involving losing social face such as at the receiving end of discrimination and stigmas can lead to psychological distress (Hackett, Steptoe, Lang, & Jackson, 2020; Le, Iwamoto, & Burke, 2020).

Studies have shown that cortisol functions (a term that we use here to refer to cortisol level and glucocorticoid receptor gene) are involved in coping with social face-related stress. Social-evaluative threat, as measured with the Trier Social Stress Test, can significantly elevate one's cortisol level (Dahm et al., 2017; Reschke-Hernandez, Okerstrom, Bowles Edwards, & Tranel, 2017; Turan, Tackett, Lechtreck, & Browning, 2015; Woody, Hooker, Zoccola, & Dickerson, 2018). Moreover, shame emerged from discriminating against one's creativity (Matheson & Anisman, 2009) and social anxiety of public speaking can increase cortisol reactivity (Auer, Calvi, Jordan, Schrader, & Byrd-Craven, 2018; Losiak, Blaut, Klosowska, & Slowik, 2016), and vice versa, the pronounced cortisol reactivity brings out negative emotions (Hellman, Morris, Rao, & Garber, 2015; Kiel & Kalomiris, 2016). Of note, although the past experiences of discrimination are related to cortisol reactivity (Busse, Yim, & Campos, 2017; Doyle & Molix, 2017; DuBois, Powers, Everett, & Juster, 2017; Jackson, Kirschbaum, & Steptoe, 2016; Jackson & Steptoe, 2018), it remains unclear whether cortisol functions are associated with social face.

Cortisol reactivity is greatly regulated by glucocorticoid receptor (McKlveen et al., 2013; Romeo, 2015; Vindas et al., 2017). When cortisol molecules bind to glucocorticoid receptor, glucocorticoid-receptor complex regulates the expressions of anti-inflammatory proteins and pro-inflammatory proteins (Bamberger, Bamberger, Castro, & Chrousos, 1995; Turk & John, 2005). The functions of glucocorticoid receptor are modulated by the polymorphisms in glucocorticoid receptor ($NR3C1$) gene (Kumsta et al., 2008; Plieger, Felten, Splittgerber, Duke, & Reuter, 2018). For instance, the G allele of rs41423247 is related to higher receptor expression and cortisol reactivity than the CC homozygous (Schote et al., 2019; Velders et al., 2012), so the AA genotype of rs10052957 is related to higher expression as compared with the AG/GG genotypes (Rosmond et al., 2000; Sinclair, Fullerton, Webster, & Shannon Weickert, 2012). The two polymorphisms are associated with cortisol reactivity in the context of social stress (Plieger, Felten, Splittgerber, Duke, & Reuter, 2018; Chen, Wang, & Lian, 2015; Nie et al., 2017; Shu, Wang, & Wang, 2016; Zhou et al., 2017). Given these backgrounds, the current study investigates the associations between the polymorphisms of rs41423247 and rs10052957 and social face.

Social face is related to public self-consciousness (Zhang, Cao, & Grigoriou, 2011), a general awareness of viewing oneself as a social object in other's eyes. Social face highlights individuals' desire for projecting their own good social images

Inventory (Cheung et al., 1996, 2010). The Face Scale consists of 11 items (Supplementary Materials 1) that measure the psychometric properties of desire to gain social face or avoid being involved in situations of losing face. For each item, the respondent scored on a 5-point Likert scale ("1" = extremely disagree and "5" = extremely agree) with the statement. The pencil-and-paper forma had the Cronbach's α of 0.73, which is similar to what reported previously ($\alpha = 0.72$ in Fan et al., 2008; $\alpha = 0.61$ in Ng et al., 2012).

Salivary Cortisol Measurement

The college students participated in the study between 1:30 to 2:00 p.m. (Maruyama et al., 2012). Basing on Granger's suggestion (1999), we collected the saliva. The cortisol level was assessed with a commercial enzyme-linked immunosorbent assay kit (Cloud-Clone Corp., China). The optical densities of the mixtures in plate were read with a micro-plate reader (BioRad: iMARK) at wave-length of 450 nm and 630 nm. The standard curve was created with 4-parameter Logistic method. Details of measurement are shown in Supplementary Materials 1. The intra-assay coefficient of variability was less than 10%, and inter-assay coefficient of variability was less than 12%.

Statistical Analysis

Statistical power was tested with the G*Power 3.1 (Faul, Erdfelder, Lang, & Buchner, 2007). The distributions of

72 °C for 10 min. The PCR product was incubated with HinfI at 37 °C overnight. The digested mixtures were analyzed with 10% polyacrylamide gel electrophoresis. Similarly, the rs10052957 was amplified with upstream primer, 5′-GAAGGTGATGTATTCAGACTC<u>G</u> − 3′ and downstream primer 5′- GTA<u>A</u>TGTATTTGTTG<u>G</u>GTGCC -3′. The <u>G</u> in upstream primer was a mutation for producing a restriction enzyme site for   I in PCR product. A 116 bp PCR product was amplified with an 5 min denaturation at 94 °C, followed by 35 cycles of 94 °C for 30 s, 60 °C for 30 s, 72 °C for 30 s, and a final extension at 72 °C for 10 min. The PCR product was incubated with   I at 65 °C overnight. Four participants were not successfully genotyped due to failure in DNA extracting. In this sample, neither rs41423247 (CC = 17, CG = 212, GG = 455; χ^2 = 1.761, = 0.19) nor rs10052957 (AA = 4, AG = 84, GG = 596; χ^2 = 0.305, = 0.54) deviated from the Hardy-Weinberg equilibrium.

Statistical Analysis

Hardy-Weinberg equilibrium was tested with the FINETTI software (Sasieni, 1997). Statistical power was tested with the G*Power 3.1 (Faul, Erdfelder, Lang, & Buchner, 2007).

analysis showed a contribution of rs41423247 ($0 = GG$, $1 = GC/CC$) to public self-consciousness when the variables were controlled one by one, ≥ 0.12, $t \geq 2.86$, ≤ 0.004, but the effect was marginal when all at once, $= 0.07$, adjusted $^2 = 0.06$, $t = 1.88$, $= 0.06$ (Table S 6).

Mediation Analysis

As previous studies indicated that public self-consciousness is positively correlated to social face (Cho, Matsumoto, & Kimura, 2009; Shin, 2013; White, Stackhouse, & Argo, 2018), we replicated this correlation, $= 0.53$, < 0.001. We conducted a mediation analysis with a pathway from public self-consciousness to social face. Of note, considering that rs10052957 was not significantly correlated with the social face and public self-consciousness scores, we excluded nudedzot signific

et al., 2019; Velders et al., 2012) and greater neural response in right dorsolateral prefrontal cortex in working memory tasks (El-Hage et al., 2013), is related to higher social face than the CG/CC group. The high expressed G allele possibly facilitates coping with face-related stress via inhibiting automatic goal-irrelevant information (Putman & Roelofs, 2011; Zuj, Palmer, Malhi, Bryant, & Felmingham, 2017). Thus, different from previous studies that address the influences of