J Immigrant Minority Health (2017) 19:645–654
DOI 10.1007/s10903-016-0476-1

ORIGINAL PAPER

Family Qualities, Self-Deprecation, and Depressive Symptoms of Zoroastrian Young Adults in Immigrant Families

Farin Bakhtiari[1] · **Scott. W. Plunkett**[2] · **David Alpizar**[3]

Published online: 3 August 2016

Abstract The aim of this study was to examine family qualities and self-deprecation in relation to depressive symptoms of young adult Zoroastrians from immigrant families in North America. Using snowball sampling and online surveys, self-report data were collected from 171 Zoroastrian young adults (i.e., 18–30 years old) about their perception of cohesion in their families, conflict with their parents, and the extent that they met parental general expectations (e.g., not embarrassing the family). The findings from a path analysis showed that parent–child conflict and meeting parental expectations were indirectly related to depressive symptoms through self-deprecation. Also, higher family cohesion predicted lower levels of depressive symptoms among Zoroastrian young adults. These results are similar to findings in studies with non Zoroastrians. The results suggested prevention and interventions to decrease depressive symptoms could target self-deprecating thoughts as well as perceived family dynamics.

Keywords Depressive symptoms · Family · Self-deprecation · Young adulthood · Zoroastrians

✉ Scott. W. Plunkett
scott.plunkett@csun.edu

[1] General Experimental Psychology, California State University Northridge, Northridge, CA, USA

[2] Department of Psychology, California State University, Northridge, 18111 Nordhoff St., Northridge, CA 91330-8255, USA

[3] Department of Education Psychology, Washington State University, Pullman, WA, USA

Introduction

Depression is one of the most debilitating mental health disorders around the world [1]. In the United States, approximately 10.9 % of 18–24 year olds and 9.1 % of 25–34 year olds report symptoms of current depression [2]. Mental health issues such as depression are prevalent among young adults [3], possibly because they experience many transitions, instability (e.g., residency), intrapersonal struggles (e.g., identity exploration, self-concept), and interpersonal struggles (e.g., parent–child relationships) [4]. Depression during young adulthood is related to unfavorable outcomes including alcohol-related problems [5], personality disorders [6], and health problems [2]. Thus, it is important to investigate factors that contribute to young adults' depressive symptoms in different ethnic groups to create effective and culturally sensitive interventions and prevention programs. One group that has not been investigated is Zoroastrian young adults.

Zoroastrians in Diaspora

Zoroastrianism (i.e., one of the oldest living monotheistic religions) originated in Iran 2500–3000 years ago [7]. Before the Arab invasion of the 640s, most Iranians were Zoroastrians, but after the conquest most people converted to Islam [7]. Over the centuries, many Zoroastrians left their home country by choice and/or obligation. The Zoroastrian community has gone through multiple phases of diaspora [8]. Between the eighth and tenth centuries, some Zoroastrians immigrated to India; they are known as Parsis [9]. In the late twentieth century, Zoroastrians immigrated from India, Iran, Pakistan, and East Africa to Britain, Canada, and the United States for education, career development, and/or leaving Islamic regimes in some

countries (e.g., Iran, Pakistan) [7, 10]. The immigration to the west mainly began after World War II for Parsis [10] and after the 1979 revolution for Iranians [7].

Zoroastrians are a fairly small minority with approximately 72,000 Parsis in India [7], 25,271 in Iran [11], 6421 in Canada, 14,306 in the United States, and fewer in other parts of the world (e.g., Australia) [12]. There was a rapid decline of Zoroastrians in Iran and India from 2004 to 2012 (−37.5 % in Iran, and −12.4 % in India); however in North America, the Zoroastrian community has witnessed a population increase (+7.5 % in Canada, +32.5 % in the United States) [12]. This noticeable increase of the Zoroastrian population in Western countries makes the Zoroastrian community a potential growing minority group and worthy of more research.

Family Qualities, Self-Deprecation, and Depressive Symptoms

The developmental-contextual framework suggests that individual characteristics and contextual qualities impact individuals' health and development [13]. Self-deprecation and gender (two individual qualities) have been shown to relate to symptoms of depression. Also, the family is considered a primary context for development [13], especially in Zoroastrian culture [10], and studies have shown that family qualities can influence depressive symptoms in young adults [14]. Three family qualities (i.e., family cohesion, meeting parental expectations, parent–child conflict) were examined.

Most previous scholarship has examined global self-esteem in relation to depression. However, a few studies in different ethnic/cultural groups have noted positive esteem and self-deprecation (i.e., negative self-esteem [15, 16]) are related, but separate constructs [17], and that self-deprecation is a stronger predictor of depressive symptoms than positive esteem [15]. The vulnerability model suggests self-deprecation increases risk for depression [18]. Individuals with negative self-esteem may be more vulnerable to real or perceived rejection, avoid social interactions, and/or engage in antisocial behaviors that increase alienation and rejection [18]. When individuals have negative views of self, they are more likely to view everyday situations, challenges, and life events as insurmountable which increases hopelessness and depressive symptoms [19]. Zoroastrian young adults may experience challenges associated with being refugees and/or immigrants such as acculturative stress, cultural conflicts with less acculturated parents, few potential mates in the same religion/culture, and discrimination [10]. According to the vulnerability model, Zoroastrian young adults who engage in more self-deprecating thoughts may see these challenges as overwhelming, and feel greater despair and rejection, thus increasing risk of depressive symptoms.

Gender is another individual quality that is related to depressive symptoms and self-esteem. In general, depression [2] and low self-esteem [20] are greater in females than males. The vulnerability model suggests women may report more depressive symptoms and self-deprecation due to biological factors (e.g., hormones), greater emotional reactivity, and cognitive factors (e.g., brooding rumination, objectified body consciousness) [21]. Male and female Zoroastrians often have differing cultural expectations and defined roles in the family [22], thus examining whether gender contributes to self-deprecation and depressive symptoms is warranted.

Family cohesion is a family quality that is related to decreased depressive symptoms in African American college students [23], Latino college students [24], and working and lower middle-class Caucasian young adults [25]. Family cohesion refers to the level of emotional bonding, sense of unity and commitment, and support that family members provide for each other [26]. When individuals perceive their families as less cohesive, they might feel increased emotional distance from their families and loneliness [27], and they might be less likely to ask family members for support during times of stress [28]. Individuals from less cohesive families are also at increased risk for negative self-esteem [29]. Feeling disengaged (i.e., emotional distance) from families can promote low worth in the family. Zoroastrian families are expected to be close [10], thus when Zoroastrians feel disengaged from their families it can be especially impactful.

There is little information about the influence of meeting parental expectations on young adults' mental health. A study with Taiwanese college students [30] and a study with mostly White college students [31] found that not living up to parental expectations related to increased risk of depression. Another study found that not meeting parental expectations was related to more self-deprecation in Japanese and European American college students [32]. In the Zoroastrian culture, younger generations are expected to respect older generations' opinions. Also, considering that most Zoroastrian parents originated in either Iran or India, parental general expectations might include not embarrassing the family, not disappointing the parents, and not making trouble for the family. When Zoroastrian young adults feel they let their parents down or harmed the family's reputation, they may feel inadequate (i.e., self-deprecation) and upset, increasing risk of depression. Also, not meeting parental expectations can contribute to young adults' depression in immigrant families when parents state they have immigrated for the sake of their children.

Parent–child conflict is another family quality that can increase young adults' depressive symptoms [24, 33] and

low self-esteem [24]. Given the transitions that occur during emerging adulthood (e.g., increased autonomy, separation from parents, identity development) [4], it is likely that parent–child conflict could arise. Conflicts between young adults and parents can be compounded in immigrant families due to acculturative stress [24]. Offspring may be vulnerable to blaming themselves for the conflict [34]. Since family unity is highly valued in Zoroastrian culture [10], young adults who argue with their parents may engage in self-deprecating thoughts and sadness for upsetting their parents. Zoroastrian young adults who were born in North America may also have cultural or values conflict with immigrant parents.

Theoretical Model

Based on the existing literature, a theoretical model to be tested was developed (see Fig. 1). It was hypothesized that self-deprecation would be significantly and negatively related to depressive symptoms of Zoroastrian young adults. Next, it was hypothesized that female Zoroastrians would report higher self-deprecation and depressive symptoms than male Zoroastrians. Also, it was hypothesized that family cohesion and meeting parental expectations would be significantly and negatively related to self-deprecation and depressive symptoms, while parent–child conflict would be significantly and positively related to self-deprecation and depressive symptoms. Since self-esteem has been shown to be a full or partial mediator between various family factors (e.g., perceived acceptance, psychological control, firm control in a mostly White sample in the USA [35], parent–child conflict in samples from Netherlands [14] and Turkey [36], and family cohesion in young adults samples from Netherlands [14] and USA [25]) with depression, this study also examined the indirect effects of family qualities on depressive symptoms through self-depreciation. Specifically, it was hypothesized that the family qualities would be directly related and indirectly related (through self-deprecation) to depressive symptoms of Zoroastrian young adults.

Generation status and living with at least one parent were considered as possible control variables in the analyses. Specifically, 1st generation (i.e., immigrant) Zoroastrians might experience more acculturative stress than 2nd generation (i.e., participant born in USA, but at least one parent was foreign born), which could put them at higher risk of self-deprecation and depressive symptoms. It is also possible that generation status might relate to perceptions of family qualities. For example, 1st generation might be more likely to meet parental expectations, while 2nd generation might be more likely to get into conflict with parents (possibly due to cultural differences). On a similar note, if Zoroastrians are living at home, their relationship with their parents might be more impactful to their self-worth and mental health. It is also possible that gender differences might exist on the family qualities. So, beyond

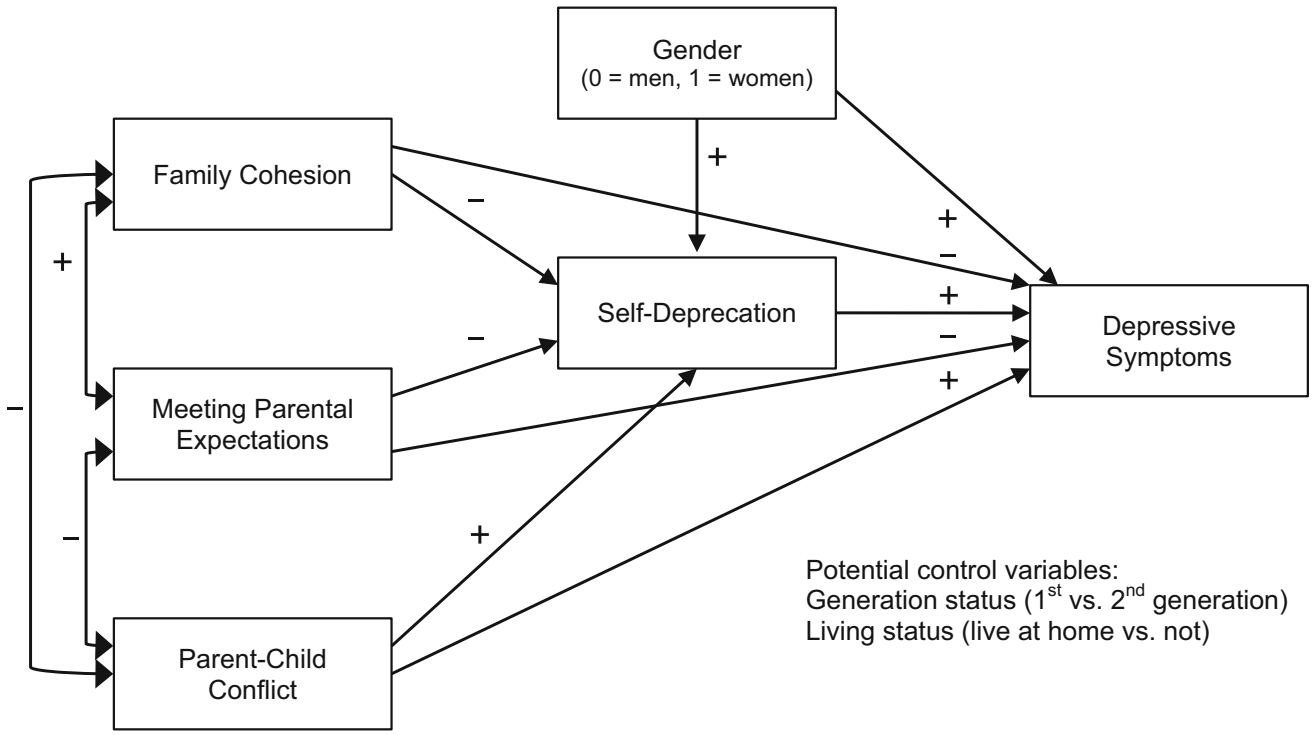

Fig. 1 Theoretical model depicting family qualities, self-deprecation, and depressive symptoms of Zoroastrian young adults

the specific hypotheses of gender differences on self-deprecation and depressive symptoms, the study examined whether there were gender differences on the family qualities as well.

Methods

Participants and Data Collection

This study was approved by the university institutional review board and was part of a larger study examining family qualities and mental health of young adults. Self-report data were collected from 209 Zoroastrian young adults. Inclusionary criteria follow: 18–30 years of age, self-identify as Zoroastrian (e.g., Parsis, Iranian), and currently live in the United States or Canada. Data from 38 Zoroastrians were excluded because they lived outside North America and/or were over 30 years of age. The original sample included 171 participants, but data from 7 individuals were eliminated due to missing values. The analyses were conducted on 164 participants (38.4 % Parsis, 59.1 % Iranian, 2.4 % unknown) from 18 to 30 years ($M = 24.4$ years). See Table 1 for additional sample characteristics.

An online survey was posted on Qualtrics.com, and no identifying information was asked. Permission was solicited from Zoroastrian groups and organizations to post a survey link on their Facebook pages. Some organizations sent the survey link with a short description of eligible participants in their monthly news emails. Also, some Zoroastrian organizations allowed the researcher to recruit participants during their events. Willing participants were emailed a survey link. Snowball sampling was also used. Specifically, participants were asked to forward the survey link to other Zoroastrians who met the criteria or to have the possible participant contact the researcher about the study. And finally, a link to the online survey was accessible through a Facebook group event and a Facebook community page that targeted Zoroastrians.

Measurement

Participants' demographic characteristics were assessed using standard demographic items. For all scales, the items were averaged. Cronbach's alphas are in Table 2.

Depressive symptoms were measured with the 10-item version [37] of the 20-item Center for Epidemiologic Study's Inventory for depressed mood [38]. A sample item follows: "I felt sad." Two items were reverse-coded (e.g., "I enjoyed life"). Participants indicated how often they felt a particular way during the past 7 days with response options ranging from: 0 = *rarely or none of the time* (*less than 1 day*) to 3 = *mostly or almost all the time* (5–7 *days*). The 10-item version has been used with Mexican–American migrant and immigrant adults and shown to have good factor structure and reliability [39].

Self-deprecation was measured with the five negatively worded items of the Rosenberg Self-Esteem Scale [40]. Although most researchers have used the total scale, various studies have demonstrated that the positive and negative items tap into different but related constructs [15], and that the negatively worded items are more strongly related to depressive symptoms which supports the vulnerability model. A sample item was, "At times I think I am no good at all." Responses ranged from 1 = *strongly disagree* to 4 = *strongly agree*. The self-deprecation subscale had good factor structure and reliability (Cronbach's alpha = .82) in a sample of Iranian American and Armenian American adolescents [16].

A 15-item scale was used to measure frequency of conflict between parents and young adults [41]. The stem for the items follows: "How frequent are the disagreements you have with your parents on the following issues?" The scale contained options regarding various aspects of life (e.g., physical appearance, privacy, finances). The response choices ranged from 1 = *never* to 5 = *most of the time*.

The 10-item meeting parental expectations scale [42] was originally developed based on items from the Living up to Parental Expectation Inventory [30]. A sample item follows, "I have met my parents' expectations about not embarrassing my family." The response choices ranged from 1 = *strongly disagree* to 4 = *strongly agree*. In a sample of 444 Armenian emerging adults from mostly immigrant families (many from Iran), a Cronbach's alpha of .88 was found, and the scale was significantly and negatively correlated to depressive symptoms for men and women [42].

The six positively worded items from the 9-item Family Cohesion Scale [43] were used to measure emotional bonding between family members. A sample item follows, "We help each other." Response choices ranged from 1 = *strongly disagree* to 4 = *strongly agree*. The scale had very good internal consistency reliability with Armenian emerging adults from mostly immigrant families (alpha = .88) [42] and Latino emerging adults from mostly immigrant families (alpha = .90) [43]. Also, the scale was significantly and negatively correlated to depressive symptoms for Armenian [42] and Latino [43] men and women.

Results

Data Screening

Missing values were less than 5 % for parent–child conflict, gender, parental expectations, depression, and family

Table 1 Demographics of the sample

	($N = 164$) (%)
Age (18–30 years, $M = 24.4$, $SD = 3.8$)	
Gender	
Men	47.0
Women	53.0
Marital status—single	90.2
Parents' marital status	
Married	82.9
Other (divorced, never married, remarried, widowed)	17.1
Living with parent(s)	65.8
Generation status	
1st generation (participant and parents born outside North America)	55.5
2nd generation (participant born in North America, at least one parent not born in North America)	44.5
Mothers' birth country	
Iran	51.8
India	36.0
Pakistan	5.5
USA	1.2
Canada	1.2
Other (i.e., Bahrain, England, Kenya, Palestine, United Kingdom, and Yemen)	4.3
Fathers' birth country	
Iran	54.3
India	36.0
Pakistan	5.5
Tanzania	1.2
Other (i.e., USA, Bangladesh, Egypt, Germany, and United Kingdom)	3.0

Table 2 Means, standard deviations and correlation matrix (N = 164)

	1	2	3	4	5	6
1. Depressive symptoms	1.00					
2. Self-deprecation	.57*	1.00				
3. Family cohesion	−.31*	−.20*	1.00			
4. Meeting parents' expectations	−.33*	−.46*	.33*	1.00		
5. Parent–child conflict	.34*	.44*	−.32*	−.44*	1.00	
6. Gender (0 = male, 1 = female)	.20*	.22*	−.06	−.04	.06	1.00
M	.72	2.02	3.33	3.16	2.16	.53
SD	.53	.68	.59	.48	.65	.50
Cronbach's alphas	.84	.83	.92	.87	.89	

* $p < .05$

cohesion. Also, Little's MCAR test revealed that data were missing at random, $\chi^2(19) = 22.03$, $p = .28$. This indicated any method to deal with missing values can be employed (e.g., [44]), thus the current study opted for deleting the missing values, and the final sample was 164. Next, the current study had no outliers because the *z*-score values were below 3.30 [44]. Also, the skewness and kurtosis values were below the absolute value of 2 for both indices, indicating no concerns. Additionally, the data did not have multicollinearity since (1) VIF values were between 1 and 10, and (2) tolerance values were above .20. Overall, the study met all the required assumptions (e.g., absence of outliers, multicollinearity) for the analysis.

Independent Samples *t* Tests

To assess whether the potential control variables should be included in the model, independent samples *t* tests were

conducted. No significant ($p \geq .22$) differences were found between participants living with parents and those not living with their parents on depressive symptoms, self-deprecation, family cohesion, meeting parental expectations, or parent–child conflict. Also, no significant ($p \geq .102$) differences were found between 1st and 2nd generation Zoroastrian young adults on the variables in the study. Additionally, no significant ($p \geq .437$) differences were found between men and women on family cohesion, meeting parental expectations, and parent–child conflict. However, women reported significantly higher self-deprecation ($p = .005$) and depressive symptoms ($p = .009$). Thus, participants' living status and generation status were not included in the path analyses, but gender was only included predicting self-deprecation and depressive symptoms.

Correlations

Pearson correlations using SPSS 23 were conducted to examine the bivariate relationships between the variables (see Table 2). Self-deprecation was significantly and positively correlated with Zoroastrian young adults' depressive symptoms. Family cohesion and meeting parental expectations were significantly and negatively correlated to self-deprecation and depressive symptom, while parent–child conflict was significantly and positively related to self-deprecation and depressive symptoms. Women reported significantly higher levels of self-deprecation and depressive symptoms than men.

Path Analysis

A path analysis using MPlus was conducted to test whether the theoretical model was a good fit for the data, and whether the family qualities predicted depressive symptoms through self-deprecation. The three family variables on depressive symptoms through self-deprecation were estimated simultaneously using maximum likelihood estimation. To test mediation, indirect effects (in the line with the Sobel method with product of coefficients) were used as described in the SEM literature [45, 46]. Yet, there is some evidence that the Sobel method might be less powerful and trustworthy than bootstrapping when testing indirect effects [47]. For these reasons, the current study also reported the results of the mediation with bootstrapping as recommended in the literature [47].

For Model 1 in the path analysis, the hypothesized model had perfect fit, $\chi^2(3) = 1.36$, $p > .05$, CFI = 1.00, RMSEA = .00 (RMSEA CI ranged from .00 to .09). Although the Wald test could be used to evaluate how dropping significant or nonsignificant paths change the model fit, the current study opted not to modify the models. First, all the parameters were important for the theoretical framework. Second, model fit indexes are only guides. If the guides are followed as a standard rule, it can reject important theoretical models [48]. Lastly, the direct and indirect relationships may have an important scientific contribution for this sample.

The direct effects for the final model are summarized in Table 3 and Fig. 2. Specifically, meeting parents' expectations (unstandardized coefficient = −.02, $p > .05$), parent–child conflict (unstandardized coefficient = .04, $p > .05$), and gender (unstandardized coefficient = .10, $p > .05$) were not directly related to depressive symptoms, while family cohesion was not related to self-deprecation, (unstandardized coefficient = .02, $p > .05$). Meeting parents' expectations (unstandardized coefficient = −.47, $p < .05$) was negatively and significantly related to self-deprecation. Parent–child conflict (unstandardized coefficient = .31, $p < .05$) was positively related to self-deprecation. Next, women reported higher self-deprecation than men (unstandardized coefficient = .23, $p < .05$). Also, family cohesion (unstandardized coefficient = −.18, $p < .05$) was negatively related to depressive symptoms, and self-deprecation (unstandardized coefficient = .36, $p < .05$) was positively related to depressive symptoms.

Self-deprecation served as an intervening variable in the current study. Table 4 shows the results from the indirect effect (in the line with the Sobel method) and bootstrapping mediation. Meeting parents' expectations (unstandardized coefficient = −.17, $p < .05$) were significantly and negatively related to depressive symptoms through self-deprecation. Also, parent–child conflict (unstandardized coefficient = .11, $p < .05$) and gender (unstandardized coefficient = .08, $p < .05$) were significantly and positively related to depressive symptoms through self-deprecation. Overall, since (1) the direct paths were not

Table 3 Direct effects

	Unstnd	SE	Stnd
Predicting self-deprecation			
Meeting parents' expectations	−.47*	.11	−.33
Parent–child conflict	.31*	.08	.29
Gender	.23*	.09	.17
Family cohesion	.02	.08	.02
Predicting depressive symptoms			
Meeting parents' expectations	−.02	.08	−.02
Parent–child conflict	.04	.06	.05
Gender	.10	.07	.09
Family cohesion	−.18*	.06	−.21
Self-deprecation	.36*	.06	.47

Unstnd unstandardized values, *Stnd* standardized values

* $p < .05$

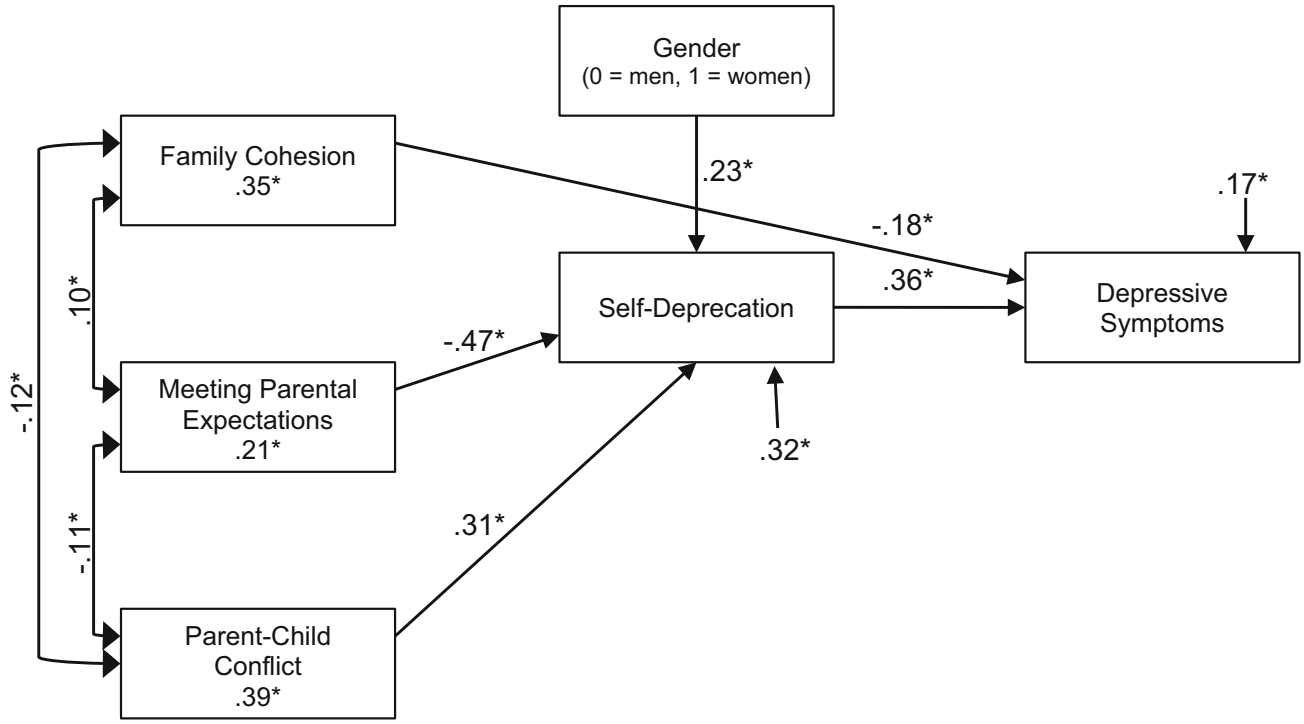

Fig. 2 Final model depicting family qualities, self-deprecation, and depressive symptoms of Zoroastrian young adults without non-significant paths. *Notes* * $p < .05$. Only the unstandardized output is presented. $\chi^2(3) = 1.36$, $p > .05$, CFI = 1.00 and RMSEA = .00. Non significant paths are not shown

significant as mentioned in earlier sections, and (2) similar findings were obtained through bootstrapping (see Table 4), these results indicated self-deprecation is a strong mediator for the association between three independent variables (i.e., meeting parent's expectation, parent–child conflict, and gender) and depressive symptoms.

Discussion

Zoroastrians are a growing population of immigrant minorities in North America [12], yet virtually no studies exist on the health and well-being of this population. According to the developmental contextual framework, individual and contextual qualities (e.g., family) are important to individuals' development. Thus, the current study used path analyses to examine how individual qualities and family qualities related to depressive symptoms among Zoroastrian young adults from immigrant families.

Similar to studies with non Zoroastrian samples, self-deprecation was positively related to depressive symptoms [15, 18]. According to the vulnerability model, having deprecating views of self make individuals more susceptible to experiencing day-to-day interactions and life events as more challenging, less manageable, and/or frustrating, ultimately increasing risk of developing depressive symptoms [18]. This may be especially true for Zoroastrian young adults from immigrant families who may deal with acculturative stress, discrimination [10], and/or challenges associated with young adulthood [4]. Also similar to studies with other ethnic groups [2, 20], young Zoroastrian women reported significantly higher self-deprecation than

Table 4 Indirect effects

	Sobel			Bootstrapping		
	UnStnd	SE	Stnd	Stnd	Lower CI	Upper CI
Meeting parents' expectations → Self-deprecation → Depressive symptoms	−.17*	.05	−.15	−.15*	−.28	−.09
Parent–child conflict → Self-deprecation → Depressive symptoms	.11*	.03	.14	.14*	.03	.19
Gender → Self-deprecation → Depressive symptoms	.08*	.03	.08	.08*	.02	.17

Unstnd unstandardized values, *Stnd* standardized values. *CI* confidence interval at 95 %. This confidence interval is bias-corrected bootstrap confidence intervals. Similar results were obtained through bootstrapping approaches as Sobel

* $p < .05$

men, leading to increased depressive symptoms. Women may engage in more negative rumination and have more emotional reactivity, which can decrease their confidence in their own abilities. Zoroastrian women are also more likely to stay unmarried [7, 22] or marry someone outside the culture which can create additional stress for women in the Zoroastrian community [7].

The negative relationship between family cohesion and young adults' depressive symptoms is well documented in the literature [23–25]. In the path model, family cohesion was only directly related to Zoroastrian young adults' depressive symptoms. A cohesive family can potentially be a safe place for young adults to vent and/or cope with stressors. Conversely, experiencing emotional distance from family members can increase feelings of loneliness and despair. For young adults in immigrant families, especially in cultures where family unity is highly valued (e.g., Zoroastrians [10]), a lack of family bonding can be even more detrimental.

Meeting parents' expectations was negatively related to depressive symptoms, while parent–child conflict was positively related to depressive symptoms through self-deprecation. This could be partially explained by the importance of respect for older generation among Zoroastrians. If Zoroastrian young adults believed their behaviors were inconsistent with their parents' expectations and/or had conflict with parents, it could result in self-deprecating thoughts. This may be especially true if young adults feel the parents sacrificed their own livelihood to move to North America for their children. Conversely, when young adults make their parents proud, meet their parents' expectations, and avoid parent–child conflict they may be less likely to engage in self-deprecating thoughts. This study also provided additional support that self-concept can be a mediator between family qualities and mental health. In this study, self-deprecation mediated the relationship between two perceived family qualities (i.e., parent–child conflict, meeting parents' expectations) and depressive symptoms. Receiving negative messages (e.g., conflict, unmet expectations) can put the child at-risk for forming negative self-perceptions that can increase susceptibility to symptoms of depression [36].

Implications for Practice

This study's findings along with previous research suggest that prevention and intervention approaches could target both individual qualities and family dynamics. For example, cognitive-behavioral therapy (CBT) can be used to promote cognitive change, such as decreasing self-deprecating thoughts. Meta-analyses have shown cognitive-behavioral therapy to be effective in decreasing depression [49], including in primary care settings [50]. Also, interpersonal therapy could help young Zoroastrian adults learn how to manage relationships with parents (e.g., coping with conflict, discussing expectations), adapt to changes in relationships with parents or changes in life due to transitions associated with young adulthood, and/or manage acculturative stress. A meta-analysis demonstrated that interpersonal therapy can be effective in treating depression [51]. And finally, family therapy approaches that involve the parent and young adult may be useful in promoting more effective family dynamics as a way to diminish risk of depressive symptoms. However, each of these approaches are cautiously recommended since there is a lack of concrete evidence regarding the effectiveness of CBT, interpersonal therapy, or family therapy approaches with Zoroastrian young adults and/or their families.

Culturally adapted programs could be developed for working with Zoroastrian young adults and their families. Mental health practitioners working with Zoroastrian families could adapt programs that have been developed for other minority and/or immigrant populations such as (1) the Bicultural Effectiveness Training to decrease parent-adolescent cultural conflict [52], or (2) the Bridges/Puentes program that teaches individual coping strategies, promotes family strengths, and emphasizes family cohesion as a cultural asset [53].

Limitations and Future Direction

Despite this study's contributions to the literature, this study has limitations that should be acknowledged. First, the cross-sectional nature of the study makes it impossible to establish the direction of relationship between variables (e.g., more depressed individuals might develop more self-deprecation). Future studies could use longitudinal designs to better assess the directionality of the relationships between the variables. Second, the data were limited to self-report surveys from one respondent (i.e., the young adult), which can inflate the strength of associations between variables due to shared method variance. Future studies may want to consider adding data from other respondents (e.g., parents). Third, the scale used to measure parent–child conflict only tapped into one dimension of conflict (i.e., frequency). It would be beneficial for future studies to consider other dimensions such as conflict style, intensity, and degree of resolution. Also, larger sample sizes would allow for the comparison of the structural equation models for men and women.

This study was one of a few studies that looked at meeting parental expectations and mental health in immigrant families, but more research is needed. It is possible that meeting parental expectations is not as important in

ethnic/cultural groups that have a stronger emphasis on individualism over collectivism. Future studies should also consider how various family qualities interact in relation to mental health of Zoroastrian young adults. For example, not meeting parental expectations can potentially fuel parent–child conflict [24]. However, the reverse relationship is also possible; that is, young adults may intentionally ignore parents' expectations because they feel unheard due to conflict with parents. Also, conflict with parents may not be as detrimental in homes characterized by high family cohesion (e.g., this has been shown in other ethnic groups such as Latino [54]). And finally, research on the Zoroastrian community would benefit from mixed methods that incorporate qualitative methods (e.g., focus groups, interviews) to allow more in-depth exploration of individual and family qualities in relation to mental health.

Conclusions

One of the most important contributions of this study is bringing awareness and providing better understanding of Zoroastrian young adults in the United States for both researchers and practitioners. Consistent with previous studies, the results indicated that both individual qualities and perceived family dynamics relate to self-deprecation and depressive symptoms of young Zoroastrian adults. These results suggested that prevention and interventions for depressive symptoms should target self-concept and perceived interactions with family members. However, because of the lack of research on Zoroastrians, the results should be replicated in other studies on Zoroastrians and implications for practitioners should be implemented cautiously. Looking at other intervention programs that have been created for ethnic groups that emphasize family value is recommended.

Author Contributions Scott Plunkett, Ph.D., and Farin Bakhtiari, M.A., planned and implemented the study. Ms. Bakhtiari was responsible for participant recruitment and data collection. David Alpizar, M.A., ran the statistics and wrote the results. Dr. Plunkett and Ms. Bakhtiari wrote the rest of the manuscript.

Compliance with Ethical Etandards

Conflict of interest There are no conflicts of interest with any of the authors.

References

1. Kessler RC, Bromet EJ. The epidemiology of depression across cultures. Annu Rev Publ Health. 2013;34:119–38.
2. Centers for Disease Control and Prevention. Current depression among adults—United States, 2006 and 2008. Morb Mortal Wkly Rep. 2010;59(38):1229–35.
3. Park MJ, Mulye TP, Adams SH, Brindis CD, Irwin CE. The health status of young adults in the United States. J Adolesc Health. 2006;39(3):305–17.
4. Arnett J. Emerging adulthood(s): the cultural psychology of a new life stage. In: Jensen L, editor. Bridging cultural and developmental approaches to psychology: new syntheses in theory, research, and policy. New York: Oxford University Press; 2011. p. 255–75.
5. Weitzman ER. Poor mental health, depression, and associations with alcohol consumption, harm, and abuse in a national sample of young adults in college. J Nerv Ment Dis. 2004;192(4):269–77.
6. Aalto-Setälä T, Marttunen MM, Tuulio-Henriksson AA, Poikolainen KK, Lönnqvist JJ. One-month prevalence of depression and other DSM-IV disorders among young adults. Psychol Med. 2001;31(5):791–801.
7. Foltz R. Zoroastrians in Iran: what future in the homeland? Middle East J. 2011;65(1):73–84.
8. Prorok CV. Iran. In: Melton JG, Baumann M, editors. Religions of the world: a comprehensive encyclopedia of beliefs and practices. 2nd ed. Santa Barbara: ABC-CLIO; 2010. p. 1490–6.
9. Stepaniants M. The encounter of Zoroastrianism with Islam. Philos East West. 2002;52(2):159–72.
10. Hinnells J. The Zoroastrian diasporas: religion and migration. Oxford: University Press; 1985.
11. Statistical Center of Iran: Selected findings of the 2011 national population and housing census. 2011. Available: http://www.amar.org.ir/Portals/1/Iran/census-2.pdf. Retrieved December, 2015.
12. Rivetna R: The Zarathushti world—a demographic picture. Paper presented at the XVI North American Zarathushti Congress, New York, NY. August 2012. http://www.fezana.org/files/Demographics/Zworld6Sep12.pdf. Retrieved December, 2015.
13. Lerner RM. Developing individuals within changing contexts: Implications of developmental contextualism for human development research, policy, and programs. In: Kinderman TA, Valsiner F, editors. Development of person-context relations. Hillsdale: Lawrence Erlbaum; 1995. p. 13–38.
14. Restifo K, Akse J, Guzman NV, Benjamins C, Dick K. A pilot study of self-esteem as a mediator between family factors and depressive symptoms in young adult university students. J Nerv Ment Dis. 2009;197(3):166–71.
15. Owens TJ. Two dimensions of self-esteem: reciprocal effects of positive self worth and self-deprecation on adolescent problems. Am Soc Rev. 1994;59:391–407.
16. Supple AJ, Su J, Plunkett SW, Peterson GW, Bush KR. Factor structure of the Rosenberg self-esteem scale. J Cross Cult Psychol. 2013;44:748–64.
17. Farruggia S, Chen C, Greenberger E, Dmitrieva J, Macek P. Adolescent self-esteem in cross-cultural perspective: testing measurement equivalence and a mediation model. J Cross Cult Psychol. 2004;35:719–33.
18. Orth U, Robins RW, Roberts BW. Low self-esteem prospectively predicts depression in adolescence and young adulthood 2008. J Personal Soc Psychol. 2008;95(3):695–708.
19. Plunkett SW, Henry CS, Robinson LC, Behnke A, Falcon PC. Adolescent perceptions of parental behaviors, adolescent self-esteem, and adolescent depressed mood. J Child Fam Stud. 2007;16(6):760–72.
20. Kling KC, Hyde JS, Showers CJ, Buswell BN. Gender differences in self-esteem: a meta-analysis. Psychol Bull. 1999;125(4):470–500.
21. Hyde J, Mezulis A, Abramson L. The ABCs of depression: integrating affective, biological, and cognitive models to explain

the emergence of the gender difference in depression. Psychol Rev. 2008;115(2):291–313.
22. Choksy JK. Gender and religion: gender and Zoroastrianism. In: Jones L, editor. Encyclopedia of religion, vol. 5. 2nd ed. Detroit: Macmillan; 2005. p. 3371–5.
23. Harris T, Molock S. Cultural orientation, family cohesion, and family support in suicide ideation and depression among African American college students. Suicide Life Threat. 2000;30(4):341–53.
24. Dennis J, Basanez T, Farahmand A. Intergenerational conflicts among Latinos in early adulthood: separating values conflicts with parents from acculturation conflicts. Hisp J Behav Sci. 2010;32(1):118–35.
25. Reinherz HZ, Paradis AD, Giaconia RM, Stashwick CK, Fitzmaurice G. Childhood and adolescent predictors of major depression in the transition to adulthood. Am J Psychiatry. 2003;160(12):2141–7.
26. Olson DH. Circumplex model of marital and family systems. J Fam Ther. 2000;22:144–67.
27. Johnson HD, Lavoie JC, Mahoney M. Interparental conflict and family cohesion: predictors of loneliness, social anxiety, and social avoidance in late adolescence. J Adolesc Res. 2001;16(3):304–18.
28. Cumsille P, Epstein N. Family cohesion, family adaptability, social support, and adolescent depressive symptoms in outpatient clinic families. J Fam Psychol. 1994;8(2):202–14.
29. Guassi Moreira JF, Telzer EH. Changes in family cohesion and links to depression during the college transition. J Adolesc. 2015;43:72–82.
30. Wang L, Heppner PP. Assessing the impact of parental expectations and psychological distress on Taiwanese college students. Couns Psychol. 2002;30:582–608.
31. Agliata AK, Renk K. College students' affective distress: the role of expectation discrepancies and communication. J Child Fam Stud. 2009;18(4):396–411.
32. Oishi S, Sullivan HW. The mediating role of parental expectations in culture and well-being. J Personal. 2005;73(5):1267–94.
33. Bradford K, Vaughn LB, Barber BK. When there is conflict: interparental conflict, parent–child conflict, and youth problem behaviors. J Fam Issues. 2008;29(6):780–805.
34. Yeh KH, Tsao WC, Chen WW. Parent–child conflict and psychological maladjustment: a mediational analysis with reciprocal filial belief and perceived threat. Int J Psychol. 2009;45(2):131–9.
35. Garber J, Robinson N, Valentiner D. The relation between parenting and adolescent depression: self-worth as a mediator. J Adolesc Res. 1997;12(1):12–33.
36. Ozdemir Y. Parent-adolescent conflict and depression symptoms of adolescents: mediator role of self-esteem. Dusunen Adam. 2014;27(3):211–20.
37. Kohout FJ, Berkman LF, Evans DA, Cornoni-Huntley J. Two shorter forms of the CES-D depression symptoms index. J Aging Health. 1993;5:179–93.
38. Radloff L. The CES-D scale: a self-report depression scale for research in the general population. Appl Psychol Meas. 1977;7:385–401.
39. Grzywacz JG, Hovey JD, Seligman LD, Arcury TA, Quandt SA. Evaluating short-form versions of the CES-D for measuring depressive symptoms among immigrants from Mexico. Hisp J Behav Sci. 2006;28:404–24.
40. Rosenberg M, Schooler C, Schoenbach C, Rosenberg F. Global self-esteem and specific self-esteem: different concepts, different outcomes. Am Soc Rev. 1995;60:141–56.
41. Bámaca-Colbert MY, Umaña-Taylor AJ, Gayles JG. A developmental-contextual model of depressive symptoms in Mexican-origin female adolescents. Dev Psychol. 2012;48(2):406–21.
42. Torres J: Perceived parenting behaviors and emerging adults' depression in Armenian American families. (Master's thesis). California State University Northridge. 2013.
43. Calix I: Family characteristics and parental behaviors in relation to depressive symptoms in the emerging adult Latino population. (Master's thesis). California State University Northridge. 2013.
44. Tabachnick B, Fidell L. Using multivariate statistics. New York: Pearson; 2007.
45. Holbert RL, Stephenson MT. The importance of indirect effects in media effects research: testing for mediation in structural equation modeling. J Broadcast Electron. 2003;47(4):556–72.
46. Kline RB. Principles and practice of structural equation modeling. New York: Guilford Press; 2005.
47. Hayes AF, Scharkow M. The relative trustworthiness of inferential tests of the indirect effect in statistical mediation analysis: does method really matter? Psychol Sci. 2013;24(10):1918–27.
48. Tomarken AJ, Waller NG. Potential problems with "well fitting" models. J Abnorm Psychol. 2003;112(4):578–98.
49. Butler A, Chapman J, Forman E, Beck A. The empirical status of cognitive-behavioral therapy: a review of meta-analyses. Clin Psychol Rev. 2006;26(1):17–31.
50. Twomey C, O'Reilly G, Byrne M. Effectiveness of cognitive behavioural therapy for anxiety and depression in primary care: a meta-analysis. Fam Pract. 2015;32(1):3–15.
51. Cuijpers P, Geraedts AS, Oppen PV, Andersson G, Markowitz JC, Straten AV. Interpersonal psychotherapy for depression: a meta-analysis. Am J Psychiatry. 2011;168(6):581–92.
52. Szapocznik J, Kurtines WM. Family psychology and cultural diversity: opportunities for theory, research, and application. Am Psychol. 1993;48:400–7.
53. Gonzales NA, LE Dumka, Millsap RE, Gottschall A, McClain DB, Wong JJ, et al. Randomized trial of a broad preventive intervention for Mexican American adolescents. J Consult Clin Psychol. 2012;80(1):1–16.
54. Li Y, Warner LA. Parent-adolescent conflict, family cohesion, and self-esteem among Hispanic adolescents in immigrant families: a comparative analysis. Fam Relat. 2015;64(5):579–91.