and 0.11, respectively).
To test the mediation and moderation models, analyses were conducted using the PROCESS tool for SPSS version 27 [66]. To test if dysfunctional attitudes (DAS-SF scores) mediate the relationship between perceived everyday discrimination (EDS scores) and depressive symptoms (CES-D scores), results were evaluated to determine if the indirect pathway, or the effect of EDS scores on CES-D scores through DAS-SF scores, is significant [67]. The significance of this indirect effect was tested using bootstrapping procedures. Unstandardized indirect effects were computed for each of 5,000 bootstrapped samples, and the 95% confidence interval was computed by determining the indirect effects at the 2.5th and 97.5th percentiles. To test our hypothesis that dysfunctional attitudes are a moderator, the effect of the interaction of EDS scores and DAS-SF scores on CES-D scores was evaluated for significance. A moderation effect is noted to occur when the interaction of EDS scores and DAS-SF scores is significant.

Results

The means, standard deviations, and internal consistencies of and intercorrelations between all study measures are presented in Table 1. When examining correlations, the predictor variables DAS-SF scores were not significantly correlated with EDS nor CES-D scores. The predictor EDS scores was found to have a significant positive correlation with CES-D scores.

<table>
<thead>
<tr>
<th></th>
<th>EDS</th>
<th>DAS-SF</th>
<th>CES-D</th>
<th>M</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDS</td>
<td>.82</td>
<td>.02</td>
<td>.48*</td>
<td>23.08</td>
<td>12.19</td>
<td>0.56</td>
<td>-0.65</td>
</tr>
<tr>
<td>DAS-SF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CES-D</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Numbers in the diagonal represent Cronbach’s alphas. EDS = Everyday Discrimination Scale, DAS-SF = Dysfunctional Attitude Scale-Short Form, CES-D = Center for Epidemiological Studies – Depression Scale. * p < .05

The hypothesized mediation model was tested using the PROCESS tool to determine if DAS-SF scores mediate the relationship between EDS scores and CES-D scores. As illustrated in Fig. 1, the regression of EDS scores on CES-D scores, ignoring the mediator, was significant. However, neither the regression of EDS scores on DAS-SF scores nor the effect of DAS-SF scores on CES-D scores, controlling for EDS scores, were significant. The results total effects, direct effects, and indirect effects of the mediation analysis are reported in Table 2. The direct and the total effect of EDS scores on CES-D scores were found to be significant. Consistent with our hypothesis, the indirect effect from EDS scores to CES-D scores through DAS-SF scores was found to be nonsignificant. In other words, dysfunctional attitudes do not act as a mediator in the relationship between perceived everyday discrimination and depressive symptoms in our sample of adolescents.
Table 2
Total, Direct, and Indirect Effects and Confidence Intervals Testing Mediation

<table>
<thead>
<tr>
<th>Variable</th>
<th>Effect</th>
<th>SE</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Effects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDS-CES-D</td>
<td>.57*</td>
<td>.06</td>
<td>[.45, .69]</td>
</tr>
<tr>
<td>Direct Effects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDS-CES-D</td>
<td>.57*</td>
<td>.06</td>
<td>[.45, .69]</td>
</tr>
<tr>
<td>Indirect Effects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDS to CES-D through DAS-SF</td>
<td>.00</td>
<td>.00</td>
<td>[-.01, .01]</td>
</tr>
</tbody>
</table>

Note. EDS = Everyday Discrimination Scale, DAS-SF = Dysfunctional Attitude Scale-Short Form, CES-D = Center for Epidemiological Studies – Depression Scale. * p < .05

To test the moderation hypothesis a regression analysis including the main and interaction effects of EDS scores and DAS-SF scores on CES-D scores was conducted using PROCESS (Table 3). Both the main effects of the EDS scores and DAS-SF scores were significant predictors of CES-D scores. Consistent with our hypothesis, the interaction of EDS scores and DAS-SF scores was significant as well. As illustrated in Fig. 2, those who scored low on the EDS scale tend to have low scores on the CES-D, regardless of the scores on the DAS-SF. Those who report high EDS scores, though low scores on the DAS-SF, have similar scores on the CES-D. However, those who have high scores on the EDS and high scores on the DAS-SF have visibly higher scores on the CES-D than any other group. This indicates that when an individual experiences high levels of perceived everyday discrimination and high levels of dysfunctional attitudes, they experience higher depressive symptoms than any other group.

Table 3
Moderation Analysis: Interactions of PED and Dysfunctional Attitudes (N = 286)

<table>
<thead>
<tr>
<th>Unstandardized Coefficient (β)</th>
<th>SE</th>
<th>t</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDS</td>
<td>1.16*</td>
<td>0.24</td>
<td>4.75</td>
</tr>
<tr>
<td>DAS-SF</td>
<td>.07*</td>
<td>0.03</td>
<td>2.32</td>
</tr>
<tr>
<td>EDSxDAS-SF</td>
<td>-.03*</td>
<td>0.01</td>
<td>-2.48</td>
</tr>
</tbody>
</table>

Note. EDS = Everyday Discrimination Scale, DAS-SF = Dysfunctional Attitude Scale-Short Form, CES-D = Center for Epidemiological Studies – Depression Scale, EDSxDAS-SF = Interaction of Everyday Discrimination Scale and Dysfunctional Attitudes Scale-Short Form. * p < .05

Discussion

Previous research regarding the role of dysfunctional attitudes in the relationship between a stressor and depression in adolescents have been mixed. A considerable amount of research indicates that
dysfunctional attitudes serve as a mediator between different types of stressors and depressive symptoms [39–41]. However, other researchers have found support for dysfunctional attitudes serving as a moderator between a stressor and depressive symptoms [13, 15, 16]. The purpose of our study was to integrate perceived everyday discrimination, as a specific stressor, into Beck’s cognitive model of depression [5] and evaluate the role of dysfunctional attitudes in the relationship with depressive symptoms in adolescents. Specifically, we examined if dysfunctional attitudes served as a mediator or a moderator in this relationship.

Consistent with our hypotheses, we found that dysfunctional attitudes moderate and not mediate the relationship between perceived everyday discrimination and depressive symptoms. Mediation was not found for this age group of adolescents as perceived everyday discrimination directly impacts depressive symptoms, though did not impact dysfunctional attitudes. However, supporting moderation, having dysfunctional attitudes in the presence of perceived everyday discrimination does impact the strength and direction of the association between perceived everyday discrimination and depressive symptoms. Perceived everyday discrimination and dysfunctional attitudes both are independently and positively associated with depressive symptoms. In addition, dysfunctional attitudes moderate the association between perceived everyday discrimination and depressive symptoms. In a way that when adolescents report perceived everyday discrimination and hold dysfunctional attitudes, they experience higher depressive symptoms than if they report neither or only perceived everyday discrimination or dysfunctional attitudes.

**Strengths And Limitations**

There are several strengths in our study. One strength is that we recruited our sample from an inner-city high school, in a historically marginalized area of the United States with a majority of the adolescents belonging to multiple marginalized groups including low SES and racial minority groups (46.3% Black and 13.0% Mixed). Given that depression is one of the most prevalent mental health problems affecting adolescents [1, 2] and that adolescents belonging to marginalized groups experience higher rates of depression than their peers not belonging to marginalized groups [24, 25] this group memberships are important to help understand the relationship of perceived everyday discrimination and dysfunctional attitudes with depressive symptoms as previous studies were conducted with youth that mainly belonged to the majority in their respective country [13, 16, 39, 40].

A second strength of our study is the use of the EDS [42] to measure perceived everyday discrimination. The EDS measures aspects of interpersonal discrimination based on one or more aspects of identity. Thus, this measure can be used with adolescents who belong to one or more marginalized groups and experience perceived everyday discrimination. Therefore, our results may be generalizable to a wide range of adolescents who experience perceived everyday discrimination. According to previous research, adolescents belonging to any marginalized groups may experience discrimination [48–52], which means measuring perceived everyday discrimination due to any marginalized group membership is crucial.
However, our study has limitations that need be considered. First, we applied a cross-sectional design, meaning that no causal inferences can be drawn [68]. Therefore, future longitudinal or even better experimental studies are necessary to allow for the examination of causal models of the relation between perceived everyday discrimination, dysfunctional attitudes, and depressive symptoms in adolescence. Second, we exclusively used self-report measures which can lead to an overestimation of the relation between the examined variables. This so called monomethod bias is caused by the covariance of an individual’s scores on similar types of measures [69]. Thus, authors of future studies might want to consider using information from multiple sources, including clinicians, parents, or teachers, as information obtained from multiple raters often varies in meaningful and informative ways [70]. Third, our findings are based on a sample which roughly half self-identified as Black/African America and half as White/European American. Thus, it is possible that the associations we found may not generalize to adolescents of other racial or ethnic groups.

Conclusions

Our findings further support the importance of perceived everyday discrimination for the mental health of adolescents in general and how it can be integrated into Beck’s [5] cognitive theory of depression, one of the most widely accepted approaches to understand and evaluate factors that affect depressive symptoms. To be more precise, following Turner and Cole’s [16] call to investigation different cognitive vulnerabilities and stressors to understand if and when those cognitive vulnerabilities shift from being mediators to moderators, we investigate the role of dysfunctional attitudes in the relationship between perceived everyday discrimination and depressive symptoms in adolescents in the age range from 13 to 16 years. As we predicted, dysfunctional attitudes already serve as moderators in this age group. This can be interpreted as evidence that the cognitive vulnerability of dysfunctional attitudes has already formed and now interacts with the stressor perceived everyday discrimination to predict depressive symptoms [16].

Our findings need to be replicated in longitudinal or maybe even experimental studies using information from multiple sources (e.g., clinicians, parents, teachers) including adolescents with a wide range of identities. Nevertheless, our findings highlight the importance to address discrimination. No adolescent should have to experience unfair or disrespectful treatment based on their identity. Therefore, many ethics codes compel clinicians to serve as advocates for their clients and to do so they are asked to promote social justice [e.g., see [71]. The American Psychological Association Working Group on Stress and Health Disparities [27] discusses multiple programs designed to reduce discrimination, the positive effects of such programs, moderators of the effects (e.g., degree an institution in which a program is implemented is committed to diversity, personality characters), and some unintended side effects of such programs. It is likely that it will take time to accomplish real societal change and many adolescents are negatively impacted by discrimination [72]. Thus, while working on societal change, clinicians need to support their clients by validating the unfairness of discrimination, help them to mitigate the negative effects of discrimination, and prepare them to cope with the potential of future discrimination as perceived everyday discrimination is by definition ongoing and perpetual [73].
Summary

The present study aimed to investigate if dysfunctional attitudes (DA) were a mediator or a moderator when perceived everyday discrimination (PED) is integrated into Beck's cognitive model of depression. Due to mixed results in prior research regarding the role of DA we hypothesized that DA would moderate the interaction between PED and depressive symptoms and not mediate the relationship. Participants included 339 adolescents ($M = 14.19$, 38.9% female) from a public high school in a Southern U.S. city. Participants identified as Black or African American (46.3%), White or European American (34.8%), Latino/Hispanic (1.8%), Native American (0.6%), Asian or Pacific Islander (0.3%), Mixed Race (13.0%), and Other (2.4%). Participants completed measures examining PED, DA, and depressive symptoms. Mediation and moderation models were tested using the PROCESS tool for SPSS version 27 and findings indicated a significant interaction effect between PED and DA on depressive symptoms. The analysis indicated no mediation effect of DA as the direct effect was significant and the indirect effect was nonsignificant. Results confirmed our hypothesis that when PED is integrated into Beck's cognitive theory of depression DA act as a moderator in the interaction between PED and depressive symptoms in adolescents. Based on these findings and the prevalence of depressive symptoms in adolescents belonging to minority groups, it is relevant to continue investigating how different vulnerabilities and stressors impact depressive symptoms as understanding factors that impact depression can be helpful for psychologists in prevention and treatment depressive symptoms in minority adolescents.

Declarations

Ethical Approval

All procedures performed in this study were in accordance with the ethical standards of the institutional committee (University of BLINDED IRB; DRMS: 15.0318) and school system (BLINDED Public Schools Department for Accountability, Research, and Systems Improvement), and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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Authors’ Contributions

S.P. calculated the conducted all statistical analyses and wrote the first draft of the manuscript. P.P. oversaw the data collection and reviewed the manuscript. Both S.P. and P.P. reviewed the final manuscript.

Acknowledgements

The authors have no conflicts of interest to declare.

References


**Figures**

![Figure 1](image-url)
Mediation Model Unstandardized Regression Coefficients for the Relationship of Everyday Discrimination on Depressive Symptoms as Mediated by Dysfunctional Attitudes.

Note. *p < .05

Figure 2

Interaction of Everyday Discrimination and Dysfunctional Attitude on Depressive Symptoms

Note. EDS = Everyday Discrimination Scale, DAS-SF = Dysfunctional Attitude Scale-Short Form, CES-D = Center for Epidemiological Studies – Depression Scale