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Memories of Parental Rejection in Childhood and Current Psychological Maladjustment Predict Substance Abuse in a Collectivist Religious Country

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Abstract

Findings from data originating in individualist Western cultures, such as the US, generally confirm a significant relation between parental rejection and substance use. However, little is known about individuals raised in patriarchal, collectivist, and predominantly religious non-Western societies. To build on prior research, we drew from Interpersonal Acceptance-Rejection Theory (IPARTheory) to examine relations among parental (maternal and paternal) rejection, psychological maladjustment, and substance use disorder (SUD) in a sample of 960 young adult men in Pakistan. We used MANCOVAs and discriminant function analysis to compare 480 young men diagnosed with SUD with 480 young men without SUD on their memories of parental acceptance and rejection in childhood and on their current level of self-reported psychological maladjustment via the Parental Acceptance-Rejection Questionnaire (PARQ) and Personality Assessment Questionnaire (PAQ). Results showed that remembered *paternal* (but not maternal) rejection, and rejection-related psychological maladjustment were significantly associated with SUD, $F(3, 953) = 1140.39$, $p < 0.001$, $\lambda = 0.218$, $\eta^2 = 0.782$. These two predictors distinguished men with SUD from men with lifelong abstinence with 97.3% accuracy. These results highlight the importance in Pakistan of memories of paternal (versus maternal) rejection, along with the specific form of psychological maladjustment known to be transculturally associated with parental rejection in the etiology of substance abuse.

Keywords Parental acceptance-rejection · Psychological maladjustment · Substance use disorder · Discriminant function analysis · Pakistan

Highlights

- Little is known about the relation between parental rejection and substance abuse outside of Western cultures.
- This study examined that relation in a patriarchal, collectivist, and predominantly Muslim culture.
- Fathers' rejection and psychological maladjustment distinguished with 97.3% accuracy substance abusing men from men with lifelong abstinence.

The etiology of substance use disorder (SUD) comprises a complex network of interacting genetic, biological, social, and cultural factors (Courtney et al., 2017). These factors are primarily transmitted through the family (Swendsen et al., 2009). As such, scholarship that focuses on relations between parenting and child development has found that parenting quality is one of the most important childhood predictors of later-life behavioral problems such as SUD (Arteaga et al., 2010; Bertrand et al., 2013; Hoffman 2015; Krohn et al., 2019; Leza et al., 2021; Mak and Iacovou 2019; Sitnick et al., 2014; Zucker et al., 2008). Current research suggests that warm, affectionate, caring, and supportive parenting is related to reduced risk of SUD and other behavioral problems in adulthood. However, parental rejection, neglect, and abuse have been found to be strongly

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related to the development of SUD and other behavioral problems in later life. In fact, some scholars conceptualize addiction as a coping mechanism for dealing with perceived parental rejection (Cho et al., 2021; Goodman, 2017; Watts et al., 2020).

The connection between parental rejection and SUD is well-established in studies conducted within individualist Western, industrialized, rich, and Democratic (WEIRD) societies such as the USA. However, very little is known about these relations in collectivist, non- WEIRD societies which are often different in important ways from individualistic and egalitarian societies (Yeung et al., 2018). Notably, one third of the world's population lives in Southeast and South Asia. Despite great diversity among them, these populations are generally collectivist, patriarchal, and predominantly religious – especially in the Indian subcontinent. including Pakistan, India, Bangladesh, and Sri Lanka (Windle et al., 2018; Yeung et al., 2018).

Parenting is culturally constructed and guided by parental ethnotheories – culturally derived beliefs and values regarding children, the family, and parenthood (Super & Harkness, 1986; Harkness & Super, 2020). Collectivism versus individualism, and patriarchy versus egalitarianism, are two classes of models representative of these basic cultural values. Collectivism emphasizes subordination of personal goals to the goals of one's in-groups. It also emphasizes the maintenance of harmony among group members, reliance on others for help and guidance, sharing, and a high degree of social responsibility. Individualism, on the other hand, emphasizes individual freedom and independence, preferences for personal goals over the interests of the larger group, and competitiveness (Cheng et al., 2020; Triandis et al., 1988). Patriarchy is a social system where men tend to hold major sociopolitical power, and where they tend to predominate in social privilege, moral authority, and the control of property – sometimes including control of wives and children. This is a fundamentally different cultural ideology from egalitarianism that attributes social equality to all people (Murthi & Hammell, 2021).

Given differences in values and emphases such as these between WEIRD and many non-WEIRD cultures, we sought to explore whether the same patterns of relations exist among parental rejection, psychological maladjustment, and SUD in Pakistan – a collectivist, patriarchal, and predominantly Muslim country – as generally exists in WEIRD, individualist, egalitarian countries such as the US. We explored these relations from the perspective of interpersonal acceptance-rejection theory (IPARTheory), which was shown in an earlier study within the US (Campo & Rohner, 1992) to be especially effective in helping to understand and explain why information about adults' memories of parental rejection in childhood along with their current psychological maladjustment distinguished substance abusers from non-abusers with 87.5% accuracy. IPARTheory asserts that the experience of parental rejection in childhood tends to lead transculturally to a specific form of psychological maladjustment known as the acceptance rejection syndrome. In turn this expression of maladjustment is postulated in the theory to be associated later in life with the development of substance abuse disorder (SUD) and other psychological and behavioral problems (Rohner & Britner, 2002). These responses to perceived rejection are thought in the theory to represent distressed individuals' attempts to cope with the emotional pain associated with the experience of rejection by an attachment figure.

Interpersonal Acceptance-Rejection Theory (IPARTheory)

Interpersonal acceptance-rejection theory (IPARTheory) is an evidence-based theory of socialization and lifespan development that attempts to predict and explain pancultural effects, causes, and other correlates of interpersonal acceptance-rejection, especially parental acceptance-rejection. The theory postulates that people everywhere – regardless of cultural, racial, gender, and other such defining conditions – understand themselves to be cared about (accepted) or not cared about (rejected) by parents and others in the same four ways. These ways include the perception of warmth and affection from significant others (e.g., parents) – or alternatively, the perception of coldness and lack of affection from them. Additionally, they include perceptions of hostility and aggression, and indifference and neglect. Finally, they also include undifferentiated rejection, which refers in IPARTheory to individuals' feeling that the significant other does not really like, want, appreciate, value, love, or care about them in other ways without necessarily having objective indicators present that the significant other is aggressive, neglecting, or rejecting in other ways.

The theory also postulates that people everywhere – regardless of cultural, racial, gender, and other such conditions – tend to respond in the same seven to 10 ways when they perceive themselves to be rejected by their attachment figures. These effects of perceived rejection include the development of (1) hostility, aggression, passive aggression, or problems with the management of hostility and aggression; (2) dependence or defensive independence depending on the form, frequency, intensity, and duration of the perceived rejection; (3) impaired self-esteem; (4) impaired self-adequacy; (5) emotional unresponsiveness; (6) emotional instability; and (7) negative worldview. Collectively the seven personality dispositions are known in IPARTheory as the acceptance-rejection syndrome and constitute a well-studied form of psychological maladjustment (Rohner, 2021).

Additionally, three other personality dispositions have been added in recent years to the acceptance-rejection syndrome. These include (8) interpersonal anxiety; (9) emotional insecurity; and especially for children, 10) cognitive distortions. Scores of studies with several hundred thousand children and adults on every continent except Antarctica support these two basic postulates of IPARTheory. Much of this literature has been summarized in Rohner (2021), in 13 meta-analyses (Ali et al., 2015a, 2015b, 2019; Khaleque, 2013, 2015, 2017; Khaleque & Rohner, 2012a, 2012b, 2002b; Rohner & Khaleque, 2003, 2010), and elsewhere.

SUD in the Sociocultural Context of Pakistan

Addictive drugs are widely available without a prescription in Pakistan (Ali et al., 2020). Because of that, the United Nations Office on Drugs and Crime (UNODC, 2013) estimated that 6.7 million Pakistanis between the ages of 15 and 64 used drugs in 2013. The report also estimated that 4.2 million people suffered from SUD. Treatment facilities for substance misuse, however, are severely limited in Pakistan. Among those that do exist, services tend to be substandard and not evidence-based (Sarkar et al., 2021). Moreover, private treatment tends to be unaffordable for most Pakistanis, many of whom are poor. Consequently, only 33,000 people were reported by UNODC in 2013 to have received substance abuse treatment (UNODC, 2013). Ninety percent of those people who received treatment, however, relapsed later (Yaqub, 2013).

It is not wholly clear why such a large number of people become involve in substance use in Pakistan despite being culturally condemned and stigmatizing there. However, as noted earlier, IPARTheory expects the experience of parental rejection in childhood to place individuals at heightened risk for developing SUD and other such disorders. This expectation was confirmed by Campo & Rohner (1992) in WEIRD individualist US, but it has not yet been confirmed in a non-WEIRD collectivist society such as Pakistan. Because of that uncertainty we tested three hypotheses in this study. First, we hypothesized that (1) adults' memories of parental (maternal and paternal) rejection in childhood would be associated with the specific form of psychological maladjustment described in IPARTheory's acceptance-rejection syndrome. Additionally, we hypothesized that (2) this form of maladjustment would be associated with the development of substance abuse. Further, we hypothesized that (3) adults' memories of both maternal and paternal rejection in childhood, as possibly mediated by the level of adults' psychological maladjustment, would accurately differentiate individuals with SUD from individuals with lifelong abstinence (LLA).

Method

Sample

Men with SUD were recruited from 29 rehabilitation centers located in 11 major cities of Pakistan. The sociocultural context in Pakistan prevented the inclusion of females with SUD. As already noted, Pakistani society is a patriarchal, collectivist, and religious society where family honor is associated with women. This has led to several incidents of honor killing (Fatima et al., 2017). As a result, women with SUD and their families hide SUD at all costs, making it difficult to get informed consent from potential respondents.

After receiving required permissions from relevant authorities, we identified 480 young men ($M_{age} = 29.22$, $SD = 5.70$) diagnosed with SUD according to the Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM–5; American Psychiatric Association, 2013) criteria. In addition, we administered the Severity of Dependence Scale (SDS; Gossop et al., 1995) among the men with SUD to confirm that those participants met a standard criterion for dependence on drugs. Consistent with official records, all men with SUD self-reported severe dependence on drugs. One hundred forty-seven were addicted to heroin, 120 to injectable forms of opioids, 108 to hash, and 64 were addicted to alcohol. Additionally, 41 men with SUD were addicted to different forms of prescription drugs such as Valium.

The sample of men with LLA was recruited from the same cities using advertisement on social media, websites, and printed flyers. Using this procedure, we recruited 480 non-abusing young men ($M_{age} = 28.54$, $SD = 5.52$) with a life-long self-reported abstinence from drug use. After initial screening and consenting to participate over the telephone, participants visited the Government College University, Lahore, Pakistan to take part in the study. The two groups were matched as evenly as possible on age, family income, and education. Additionally, participants in both samples responded to the General Practitioner Assessment of Cognition (GPCOG; Brodaty et al., 2002) questionnaire to test for possible memory impairment. No potential participant was excluded because of this problem.

Procedures

Following ethical guidelines for behavioral sciences in Pakistan, the research was approved by the Board of Studies and by the Advanced Studies and Research Board. Informed consent of all the participants was obtained before data collection. Urdu translations of all the measures were used. These translations have been extensively used in prior research, and have consistently shown high reliability (e.g., Malik et al., 2014).

Measures

Adult Parental Acceptance-rejection Questionnaire (adult PARQ; short form) for mothers and fathers

Adults' memories of parental acceptance and rejection during childhood were measured using the 24-item short form of the Adult PARQ for fathers and for mothers (Rohner, 2005; Rohner & Ali, 2016a). Items on the measure assess adults' retrospective recollections of maternal and paternal acceptance-rejection in childhood. Four scales are included in the measure. These include warmth/affection (coldness/lack of affection when reverse-scored) (e.g., "My mother [father] said nice things about me"), hostility/aggression (e.g., "My mother [father] punished me severely when she/he was angry"), indifference/neglect (e.g., "My mother [father] paid no attention when I asked for help"), and undifferentiated rejection (e.g., "My mother [father] seemed to dislike me"; Rohner, 2005).

Response options range from 4 (*almost always true*) through 1 (*almost never true*). Possible scores ranged from 24 to 96. Lower scores indicate the remembrance of more parental acceptance, whereas higher scores indicate more parental rejection. The PARQ has been shown to be reliable and valid in hundreds of studies worldwide. Alphas in these studies tend to range from 0.81 through 0.97, with a mean weighted effect size of 0.95 across studies (Khaleque & Rohner, 2002a). In this study, Cronbach's alpha for the father PARQ was 0.91 and 0.90 for the mother PARQ.

Adult Personality Assessment Questionnaire (Adult PAQ)

The Adult PAQ is a 63-item self-report measure that assesses adults' feelings of hostility/aggression (e.g., "I think about fighting or being unkind"); dependency (e.g., "I like my friends to feel sorry for me when I feel ill"); negative self-esteem (e.g., "I feel I am no good and never will be any good"); negative self-adequacy (e.g., "I think I cannot do things well"); emotional unresponsiveness (e.g., "It is hard for me to show the way I really feel to someone I like"); emotional instability (e.g., "I am cheerful and happy one minute and gloomy and unhappy the next"); and, negative worldview (e.g., "For me the world is an unhappy place"; Rohner & Khaleque, 2005). Collectively, these personality dispositions have been shown in IPARTheory's personality sub-theory to be a reliable measure of adults' overall psychological maladjustment. Each of the seven scales on the Adult PAQ contains nine items. Possible scores ranged from 63 to 252, with lower scores indicating better psychological adjustment, and higher scores indicating psychological maladjustment. A meta-analysis of the reliability of the Adult PAQ in nine studies internationally showed that coefficient alpha ranged from 0.70 through 0.88, with a mean weighted alpha of 0.86 (Khaleque & Rohner, 2002a). Cronbach's alpha in the present study was 0.94.

Analytic Plan

A multivariate analysis of covariance (MANCOVA) was used to explore group differences between men with SUD versus men with LLA while controlling for the effect of age, education, and family income. Correlations among major variables were also explored to test hypotheses 1 and 2. The PROCESS macro for SPSS (Hayes, 2022) was used to explore whether psychological maladjustment mediated—as specified in hypothesis 3—the relation between group membership (men with SUD versus men with LLA) and men's memories of maternal and paternal rejection in childhood. We also used discriminant function analysis to identify whether the men's memories of parental (paternal and maternal) rejection in childhood, along with their current self-reported psychological maladjustment, accurately discriminated Pakistani individuals with SUD from individuals with LLA. Further, we explored the relative sensitivity of these variables for identifying individuals with SUD versus individuals with LLA. There were no missing data in this study as surveys were immediately checked for completeness and corrected at the time respondents completed their surveys.

Results

Statistical analyses confirmed that men with SUD and men with LLA did not differ significantly in age [$t(958) = 1.86$, $p = 0.06$), family income [χ^2 (4, $N = 958$) = 1.19, $p = 0.88$], or education (in number of years), [$t(958) = 0.28$, $p = 0.78$; $M = 7.64$, $SD = 4.28$ (for men with SUD) and $M = 7.57$, $SD = 3.90$ (for men with LLA)]. Family income was categorized as poor, lower middle class, middle class, upper middle class, and rich according to the Pakistan Economic Survey 2016–2017 (Economic Adviser's Wing, Finance Division, Government of Pakistan, 2017) and Global Wealth Report (Credit Suisse, 2017).

Group Differences

Results from the MANCOVA indicated a statistically significant difference between groups on both independent variables (i.e., remembered acceptance-rejection and psychological maladjustment), after controlling for the covariates, $F(3, 953) = 1140.39$, $p < 0.001$, $\lambda = 0.218$, $\eta^2 = 0.782$. Independent samples *t*-tests were used to further investigate differences between men with SUD and men with LLA on scores of remembered parental acceptance-rejection and on

Table 1 Mean differences between men with SUD ($n = 480$) and men with LLA ($n = 480$) on remembered parental rejection and psychological maladjustment

Variables	Substance Abusers		Non-abusers		*t*(958)	*p*	*Cohen's d*
	M	*SD*	*M*	*SD*			
Father PARQ total	52.43	(9.31)	43.53	(8.63)	16.46	0.001	0.91
Mother PARQ total	36.71	(7.46)	36.84	(6.33)	−0.32	0.61	−0.02
PAQ Total	183.24	(16.36)	124.57	(17.37)	66.81	0.001	3.54

Mother PARQ Parental Acceptance-Rejection Questionnaire, Mother, *Father PARQ* Parental Acceptance-Rejection Questionnaire, Father, *PAQ* Personality Assessment Questionnaire

Table 2 Intercorrelations among study variables, by group

Variable	1	2	3
Men with SUD ($n = 480$)			
1. Maternal rejection	–		
2. Paternal rejection	0.18*	–	
3. Adjustment	0.23*	0.46*	–
Men with LLA ($n = 480$)			
1. Maternal rejection	–		
2. Paternal rejection	0.23*	–	
3. Adjustment	0.25*	0.35*	–

*$p < 0.001$, $N = 960$

self-reported psychological maladjustment (see Table 1). Men with SUD remembered their fathers

(but not their mothers) as having been significantly more rejecting during their childhood than did men with LLA. Men with SUD also reported significantly more rejection-related psychological maladjustment than did men with LLA. In fact, men with SUD tended to self-report overall serious psychological maladjustment whereas men with LLA tended to self-report more-or-less positive adjustment. Moreover, both men with SUD and men with LLA tended on average (mean) to remember their mothers as having been accepting. The effect size (Cohen's *d*) for remembered paternal rejection revealed a 51.6% non-overlap between groups whereas the effect size for rejection-related psychological maladjustment revealed 81.1% non-overlap between groups (see Cohen, 1988).

Intercorrelations Among Study Variables

Table 2 shows that memories of maternal and paternal rejection in childhood, and adults' psychological maladjustment are all significantly intercorrelated among both men with SUD and men with LLA. These results confirm hypotheses 1 and 2 which state that (1) adults' memories

of parental (maternal and paternal) rejection in childhood would be associated with the specific form of psychological maladjustment described in IPARTheory's acceptance-rejection syndrome, and (2) this form of maladjustment would be associated with the development of substance abuse.

Because all three predictor variables (i.e., maternal and paternal rejection and psychological maladjustment) are significantly intercorrelated in both groups, the likelihood is enhanced that psychological maladjustment is a significant mediator between maladjustment and adults' memories of maternal and paternal rejection in childhood, as stated in hypothesis 3. To explore that possibility, we conducted mediational analysis using the PROCESS macro in SPSS.

Mediation Analysis

Hypothesis 3 states that adults' memories of both maternal and paternal rejection in childhood, as possibly mediated by the level of adults' psychological maladjustment, would accurately differentiate individuals with SUD from individuals with lifelong abstinence (LLA). To test hypothesis 3, we employed the PROCESS macro for SPSS (Hayes, 2022). Results of analyses showed that the direct effect of remembered *paternal* rejection on psychological maladjustment was significant ($b = 1.914$, $SE = 0.089$, $p < 0.001$, 95% CI [1.74, 2.09]). Additionally, the direct effect of psychological maladjustment on group membership (SUD versus LLA) was significant ($b = 0.434$, $SE = 0.068$, $p < 0.001$, 95% CI [0.30, 0.57]). However, the direct effect of remembered paternal rejection on group membership was not significant ($b = -0.007$, $SE = 0.017$, $p = 0.703$, 95% CI [−0.04, 0.03]), though the indirect effect of paternal rejection on group membership as mediated by psychological maladjustment was significant (Indirect Effect = 0.830, $SE = 0.131$, 95% CI [0.669, 1.174]).

The direct effect of remembered *maternal* rejection on psychological maladjustment was significant ($b = 0.354$, $SE = 0.162$, $p = 0.29$, 95% CI [0.04, 0.67]). Additionally, the direct effect of psychological maladjustment on group membership was also significant ($b = 0.418$, $SE = 0.069$, $p < 0.001$, 95% CI [0.28, 0.55]). Finally, the indirect effect of remembered maternal rejection on group membership as mediated by psychological maladjustment was significant (Indirect Effect = 0.148, $SE = 0.076$, 95% CI [0.015, 0.317]).

Taken together, the relation between group membership and memories of both maternal and paternal rejection in childhood were significantly mediated by adults' psychological maladjustment. However, memories of maternal rejection but not paternal rejection also had a *direct* effect on group membership.

Discriminant Function Analysis (DFA)

Stepwise DFA was used to predict group membership (men with SUD versus men with LLA) based on the three

Table 3 Results of stepwise discriminant function analysis of the predictor variables

Steps	Predictors	Correlation with group membership	Unstandardized canonical coefficient	Standardized canonical coefficient	λ	*p*
1	Mother PARQ	−0.041	−0.027	−0.176	0.248	0.00
2	Father PARQ	0.262	0.040	0.355	0.224	0.00
3	PAQ	0.919	0.058	0.979	0.218	0.00

$df1 = 1$, $df2 = 958$

PARQ Parental Acceptance-Rejection Questionnaire, *PAQ* Personality Assessment Questionnaire

quantitative predictors including maternal rejection, paternal rejection, and psychological maladjustment, respectively. Results of DFA indicated that two of these variables (paternal rejection and psychological maladjustment) robustly discriminated membership in the two groups. This fact was evident by significant differences in tests of equality of groups means (paternal rejection, $F(1, 958) = 235.93$, $p < 0.001$, $\lambda = 0.80$; psychological maladjustment, $F(1, 958) = 2897.50$, $p < 0.001$, $\lambda = 0.25$). Though significant, the test of equality between means maternal rejection was small (maternal rejection, $F(1, 958) = 5.74$, $p = 0.017$, $\lambda = 0.99$). A high canonical correlation of 0.88 (Eigenvalue = 3.58) suggested that the model explained 77% of the variation across men with SUD and men with LLA. Further, a significant Wilk's Lambda [$\lambda = 0.218$, $p < 0.001$; χ^2 (3, $N = 960$) = 1455.87] showed the significance of the discriminant function: It suggested that only 2% of the variability was left unexplained by the model. Results of the DFA are displayed in Table 3.

Table 4 shows the accuracy of the models presented above. The use of these three variables (especially paternal rejection, and psychological maladjustment, but also maternal rejection to a very slight degree) correctly classified with 97.3% accuracy the respondents into men with SUD versus men with LLA. The DFA misclassified only 26 cases out of a total sample of 960 respondents.

Sensitivity of variables to diagnose SUD

The receiver operating characteristic (ROC) curve was used to investigate the sensitivity of each of these variables for distinguishing men with SUD from men with LLA. The Area Under Curve (AUC) is an indicator of sensitivity and specificity of these variables for diagnosing substance abuse. AUC is presented in Fig. 1. Scores on psychological maladjustment were well above the reference line (AUC = 0.99, $p < 0.001$). Scores for remembered paternal rejection were also above the reference line (AUC = 0.76, $p < 0.001$).

These results show the relative sensitivity of rejection-related psychological maladjustment and remembered *paternal* rejection for discriminating men with SUD from men with LLA. Scores for remembered maternal rejection were mostly below the reference line (AUC = 0.45, $p = 0.016$), thus revealing that remembrance of maternal acceptance-rejection by itself was not a good predictor for distinguishing Pakistani men with SUD from men with LLA.

Table 4 Classification results for discriminant function analysis of men with SUD and men with LLA

Actual group membership	Number of cases	Predicted group membership	
		Substance abusers	Non-abusers
Substance abusers	480	469 (97.7%)	11 (2.3%)
Non-Abusers	480	15 (3.1%)	465 (96.9%)

Percent of cases classified correctly: 97.3%

Discussion

Core findings of this study in a collectivist, patriarchal, and predominantly religious society suggest that results are remarkably consistent with essentially the same study in the individualistic USA by Campo & Rohner, (1992) and to some degree in a related study in individualistic Italy (Caliendo et al., 2017). Specifically, in Pakistan, the USA, and Italy, men with SUD remembered their fathers as having been significantly more rejecting than did men with LLA. In the American study, however, men with SUD also remembered their mothers as having been significantly more rejecting than did men with LLA, though remembered maternal rejection in childhood there did not predict substance abuse as well as remembered paternal rejection. Beyond that, men with SUD in both countries—in comparison to men with LLA—reported a great deal more psychological maladjustment of the form known to be transculturally associated with perceived parental rejection. Together, remembered parental rejection and psychological maladjustment correctly distinguished men with SUD from men with LLA with 97.3% accuracy in Pakistan, and with 87.5% accuracy in the USA.

One possible explanation for the fact that these variables were better predictors of substance abuse in Pakistan than in the US may be attributable to the fact that we recruited only men with severe dependence, as indicated by scores on the Severity of Dependence Scale. We did not test diverse

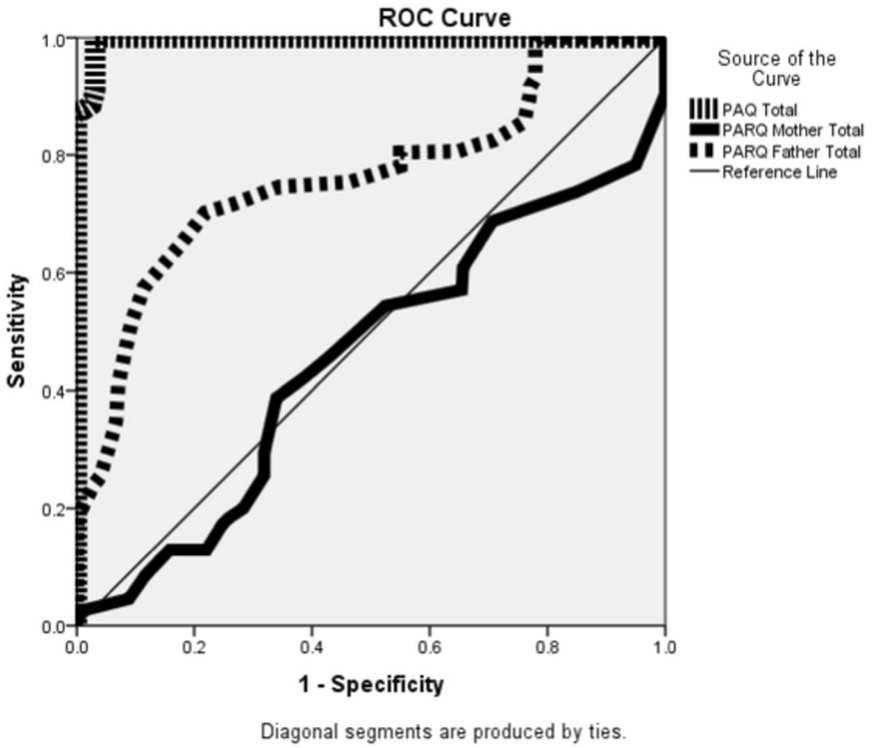

Fig. 1 Sensitivity and Specificity of Remembered Parental Acceptance-Rejection and Psychological Adjustment. *Note*. The line in the center is the reference line; the thick line running over the reference line represents Mother PARQ scores; the thick dotted line above the reference line indicates Father PARQ scores, and the thick hashed line (on the axes) represents PAQ scores

levels of substance use as was done in the American study. Future studies in Pakistan should include men with SUD at lesser levels of drug dependence.

Interestingly, there were no significant differences in remembered *maternal* rejection between men with SUD and men with LLA in Pakistan. In fact, both groups remembered their mothers as having been more-or-less accepting. Studies in other parts of the world, however, have found clear differences in remembered maternal rejection across men with SUD and men with LLA (e.g. Campo and Rohner 1992; Kellam et al., 1975; Kellam et al., 1983). These inconsistent results might be explained by religious values in Pakistani culture (Smith, 2015). That is, according to Pakistani religious and cultural values, mothers are especially valued by children (Akhter & Munir, 2014). Moreover, paradise (heaven) itself is thought to be closely linked to relationships with mothers (Khan, 1994). Therefore, Pakistani children tend to be raised with a distinctly positive bias toward their mothers, while fathers often remain emotionally distant (Holden & Ashraf, 2016). As a result, children often have a stronger emotional bond with their mothers than with their fathers. Further research is required to fully explore this culture-specific hypothesis.

Fathers in patriarchal societies such as Pakistan are sometimes associated with harsh physical discipline, and demands for obedience (Holden & Ashraf, 2016). These relationships are unlike those with mothers, which tend to be defined by nurturing care and love. Unconditional obedience to fathers is expected of children in Pakistan (Khan, 1994)—it is against religious beliefs to speak against a father. Men with distant father relations during their childhood—which is common in Pakistan—should be considered in future research.

The overall self-reported psychological maladjustment of the form known to be associated panculturally with parental rejection was much worse among Pakistani men with SUD than among men with LLA. These results are consistent with findings from other geographic locations around the world using different measures of psychological maladjustment (e.g., Brook et al., 2015). Findings from this study highlight the need to consider the role of fathers in substance abuse intervention and prevention. In collectivist and predominantly religious societies such as Pakistan (Smith, 2015), substance abuse is attributed to sin, and can lead to social boycott (Malik et al., 2014). Compounded with rejection by significant others and a realization of committing sin, these behaviors can have lethal consequences for men with SUD in such societies.

This study focused exclusively on males with SUD. In order to contextualize our findings, and to expand scholarship to women, more qualitative exploration with women is required in Pakistan to better understand these findings. While a strength of this study was its focus on both paternal and maternal acceptance-rejection, we did not investigate other potential interpersonal relationships that are known to sometimes influence the development of substance use. Some of these relationships include intimate partners, spouses, peers, teachers, and others (e.g., Bares et al., 2017). Future studies should include interpersonal relationships

such as these. In addition, street addicts (i.e., men with SUD who spend their lives on the street) and men with SUD who were not receiving any treatment were not included in this study. Prior research has found street addicts to be a unique population in Pakistan and elsewhere. This population may require special attention (see Banaag, 2016; Morewitz, 2016) and studies should include individuals with SUD who are not receiving any treatment. Certainly, street addicts are likely to have seriously conflicted relationships with parents, and with other important people in their lives. Finally, we note that measures included in our project were theory-driven. As a result, we did not use other measures that might have helped explain differences in substance use, such as parental history of substance use. Future research should continue to disentangle the social-psychological mechanisms associated with the etiology of substance use among individuals living in Pakistan and other patriarchal, collectivist, and religious cultures.

Despite limitations such as these, results of this research do provide additional support for IPARTheory's expectation that substance abuse tends panculturally to be associated with adults' memories of parental rejection (especially *paternal* rejection) in childhood and with the form of maladjustment derivative from that rejection. Future research should, however, use a longitudinal research design to test for the probable causal chain from remembered parental rejection in childhood to resultant psychological maladjustment and thence to the development of SUD.

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Compliance with Ethical Standards

Conflict of Interest The authors declare no competing interests.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual adult participants included in the study.

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