**ISF Research Proposal**

**Research Title:** Mental Health Consequences of Palestinian Adolescents' and Parents' Exposure to Multi-types of Ethnic Discrimination: A Longitudinal Study Based on A Socio-Ecological Theoretical Framework

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**Scientific Abstract**

Ethnic discrimination refers to unjust and prejudicial actions and practices motivated by hostility towards an individual or a group of people based on their ethnic, race, and national affiliation during interpersonal exchanges, in addition to structural aspects manifested in unjust policies and regulations against their affiliation to the above-mentioned minority groups (hereafter: ethnic affiliation). An established body of knowledge, including longitudinal analyses, has shown that experiencing ethnic discrimination is considered a major life stressor with a myriad of negative consequences for adults and children. Despite this body of knowledge, the existing evidence is based mainly on cross-cultural analyses shedding light on the experiences of ethnic discrimination in the West with little attention to the impact of ethnic discrimination within the non-Western communities. Aiming to bridge this gab of knowledge, the main objective of the proposed study is to investigate the short term, long term, and cumulative effects of the experiences of multi-types of ethnic discrimination (personal, online, and socio-structural) among Palestinian adolescents and their parents in Israel. Drawing on a Socio-Ecological Theoretical Framework, the study will examine individual, familial, and socio-contextual factors and their long-term effects on adolescents' and parents' mental health outcomes.

The proposed study will employ a longitudinal research design aiming to collect data from 550 dyads of adolescents (aged 12-18) and their parents at three points of time, with a gap of a year (12 months) between each point of time. Data will be collected using structured, anonymous, self-administered questionnaires, which will be completed online (via Qualtrics software). In order to reach a representative sample, dyads of participants (i.e., adolescents and their parents) will be recruited from secondary and high schools using a stratified probability sample. The stratum will be based on the locality SES index developed by the Israeli Central Bureau of Statistics, where Arab localities will be selected randomly from each SES cluster. Structural Equation Modeling (SEM) statistical analyses will be used in order to simultaneously model both mediation and moderation effects on multiple variables (i.e., predictors, mediators, moderators, covariates, and outcomes).

The proposed study will provide researchers, policy makers, and mental health practitioners with essential knowledge on the effects of multi-types of ethnic discrimination on adolescents and parents over-time, from an ecological perspective. The results of the study will be instrumental for planning and conducting future research on ethnic discrimination as well as in the design and development of effective prevention and intervention programs dealing with the impact of this problem.

**SCIENTIFIC BACKGROUND**

Over the past three decades, ethnic discrimination have been receiving a broad recognition in health and mental health sciences (Odoms-Young, 2018; Priest & Williams, 2021; Trent et al., 2019; Williams & Mohammed, 2009). This has been expressed in increased research attention on the impact of ethnic discrimination with rigorous international evidence of its multiple effects on mental health of individuals, communities, and nations worldwide (Cormack et al., 2018; Lee et al., 2019; Paradies et al., 2015). Ethnic discrimination refers to unjust and prejudicial actions and practices motivated by hostility towards an individual or a group of people based on their ethnic affiliation and race during interpersonal exchanges (Dovidio et al., 2010; Lee et al., 2019). This aspect of ethnic discrimination represents one piece only of the ethnic discrimination multitype nature (Harrell, 1999; Jones, 1972). An established body of knowledge, including longitudinal analyses, have shown that experiencing ethnic discrimination is considered a major life stressor with myriad negative consequences for adults and children (Andrade et al., 2021; Carter, 2007; Cave et al., 2020; Choi et al., 2023; Cooke et al., 2014; Priest et al., 2013). Findings of a systematic review conducted based on longitudinal studies has shown that personal incidents of ethnic discrimination experienced by adolescents (aged 12-18 years old) was significantly associated with poor mental health outcomes, behavior problems, and risk-taking behaviors, such as substance use (Cave et al., 2020).

Scholars examined other forms of ethnic discrimination which mainly operate at the macro-level, namely a structural discrimination, where socio-political factors result in systematic discrimination against ethnic minority groups (Bailey et al., 2017; Harrell, 2000). Aspects of structural ethnic discrimination are reflected in laws, policies, and regulations, embedded in organizations or institutions that consolidate power among the ethnic majority groups (Alvarez et al., 2022), in addition to an unequal allocation of economic, organizational, professional, and social resources, with limited possibilities of social mobility (Bailey et al., 2021; Gee & Ford, 2011; Harrell et al., 2011). A recent systematic review of quantitative studies reported significant association between self-reported perceptions of structural ethnic discrimination with a wide range of poor mental health outcomes and deteriorated wellbeing (Talamaivao et al., 2020). In today's digital era, individuals – children and adults – are exposed to online ethnic discrimination as part of their virtual social life, which has been receiving growing empirical attention recently (Keum & Li, 2023). This includes various aspects of ethnic discrimination occurring on the internet and different online platforms of social media (Keum & Cano, 2023; Volpe et al., 2021), such as racist online interactions (e.g., threats, insults, and abuse) and contents (e.g., videos and photos of hate crimes and systematic inequities), in addition to being directly victimized by others because of their ethnic affiliation or indirectly by witnessing racial victimization against others (Keum & Miller; 2017). Findings of previous studies have shown that experiencing online ethnic discrimination was linked with multiple adverse mental health outcomes and risk behaviors among adults and adolescents (Maxie-Moreman & Tynes, 2022; Keum, 2022; Keum & Li, 2023; Tynes et al., 2019; Umaña-Taylor, et al., 2015). The proposed study is aiming to investigate the long-term effects of multi-types of ethnic discrimination (personal, online and structural) on adolescents' and parents' outcomes (mental health and health-risk behaviors) in the Palestinian society, based on a longitudinal study design, drawing on a socio-ecological theoretical framework.

**Theoretical Framework**

By recognizing the complex reality of human societies and relationships, the study will be guided by the Ecological Systems Theory of Bronfenbrenner (1979) which focuses on the connections between individuals and their broader environments, including the family, and the broad cultural, social, economic, and political systems that shape behaviors and access to resources necessary to promote well-being (Alvarez et al., 2022). Within this theoretical framework, we argue that adolescents' outcomes (mental health and involvement in health-risk behaviors) are affected by multiple factors in the adolescent's immediate and broader environment, including: individual factors (the adolescent's personal experiencing of ethnic discrimination - offline and online; adolescent's cognitive structures); family factors (the parental experiencing of ethnic discrimination - offline and online; parental mental health; parent-child relationships); and social factors (the structural ethnic discrimination experienced by both adolescents and their parents). In addition to the broad scope based on the ecological theory, the current study integrates the Adverse Childhood Experience model (ACEs) (Felitti et al., 1998); The General Strain Theory (Agnew 1992;2002); and the Social-Cognitive Theory (Bandura, 1986) directing us to better understand the interactions between the variables of the study. The conceptualization of Adverse Childhood Experiences model (ACEs) has been expanded recently by including ethnic discrimination-related experiences as a risk factor which negatively affects children and adolescents outcomes (Bernard et al., 2021; Cronholm et al., 2015;Hutchins et al., 2022; Wang et al., 2019). Based on this theoretical model adverse childhood experiences refer to stressful and traumatic life events occurring before the age of 18 and placing children at risk for negative developmental outcomes (Hankerson et al., 2022). The ACEs model (Felitti et al., 1998) suggests that exposure to multiple environmental, and social stressful factors is associated with disruption in child's mental health outcomes, in addition to engaging in health risk behaviors. Positioned at the base of the ACE model is the *historical trauma* component which refers to collective and intergenerational traumatic and\or stressful experiences of a group of individuals who have been systematically oppressed in previous generations (e.g., parental traumatic experiences). This *historical trauma* can be transmitted to subsequent generations through physiological, environmental, and social pathways (Bernard et al., 2021; Bowers & Yehuda, 2016; Ehlers et al., 2013; Sotero, 2006). Following this approach, exposure to ACEs risk factors, directly and indirectly, (e.g., personal and parental experiencing of ethnic discrimination), affecting negatively the child social, emotional, and cognitive functioning which in turn increase the risk for developing poor mental health outcomes (e.g., depression and anxiety) as well as engaging in risk behaviors (e.g., substance use). In line with this approach, the extended ACE model proposed by Bernard et al. (2021) emphasizes that parental experiences of ethnic discrimination are transmitted to children through biological and social pathways such as, parent-child relationship and parental mental health. Building on this theoretical model, we urge that ethnic discrimination is a multilevel risk factor that affects children's and their caregivers' outcomes. As biological pathways are out of the scope of the current study, we are aiming to focus on social pathways only. By utilizing a mediation analyses, we generally propose that the association between experiencing ethnic discrimination and adolescents' different facets of well-being would be mediated by parental mental health and parent-child relationship.

The third theoretical approach will guide the proposed study is the Social Cognitive Theory (Bandura, 1986), which focuses on the link between environmental inputs, cognitive structures, and behavioral outcomes. Based on this theoretical model we aim to investigate the potential role of cognition constructs (adolescent's self-esteem and future-orientation) in mediating the association between the adolescent's experiences of ethnic discrimination and adolescents' well-being (mental health and health-risk behaviors). In addition, the General Strain Theory will be integrated into the theoretical model of the study aiming to explain the association between adolescents' experiences of ethnic discrimination and involvement in health-risk behaviors. Agnew's (1992) General Strain Theory (GST) focuses on two types of strain. The first refers to the personal strain experienced by the individual in cases of unjust treatment or negative manners conducted by others. The second is the "vicarious" strain which refers to life strains experienced by others around the individual, such as family members. The individual may directly witness the strain experienced by others or may hear about it (e.g., from victims or by the media) (Broidy & Agnew, 1997). Agnew (1992, 2002) argues that these two types of strain lead to negative emotions which can create pressure on adolescents to be involved in delinquent acts which might in turn reduce their strain and negative emotions (e.g., substance use). In this case, involvement in health-risk behaviors are perceived as a mechanism of coping with stress and sort of delinquent coping (Agnew, 2002). Drawing on this theory (GST), ethnic discrimination experienced by adolescents and their parents is a major stressor which might explain adolescents' involvement in health-risk behaviors.

**Individual factors**

**Adolescents' experiences of personal ethnic discrimination:** Over the past two decades, the impact of ethnic discrimination on adolescents' outcomes has been receiving wide research attention due to its stressful nature and negative impact (Bernard et al., 2021; Carter, 2007; Saleem et al., 2019). Children and adolescents have been found to be vulnerable to the adverse mental and behavioral impact of discrimination due to the sensitivity of their developmental period, where they undergo physiological and emotional changes (Benner et al., 2018; Shonkoff et al., 2009).

While most of the existing body of knowledge based on studies conducted mainly among adolescents of color in the United States and other western contexts, relatively only a few studies focused on the effects of ethnic discrimination on Palestinian adolescents in Israel or other ethnic groups in the Middle East. To the best of our knowledge, one of the first studies which investigated ethnic discrimination among Palestinian adolescents, conducted by Massarwi and Khoury-Kassabri (2016), has found that ethnic discrimination is a major risk factor among adolescents which was associated with violent and aggressive behaviors against others. Despite the nobility nature of the study conducted by Massarwi and Khoury-Kassabri (2016), it examined experiences of personal ethnic discrimination from an individual perspective only based on the adolescents' self-report and based on a cross-sectional design. Building on this finding, in the proposed study we aim to expand the existing knowledge by investigating the long-term effects of personal experiences of ethnic discrimination on adolescents' outcomes by focusing on the ethnic discrimination multitype nature by investigating it at the micro and the macro levels based on a longitudinal design.

**Adolescents' experiences of online ethnic discrimination:** Online ethnic discrimination can be encountered in three ways: (a) via personal encounters of ethnic cyber-aggression from others on the internet, (b) vicariously witnessing ethnic cyber-aggression among others on the Internet, and (c) via consumption of online content that elucidates the racist reality in society (Keum & Miller, 2017). Similarly to experiences of ethnic discrimination, a growing body of knowledge showing that online ethnic discrimination is associated with multiple adverse mental health and behavioral outcomes among adolescents from ethnic and racial minority groups (Tynes et al., 2008; Tynes et al., 2020; Umaña-Taylor et al., 2015). For example, findings of a recent study conducted among a sample of American 407 adolescents from diverse ethnic groups have shown that adolescents' exposure to online racial discrimination actions was associated with depressive symptoms, anxiety, alcohol use disorder, and drug use problems (Tao & Fisher, 2022). To the best of our knowledge less is known on the effects of online ethnic discrimination on adolescents' outcomes based on a longitudinal design. To fill this gab, the proposed study is aiming to examine the long-term of online ethnic discrimination on Palestinian adolescents' emotional and behavioral outcomes.

**Adolescents' cognitive structures:** The Social Cognitive Theory (Bandura, 1986) focuses on the link between environmental inputs, cognitive structures, and behavioral outcomes. Based on this theory, social experiences (such as experiences of ethnic discrimination) influence and shape the individuals' cognition on the self. In the proposed study we aim to investigate the potential role of adolescent's cognitive constructs on the self (self-esteem) on mediating the association between the adolescent's experiences of ethnic discrimination and adolescent's outcomes. Self-esteem is a cognitive structure that refers to an individual's overall assessment of his/her value to others and to society (Leary & Baumeister, 2000; Rosenberg, 1965). A well-established body of knowledge demonstrates that adolescents who are targets of ethnic discrimination are at risk of developing low self-esteem (Cénat et al., 2022; Park et al., 2018; Liu et al., 2021; Yang et al., 2019) especially in collective cultures where self-concept relies heavily on the evaluation of others (Lönnqvist et al., 2015; Oyserman et al., 2002; Paradies, 2006). Incidents of ethnic discrimination cause individuals to experience negative emotions such as feeling unworthy, incompetent, and incapable, which contributes to the lowering of self-esteem which in turn predicts poor mental health outcomes (Sanders-Phillibs et al., 2009).

**Adolescents' background variables (age, gender and SES):** Findings of previous studies have shown that the effects of ethnic discrimination might vary by gender, although these findings are mixed (Heard et al., 2018). While some findings demonstrate that girls showed more mental health problems and emotional distress in response to ethnic discrimination (Ford et al., 2013), males are at higher risk to be involved in health risk behaviors (Assari et al., 2019). However, findings of a recent longitudinal study showed no significant gender effects (Murry et al., 2022). As for age, due to the limited number of studies, it is difficult to draw conclusions on whether the effects of ethnic discrimination on mental health may vary by age. However, findings of a systematic review of longitudinal studies (Cave et al., 2020) and a meta-analyses (Benner et al., 2018) showed that positive association between racial discrimination and emotional distress was stronger during early adolescence than late adolescence. Findings concerning the SES are also mixed (Assari, 2017; Ford et al., 2013; Neblett et al., 2016). For example, a recent study conducted among a national sample of African American found that subjective SES moderates the association between exposure to ethnic discrimination and adolescent's depressive symptoms, while objective SES measures (income and poverty income) didn't interact on the association between ethnic discrimination and mental health outcomes (Assari et al., 2018). However, less is known on the moderation effect of SES based on longitudinal data.

**Parental factors**

**Parental experiences of ethnic discrimination:** The association between parental experiences of ethnic discrimination and adolescent's outcomes has been documented across an increasing body of evidence in the recent years (Galàn et al., 2022; Heard-Garris et al., 2018; Loyd et al., 2021; Savell et al., 2019; Condon et al., 2022) emphasizing the potential effect of intergenerational transmission of ethnic-related stressors from parents to their children (Bowers & Yehuda, 2016). Studies conducted among ethnic minorities families have indicated a significant association between caregivers’ experiences of ethnic discrimination and child's poor mental health outcomes including depressive symptoms (Ford et al., 2013; Gibbons et al., 2004; Holloway & Varner, 2021), as well as externalizing problems (Tran, 2014). Beside the existing evidence based on cross-sectional studies, a recent longitudinal study conducted among 897 dyads of African-American adolescents and their mothers, found that maternal experiences of ethnic discrimination were linked with adolescents' emotional and behavioral problems (Murry et al., 2022). Despite this existing evidence, the knowledge on the long-term effects of parental experiences of ethnic discrimination on adolescents' outcomes is still limited and research in this area is in its infancy. Furthermore, as most of the studies focused on parents' *offline* experiences of ethnic discrimination, to the best of our knowledge less is known about the effects of parents' experiences of *online* ethnic discrimination on adolescents' outcomes. Therefore, the current study is aiming to bridge this gap by investigating the long-term effects of the Palestinian parents' personal experiences of ethnic discrimination (offline and online) and adolescents' outcomes.

**Parental mental health:** An established body of knowledge, based on cross sectional and longitudinal analyses, showing that experiences of ethnic discrimination (offline and online) have myriad negative influences on parents' mental health, including depression and anxiety (Gonzales et al., 2018; Keum & Li, 2023; Murry et al., 2022; Wheaton et al., 2018). For example, a longitudinal study conducted among a sample of 4000 households of ethnic minorities in the UK found that cumulative exposure to ethnic discrimination has negative long-term effects on adults' mental health, such as high levels of depression and psychological distress (Wallace et al., 2016). The current study is aiming to explore the role of parental mental health as a potential mediator on the association between parental experiences of ethnic discrimination and adolescents' outcomes, based on a growing body of empirical evidence demonstrating that parental mental health might underly the mechanism of the relationship between parental experiences of ethnic discrimination and adolescents outcomes (Condon et al., 2022; Galàn et al., 2022; Holloway & Varner, 2021; McNeil et al., 2014; Murry et al., 2022; Park et al., 2018; Tran, 2014). For example, a study conducted among a nationally representative sample of 2632 dyads of New Zealand parents and their children, found that parental psychological distress serves as a pathway linking parental experiences of ethnic discrimination and poor child emotional health (Paine et al., 2020). In light of this empirical evidence, we are aiming to better understand the underlying mechanism explaining the association between parental experiences of ethnic discrimination and adolescents' outcomes by exploring the potential mediating role of parental mental health.

**Parent-adolescent relationship:** Drawing on the Family Stress Model (Conger et al., 2010; Conger & Donnellan, 2007; Masarik & Conger, 2017) research on ethnic discrimination argues that micro and macro levels of discrimination are source of stress that can impair parenting practices and parent-child relationship (Anderson et al., 2015; Murry et al., 2008; Zedan & Haj-Yahia, 2023). Despite the fact that findings are mixed, most of the existing evidence in this area has indicated that parents who experience racial discrimination show reduced parenting quality, including harsh discipline and poor parent–child interactions (Ayón & Garcia, 2019; Gassman-Pines, 2015). Findings of a longitudinal analyses showed that parental experiences of ethnic discrimination are associated with negative parent-child relationship (Murry et al., 2022). Beyond the empirical evidence showing the direct link between experiences of ethnic discrimination and parenting, there is a growing body of evidence showing that parent-child relationship might serve as a mediator between parental experiences of ethnic discrimination and child's outcomes (Condon et al., 2022; Kazmierski et al., 2023). For example, a study conducted among a sample of 252 Afro-American parents and their adolescent children found that parents' experiences of ethnic discrimination were linked with higher levels of parent-child conflict which in turn predicted greater levels of depression among adolescents (Galàn et al., 2022). Another study proposed that exposure to racial microaggressions and other race-related stressors can compromise parents’ mental health, which in turn negatively affect their family relationships, including increases in parent–child conflict and harsh parenting (Murry et al., 2018). In line with this existing body of knowledge, we are aiming to explore the mediating role of parent-adolescent relationship on the association between parents' experiences of ethnic discrimination and adolescents' outcomes.

**Socio-contextual factors**

**Structural ethnic discrimination:** Structural ethnic discrimination refers to structural and social policies and practices that operates on the macro-level and limit individuals' access to services, resources, and socio-economic mobility (Bailey et al., 2021; Braveman et al., 2022; Williams & Mohammed 2009). This type of ethnic discrimination compound inequities between communities in various aspects of life, including: income, wealth, health, employment, neighborhood structures, education, criminal justice, and civic participation, which eventually promotes disadvantaged living conditions among oppressed communities (Bailey et al., 2017). Over the years, there is an increasing empirical evidence concerning the damaged effects of structural ethnic discrimination on mental health outcomes. It has been demonstrated that lifelong limited access to key resources are major chronic and acute stressors associated with adverse mental health outcomes including depressive symptoms (Gee & Ford, 2011; Hankerson et al., 2022; Hardeman et al., 2016; Gonzales et al., 2018; Sternthall et al., 2011; Turney et al., 2013; Youngmann & Kushnirovich, 2022; Williams, 2018).

Recently there is a growing body of knowledge, concerning the effects of structural ethnic discrimination on children's and adolescents' outcomes. Findings of previous studies have shown that exposure to structural ethnic discrimination is linked with poor mental health outcomes (Saleem & Lambert, 2016; Seaton & Yip ,2009; Torres et al., 2022) and increased risk behaviors such as drug use (Sander-Phillips et al., 2009). For example, a recent cohort study conducted among 34,252 American adolescents (aged 12-16) has shown that structural ethnic discrimination was associated with greater risk for developing depressive symptoms (Acker et al., 2023). Despite this existing body of knowledge, yet little is known about the long-term effects of structural racial discrimination on parents' and adolescents' outcomes which emphasize the need for further research in this area.

**Arab Palestinian society in Israel: Background and aspects of ethnic discrimination**

Palestinian society in Israel is an indigenous ethnic minority group comprises about 21% of Israel's total population (Israel Bureau of Statistics, 2019), and it is characterized by a significant lower socio-economic status and fewer social resources than the Jewish majority (Gharrah, 2015). The Palestinian society has been experiencing various forms of ethnic discrimination expressed in both personal and structural aspects, expressed in negative attitudes against them because of their ethnic affiliation (e.g., being treated as security threats in public spaces) (Nagar et al., 2022), in addition to low resources in education, health, employment, social welfare, and housing sectors (Soen, 2010; 2012). Moreover, compared to Jewish residential areas, the majority of Palestinians in Israel reside in economically deprived, disadvantaged neighborhoods and villages that risk their well-being and mental health (Daoud et al., 2017). Consistently with these findings, previous studies conducted among Palestinians in Israel have shown that adults exhibit depressive symptoms more than do their Jewish counterparts, which might be a result of health and mental health disparities between Arabs and Jews and aspects of ethnic discrimination (Abu-Kaf & Braun-Lewensohn, 2015; Abu-Kaf & Priel, 2012; Khatib & Abu-Rass, 2022). Despite this body of knowledge, yet little is known about the long-term effects of multi-types of ethnic discrimination on Palestinian adolescents and their parents in Israel.

**RESEARCH OBJECTIVES AND EXPECTED SIGNIFICANCE**

The main objective of the proposed study is to investigate the short term, long term, and cumulative effects of the experiences of multi-types of ethnic discrimination among Palestinian adolescents and their parents. Based on an ecological perspective, the study will look at individual factors, familial factors, and socio-contextual factors and their effects on adolescents' and parents' outcomes. In light of the existing body of knowledge, the impact of ethnic discrimination on adolescents and adults is well-established; however, there is a substantial gab of evidence concerning the long-term and cumulative effects of ethnic discrimination on adolescents and their parents, based on a longitudinal data, as most of studies are based on cross-sectional analyses. To bridge this gap of evidence, a longitudinal research design will be utilized aiming to thoroughly understand the effects of ethnic discrimination on adolescents and parents over time. Furthermore, the theoretical framework of the study acknowledges the need to understand the pathways in which different forms of ethnic discrimination operate to have an impact on adolescents' and parents' outcomes, as the mechanisms underlying experiences of ethnic discrimination over time have been unexplored. Therefore, potential mediators (adolescent's cognitions, parent-child relationships, and parental mental health) will be tested on the associations between adolescents' and parents' experiences of ethnic discrimination and adolescents' outcomes. Furthermore, despite the extensive body of knowledge on the impact of ethnic discrimination on mental health outcomes - among adolescents and adults - most of the studies carried out among ethnic minority groups in Western countries (e.g., the United States) and relatively only a few studies conducted within the non-Western cultural context, particularly among dyads of adolescents and parents. Therefore, another aim of the proposed study is to extend the existing knowledge on the impact of ethnic discrimination to a non-Western context concentrating on adolescents and parents from the Palestinian society in Israel as an ethnic minority group. The proposed study will provide policy makers and mental health practitioners with important information on the effects of multi-types of ethnic discrimination on adolescents and parents, *over-time*. The results will be instrumental in the design and development of effective prevention and intervention programs dealing with the impact of ethnic discrimination based on an ecological perspective.

**DETAILED DESCRIPTION OF THE PROPOSED RESEARCH**

**The main research questions and hypotheses:**

**1.** What are the short term and long-term effects of exposure to multiple-types of racial discrimination on adolescents' and parents' outcomes?

**2.** How does the effect of exposure to multi-types of racial discrimination on adolescents' and parents' outcomes change over time?

**3.** The higher the levels of adolescents' exposure to multiple-types of racial discrimination the higher levels of their mental health distress and their involvement in health-risk behaviors (At TI, T2 and T3).

**4.** The higher the levels of adolescents' exposure to multiple-types of racial discrimination the lower of levels of adolescents' self-esteem (cognition perception of self). (At TI, T2 and T3).

**5.** Parents' exposure to multiple-types of racial discrimination will be negatively linked with parents' mental health outcomes (at T1, T2, and T3).

**6.** The higher the levels of parents' exposure to multiple-types of racial discrimination the more negative are the levels of parent-child relationships. (At T1, T2, T3).

**7.** The associations between parents' exposure to multiple-types of racial discrimination and adolescents' own exposure to multiple-types of racial discrimination will be tested at T1, T2, and T3.

**Mediation pathways and indirect effects at T2 and T3:**

**8.** Parents' mental health outcomes would mediate the association between parents' exposure to multiple-types of racial discrimination with adolescents' mental health outcomes and involvement in health-risk behaviors. (will be tested at T2 and T3 only?)

**9.** Parent-child relationships would mediate the association between parents' exposure to multiple-types of racial discrimination with adolescents' mental health outcomes and health-risk behaviors. (will be tested at T2 and T3 only?)

**10.** Adolescents' self-esteem (cognition perception of self) would mediate the association between adolescents' exposure to multiple-types of racial discrimination and adolescents' outcomes (mental health and involvement in health-risk behaviors). (Also T2 and T3 only?)

**Moderation analyses:**

**11.** The moderating role of adolescents' age, gender, and family SES will be tested on the association between the adolescents' exposure to multiple types of racial discrimination with adolescents' mental health and involvement in health-risk behaviors, at T1, T2, and T3.

**12.** The moderating role of adolescents' age, gender, and family SES will be tested on the association between the parents' exposure to multiple types of racial discrimination and parents' mental health, at T1, T2, and T3.

**Sample size, research design and** **procedure**

Given that power reduces as the level of complexity increases, we conducted a power analysis for the moderated-mediation effect which is the most complex hypothesis in the study. Having sufficient power for the moderated-mediation effect suggests sufficient power for the other less complex effects. To estimate power, we used the pwr2ppl package in R. Assuming medium effect size associations (0.3 in a correlation metric) and alpha = .05, a sample of n = 480 (dyads) yielded a power of .80. Taking the more conservative sample size estimation and assuming a 30% attrition rate, a sample of n = 1100 dyads will be recruited (n =550 adolescents; n=550 parents).

The proposed study will employ a longitudinal research design aiming to collect data from adolescents and their parents at three points of time, with a gap of a year (12 months) between each point of time. Data will be collected from adolescents and their parents using structured, anonymous, self-administered questionnaires, which will be completed online (via Qualtrics software). In order to reach a representative sample, dyads of participants (i.e., adolescents and their parents) will be recruited from secondary and high schools using a stratified probability sample. The stratum will be based on the locality SES index developed by the Israeli Central Bureau of Statistics. This index is a measure often used to describe the SES of localities in Israel and is based on various social and economic indicators such as education level, income, employment, housing characteristics, infra-structure, and receipt of social benefits (see Gharrah, 2015). At the first stage, one Arab locality will be randomly sampled from each SES cluster. Secondly, one high school from each locality will be selected randomly from a list of schools provided by the Israeli Ministry of Education. Thirdly, at each selected school, one class will be randomly selected from each grade level, and all students in the selected classes and their parents will be asked to participate in the study.

The study will be conducted among adolescents (aged 12-18) and their parents. After selecting the schools, their principals will be contacted by the PIs of the study in order to provide information about the goals of the study and the schools' role in recruiting the students and their parents. After getting the approval from the schools' principals, consent forms and information sheets about the study will be distributed by trained research assistants to the adolescents at school and they will be asked to pass the information sheets and consent form to one of their parents (no preference to the gender of the parent). Adolescents and parents will have a week to think whether they agree to participate in the study, and they will be provided with the PIs contact details in case they have any questions about the nature of the study. After a week, research assistants will visit schools again to collect the consent forms from students who agree to take part in the study. Upon the approval, research assistants will contact adolescents and parents via phone to explain the procedure of the study. Adolescents and their parents will complete the questionnaires at home via Qualtrics software using a link using their cell-phone or computer. The completion of filling-out the questionnaires by adolescents and parents is expected to last for about 30 - 40 minutes. Participants (adolescents and parents) will be informed that they have the option to refuse participating in the study and they will be free to withdraw from the study at any time and for any reason without any penalty. In addition, parents will be informed that they have the option to refuse participation on their adolescents' behalf. Confidentiality and anonymity will be ensured at all waves of the study for all participants, and all data will be collected will be used for the research purposes only. Also, participants will be informed that their contact details will be securely saved for completing the data collection at the second and third waves of the data collection. As a compensation of their time, adolescents and their parents will be given a gift voucher after the completion of the data collection at T3. The questionnaires, data collection procedures, information sheets, and informed consent forms for adolescents and parents will be reviewed by the Ben-Gurion University and the Hebrew University of Jerusalem Internal Review Boards of Ethics as well as by the Israeli Ministry of Education.

**Measures**

**Independent variables**

**Personal experiences of ethnic discrimination.**  Personal experiences of ethnic discrimination among adolescents and parents will be measured by The Everyday Discrimination Scale (Williams et al., 1997). The scale includes 9 items of negative and unfair treatment against ethnic minorities as part of their daily interactions with the majority community (e.g., "I have received bad service at a restaurant because of my ethnic affiliation"). This scale was translated into Arabic and adapted to the Israeli context, and measures Palestinian adolescents' personal ethnic discrimination in a previous study, and its internal reliability was 0.93 (Massarwi & Khoury-Kassabri, 2016). Participants of this study (adolescents and parents) will be asked to indicate how many times they have experienced each one of the 9 items over the past year. Responses are based on a 5-point Likert-type scale, ranging from 0 (never) to 5 (almost every day). One overall score will be derived by computing the mean of the responses on all items.

**Online experiences of ethnic discrimination.**Online experiences of ethnic discrimination among adolescents and parents will be measured by the short form of the Perceived Online Racism Scale (PORS-SF; Kuem, 2021) which is used to assess people’s experiences of racist online interaction and exposure to racist online content and information. The 15 items of the PORS-SF span three domains: personal experience of racial cyber-aggression (e.g., “I have received racist insults regarding my online profile [e.g., profile pictures, user ID.]”), vicarious exposure to racial cyber-aggression (e.g., “I have seen other racial/minority users being treated like a second-class citizen.”), and online-mediated exposure to racist reality (e.g., “Seen online videos (e.g., YouTube) that portray my racial/ethnic group negatively"). Responses are rated on a five-point Likert-type scale ranging from 1 (Never) to 5 (All the time), and higher scores indicate greater exposure to online ethnic discrimination. Keum and Miller (2017) established good initial psychometric properties for the PORS with good internal consistency estimates (.90 to .95 across the subscales), construct validity relationships with racism-related stress, psychological distress, and unjust views of society (Keum & Li, 2022). This scale will be translated into Arabic and adapted to the Palestinian society in Israel for the purposes of the proposed study.

**Perceptions of structural ethnic discrimination.**Perceptions of structural ethnic discrimination among adolescents and parents will be measured using the Institutional Group Discrimination (IGD) developed by Daoud et al. (2018). This scale is a validated self-report 12-item scale evaluates perceptions of structural discrimination against Arabs as a collective ethnic minority in Israel (Osman, 2015). Participants will be asked to rate their agreement with 12 statements that described systematic inequalities between Arabs and Jews that stem directly or indirectly from discriminatory institutional practices, such as: “Arab towns lack adequate healthcare services compared to Jewish towns; "Arab towns are underdeveloped compared to Jewish towns"; "Arabs in Israel have less employment opportunities compared to Jews“. Responses are rated on a 5-point Likert scale ranging from strongly disagree to strongly agree. This measure has shown good construct validity in previous testing (Daoud et al., 2018; Osman et al., 2015). One overall score will be derived by computing the mean of the items. Reliability value in previous study was 0.93 (Daoud et al., 2018).

**Dependent variables**

**Adolescents' mental health***.*This variable will be tested by using two tools measuring depression and psychological distress. Depressive symptoms will be measured by the 13-item Beck Depressive Index (BDI; [Beck et al., 1961](https://www.sciencedirect.com/science/article/pii/S0145213407001366?casa_token=Aj0gTF8ogD8AAAAA:TRPsuvqb4fkgH0LV2evVaCr3K0-ePBFaTaL8zVoYSWsq7lwCXcipgd2IPByCzQ2qxzw2nfRGYsQ#bib8)). The scale includes various symptoms such as sad mood, difficulties in making decisions, and exhaustion, rated for the past two weeks on a four-point Likert scale. This scale has been frequently used among Palestinians samples, and it has been found to be reliable ([Qouta et al., 2005](https://www.sciencedirect.com/science/article/pii/S0145213407001366?casa_token=Aj0gTF8ogD8AAAAA:TRPsuvqb4fkgH0LV2evVaCr3K0-ePBFaTaL8zVoYSWsq7lwCXcipgd2IPByCzQ2qxzw2nfRGYsQ" \l "bib67);2007). Psychological distress will be measured using the 10-items version of the Kessler Psychological Distress Scale (Kessler et al., 2003). The scale that identifies extreme psychological distress symptoms in the general population in the past month, including nervousness, hopelessness, sadness, worthlessness, and fatigue. Response rated on a on 5-point Likert-type scale ranging from 1 (none of the time) to 5 (all of the time). Responses are summed to create a total score (range = 10–50) with higher scores signifying higher psychological distress. In previous studies among Arab children K10 had strong scale reliability with Cronbach’s α greater than 0.88 (Easton et al., 2017).

**Adolescents' health-risk behaviors (Drug use and drinking alcohol)**. This variable will be measured using a scale developed by Johnston, O’Malley, and Bachman (1995), which has been widely used in Hebrew and Arabic translations in Israel (Schiff et al., 2008). This scale includes seven items, three of which relate to alcohol use and four of which relate to cigarette smoking and drug use. Responses are on a 7-point Likert type scale that examines the frequency of use during the past year, ranging from 1 = never to 7 = 30 times or more. In previous study conducted among Arab adolescents in Israel reliability was 0.95 (Eseed & Khoury-Kassabri, 2018). One overall score will be derived by computing the mean of the items.

**Adolescents' self-esteem.** Adolescent's self-esteem will be measured by The Rosenberg Self-Esteem Scale (RSESR; Rosenberg, 1965) which is a 10-item, self-report measure extensively used to assess evaluations of self-esteem (e.g., “I feel that I have a number of good qualities”) which are presented on a Likert scale from 1 (strongly agree) to 4 (strongly disagree). One overall score will be derived by computing the mean of the items. Previous studies provided evidence for its reliability and validity among Arab adolescents in Israel with reliability value ranges from of .78 to .81 (Abu-Saad, 1999; Benish-Weisman et al., 2017; Peleg, 2009).

**Parental mental health*.*** This variable will be measured using The Brief Symptom Inventory (BSI; Derogatis & Melisaratos’s, 1983). The BSI is a highly reliable and well-validated 53-item self-report symptom inventory, designed to assess psychological symptoms ([Derogatis & Melisaratos, 1983](https://journals-sagepub-com.ezproxy.bgu.ac.il/reader/content/1863c30e3f8/10.1177/0886260519843280/format/epub/EPUB/xhtml/index.xhtml?hmac=1695917311-7q8aZJb%2ByL933fM6sm5pJpR8mx4fBj%2BHIllIMZIuDvo%3D" \l "bibr8-0886260519843280)). Each item of the BSI is rated on a 5-point scale of distress, ranging from 0 (not at all) to 4 (extremely). The BSI was selected to best reflect the following nine primary symptom dimensions: somatization (e.g., “feeling weak in parts of your body”), obsessive–compulsive behaviour (e.g., “having to check and double-check what you do”), depression (e.g., “feelings of worthlessness”), interpersonal sensitivity (e.g., “feelings of inadequacy, inferiority, and marked discomfort during interpersonal interactions”), anxiety (e.g., “feeling tensed or keyed up”), hostility (e.g., “having urges to beat, injure, or harm someone”), phobic anxiety (e.g., “feeling uneasy in crowds”), paranoid ideation (e.g., “feeling that most people cannot be trusted”), and psychoticism (e.g., “feeling very self-conscious with others”). [Derogatis and Melisaratos (1983)](https://journals-sagepub-com.ezproxy.bgu.ac.il/reader/content/1863c30e3f8/10.1177/0886260519843280/format/epub/EPUB/xhtml/index.xhtml?hmac=1695917311-7q8aZJb%2ByL933fM6sm5pJpR8mx4fBj%2BHIllIMZIuDvo%3D#bibr8-0886260519843280) reported that the Cronbach’s alpha internal consistency coefficients for all nine dimensions ranged from a low of .71 for the psychoticism dimension to a high of .85 for depression. Cronbach’s Alpha coefficients for the nine dimensions of the Arabic version of the BSI utilized in a previous study ranged from a low of .76 on the somatization dimension to a high of .88 for depression and anxiety (Haj-Yahia & Tamish, 2001). One combined score will be computed for each participant by summing their responses on all 53 items that measure all nine symptoms, as a global index for psychological distress.

**Parent-adolescent relationship*.*** This variable will be measured using the Adolescent Family Process (AFP) scale (Vazsonyi et al., 2003). It includes 25 paternal and maternal items for measuring six subscales based on the adolescent perspective on his/her relationship with their parents: closeness (such as "My mother/father gives me the right amount of affection"); support (such as "My mother/father puts me down in front of other people"); and monitoring (such as "When I am not at home, my mother/father knows my whereabouts"). These will be rated on a five-point Likert-type response scale ranging from 1 = strongly disagree to 5 = strongly agree. Other subscales include communication (such as "How often do you talk to your mother/father about things that are important to you?"); conflict (such as "How often do you have disagreements or arguments with your mother/father?"); and peer approval (such as "How often does your mother/father approve of your friends?"). These will be rated on a five-point Likert-type scale ranging from 1 = never to 5 = very often (Pickering & Vazsonyi, 2010). One overall score will be derived by computing the mean of the items. Higher values represent better parent-adolescent relationship. This scale was used in previous studies among Arab adolescents in Israel with reliability value ranging from .76 to .87 (Khoury-Kassabri et al., 2019; Massarwi & Khoury-Kassabri, 2016). The same scale will be adapted/modified to a parental version and parents will be asked to self-report their relationship with their adolescent.

**Background and socio-demographic variables*.*** Adolescents and parents will be asked to provide socio-demographic information, including age, gender, religion, type of locality of residence, area of residence, parental education, and family-socio-economic status.

**Data analysis**

The research design includes longitudinal mediation and moderation hypotheses. Structural Equation Modeling is most appropriate for these kinds of research hypotheses as SEM can simultaneously model both mediation and moderation effects on multiple variables (i.e., predictors, mediators, moderators, controls, and outcomes). Moreover, SEM uses full-information maximum likelihood estimation which can easily handle missing data that are common in longitudinal designs. In the SEM analytical approach, we will use the CLMP (cross-lagged panel model) and RI-CLMP (random intercept cross-lagged panel model) to assess the longitudinal effect of both the between-participants and within-participant effects over time. These types of analyses control for the baseline level in an outcome variable when estimating the longitudinal effect of the predictor at tn on the outcome at tn+1. The CLMP and RI-CLMP are the best methods for close-to-causal effects in non-experimental settings.

**Preliminary results**

Not applicable

**Resources available to the researcher to carry out the study**

**Dr. Adeem A. Massarwi**: Dr. Massarwi has extensive experience as a co-investigator of both national and international large-scale samples of children, adolescents, and parents. worked on a large-scale study that explored risk and protective factors among Arab adolescents in Israel among 3,260 adolescents from over 20 Arab schools. This experience will be helpful to understanding the theoretical, methodological, and practical aspects of the current study.

**Prof. Muhammad M. Haj-Yahia**: Prof. Haj-Yahia has extensive experience in conducting quantitative large-scale surveys as well as qualitative studies about different topics related to family violence, school violence, community violence, and political violence (e.g., rates, risk factors, mental health effects), in many countries around the world (e.g., Israel, The Palestinian National Authority, Jordan, Turkey, Sri Lanka, Taiwan, Bangladesh). He has also supervised over 50 graduate students in writing their MSW theses and doctorate dissertations on topics related to the above-mentioned domains of research. He has written and published over 120 articles in refereed prominent journals, edited two books that have been published by Oxford University Press and Indiana University Press, and have written several research reports; all of them on topics related to the above mentioned fields of knowledge and research.

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