A bias of self-reports among repressors: Examining the evidence for the validity of self-relevant and health-relevant personal reports

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*S*tudies have shown that repressors tend to respond to self-report tools in a positive fashion which distorts the findings of studies based on questionnaires. The present study aimed to examine the way repressors respond to "Self-relevant" scales (which assess variables related to adaptive self-function) in comparison to "Health-relevant" scales (which assess physical and psychological health). Iranian university students ($N = 271$) responded to the Weinberger Adjustment Inventory (to differentiate between repressors and self-assured individuals), Mindful Attention and Awareness Scale, Self-control Scale, Integrative Self-knowledge Scale and Self-compassion Scale (to measure self-relevant variables), Bartone Symptoms checklist and the Depression and Anxiety Subscales of Depression, Anxiety and Stress Subscale (DASS-21) (to measure health-relevant variables). Based on responses to the Weinberger Adjustment Inventory, 101 participants fell into two groups, including repressors and self-assured individuals, and their data were further analysed. Multivariate analysis of variance showed no difference in repressors' scores in health-relevant scales compared to the self-assured group (healthy individuals), but they reported higher scores in adaptive self-relevant scales compared to the self-assured individuals. This study provides new evidence that compared to self-assured individuals, repressors differ in the way they respond to self-relevant versus health-relevant scales.

Keywords: Repression; Self-relevant; Health-relevant; Positive self-evaluation; Weinberger adjustment inventory.

Most psychological studies use self-report tools such as questionnaires and checklists to assess one or more dimensions of mental health. Self-report scales tend to employ a direct method of questioning which lays bare the intent behind scale items. Besides, when interpreting results, investigators often assume and analyse a direct and straightforward relationship between scale scores and the psychological health variable. However, Shedler, Mayman, and Manis (1993) cast doubt on the ability of mental health scales to differentiate genuine mental health problems from the appearance of mental illness propagated by psychological defence mechanisms. Likewise, they point out that in many individuals, apparent psychological wellbeing on mental health scales does not signify genuine psychological health (Shedler et al., 1993). There is a multitude of evidence showing that self-report scales are not the best tools for obtaining information from a significant minority of the population, namely repressors (defined as individuals with a repressive coping style). Indeed, numerous studies have shown that the presence of repressors can skew the results of studies which rely on self-reports (Myers, 2000).

Repressive coping style refers to repressing unpleasant feelings in internal and external threatening situations. From the first few months of life, children express their emotional reactions to the people around them, but as they grow older, they learn that emotional expressions, in addition to their benefits, can carry certain social costs. Thus, they begin to conceal their emotions from others and use various strategies to modify their behaviour, such that by adulthood little correlation is observed between the emotional experience and its expression (King & Emmons, 1990).

Freud (1925/1999; as cited in Mund & Mitte, 2012) defines repression as "a way to keep unwanted feelings unconscious." In fact, repression is a process in which memories, impulses or other threatening desires that trigger anxiety are avoided or driven out of consciousness. Observing and evaluating this process has been fraught with difficulties (Holms, 1990; as cited in Mund & Mitte,

2012). Nevertheless, the concept of "repression" remains popular and has attracted more research interest (Mund & Mitte, 2012).

Weinberger and Schwartz (1990) developed the "Weinberger Adjustment Inventory" (WAI) in an attempt to identify repressors. The WAI assesses two superordinate dimensions; "distress" and "restraint (self-restraint)." The "distress" level (high vs. low) is crossed with the "self-restraint" level (high vs. moderate vs. low) to give six higher order personality styles: reactive, sensitised, undersocialised, oversocialised, self-assured and repressive. Repressors and self-assured individuals are further differentiated using the "repressive defensiveness" dimension. A repressor is thus categorised as an individual with a low distress score and high restraint and defensiveness scores in this analysis.

Weinberger, Schwartz, and Davidson (1979) found that there is a significant discrepancy between levels of self-reported anxiety, and anxiety as assessed by non-verbal tools (i.e. behavioural and physiologic responses) among repressors. This finding has been replicated many times (Derakshan, Eysenck, & Myers, 2007; Myers et al., 2008). The simplest explanation for the difference between results obtained from self-report tools and behavioural and physiologic tools is that repressors experience high levels of anxiety but deny it in self-report instruments (Derakshan & Eysenck, 1999). This denial of distress is a crucial aspect of the repressive trait and facilitates the espousal of an overtly positive self-concept by repressors in which they are optimistic, even-tempered, self-composed and not prone to the adverse effect (Weinberger et al., 1979).

In fact, repressors have been found to respond to many self-report tools positively. Studies have shown that repressors are significantly more likely than non-repressors to believe that negative events are the result of external and unstable factors (Weinberger, 1996) and to rate negative events as less self-descriptive (Codd & Myers, 2009).

Interestingly, regarding personal health, repressors report greater optimism than non-repressors about conditions which are perceived to be controllable by the individual (such as asthma) but not those seen as uncontrollable (such as diabetes) (Myers & Reynolds, 1997, as cited in Myers, 2000). They also report comparatively lower scores of depression (Phipps & Srivastava, 1997) and alexithymia (Derakshan & Myers, 2015), lower levels of physical and psychological symptoms (Howard, Myers, & Hughes, 2017; Myers & Vetere, 1997) and higher levels of comfort (Boden, Hyland, & Dale, 2005). Hauer et al. (2009), for example, found that repressors in a geriatric population under-reported the number of injurious falls. This is despite the finding that there is a relationship between a repressive coping style and physical illness, with repressors having a higher predisposition to some physical conditions such as cancer, cardiovascular diseases and particularly high blood pressure (Boden et al., 2005).

Physiological and behavioural indicators show that repressors experience high levels of arousal when exposed to threatening stimuli. However, to maintain a positive self-image, they use various strategies to keep such stimuli out of conscious awareness (Newton & Contrada, 1992; Ohrmann, Kugel, Egloff, Arolt, & Suslow, 2014). One such strategy is an avoidant interpretive bias which only a few studies so far have examined in repressors facing various threatening situations, and a detailed comparison between responses to self-relevant and self-irrelevant threats is something that needs to be investigated. There is some evidence to suggest that repressors do not use this avoidant interpretive bias in all domains to the same extent. For example, Fox (1993; as cited in Walsh, McNally, Skariah, Butt, & Eysenck, 2015) found that, compared to non-repressors, repressors showed more avoidant interpretive bias when exposed to socially threatening words but not to physically threatening words. Similarly, in a study by Walsh et al., 2015, repressors showed avoidant interpretive bias when faced with ambiguous threats in social and intellectual situations but not physical and health situations.

According to Derakshan et al. (2007), repressors store negative self-relevant schemas in their long-term memory. They appear to be particularly sensitive to self-relevant threats (e.g. social threats) as opposed to self-irrelevant threats (such as physical threats) since the former activates negative self-relevant schemas and threaten the individual's self-esteem (Walsh et al., 2015).

Overall, based on research evidence revealing positive self-evaluation in repressors, standard self-report tools are considered as a weak method for collecting data from repressors, who might make up a significant minority of any sample population, for example, the elderly (Myers, 2010). Therefore, indirect measures which provide access to more objective data such as non-verbal cues may be more useful in eliciting information from repressors than direct measures. In one study, for example, using semi-structured interviews for measuring early experiences, repressors gave more negative information about their fathers than non-repressors, while a questionnaire elicited a more positive image (Myers, 1999; as cited in Myers, 2010). Repressors also achieved higher scores for alexithymia in interviews compared to a questionnaire (Myers, Derakshan & Edmunds, 2009 as cited in Myers, 2010).

Numerous studies have shown that self-report scales are not suitable tools for obtaining information from repressors and these individuals have a tendency toward positive self-evaluation in self-report scales. However, what has not been adequately explored in these studies is whether repressors respond to all self-report scales in the same manner or is it possible that there is a difference in

the way they respond to different self-report scales, with repressors showing greater sensitivity to some scales?

Considering the widespread use of self-report scales in psychological studies and findings which highlight the limitations of self-report scales in studying repressors, the present study was undertaken to examine repressors' responses to self-report scales in comparison with the "self-assured" group (a group considered healthiest in terms of personality patterns based on the WAI). In addition, the paucity of studies examining repressors' reactions to different types of self-reports prompted us to compare repressors' responses to "self-relevant" scales (which measure stable syntonic personality strengths) versus "health-relevant" scales (which measure transient dystonic states of health) and investigate whether repressors and self-assured individuals respond to self-relevant and health-relevant scales differently.

In summary, this study aims to analyse the hypothesis that, compared to self-assured individuals, repressors differ in the way they respond to self-relevant versus health-relevant scales.

METHOD

Participants

Iranian Students served as the research participants. The sample included 174 females and 97 males with a mean age of 22.88 ($SD = 4.87$). Based on responses to the WAI, repressors and self-assured individuals were identified within 271 participants, and ultimately data from these 101 subjects were put through analysis. All participation was voluntary, completely anonymous and in full conformity with institutional ethical guidelines for conducting research. Participants were informed that they were taking part in a study and made fully aware that they could withdraw from the study at any time, if they wished.

Measures

Weinberger's Adjustment Inventory-short form (WAI-SF; Weinberger & Schwartz, 1990) includes 37 items that provide response options ranging from 1 (*incorrect*) to 5 (*correct*). This inventory includes three main scales, each of which has a number of subscales: "Distress" which "provides a general measure of individuals' tendencies to feel dissatisfied with themselves and their ability to achieve desired outcomes and proneness to anxiety, depression, low self-esteem and low well-being are operationally defined as subtypes of distress"; "Restraint" which "encompasses domains related to socialisation and self-control and refers to suppression of egoistic desires in the interest of long-term goals and relations with others" and includes suppression of aggression, impulse control, consideration of others and responsibility; and

"Defensiveness" which includes repressive defensiveness. This inventory has a high internal consistency in various samples and high test–retest reliability (Weinberger & Schwartz, 1990). The appropriate factor structure of WAI has been previously confirmed in an Iranian sample (Saeedi, Ghorbani, & Sarafraz, 2016). This measure had high-internal consistency in the current sample (Cronbach α for distress = .84, for restraint = .75 and for repressiveness = .67). The mean score was 2.13 ($SD = .34$) for distress, 4.21 ($SD = .34$) for restraint and 3.25 ($SD = .42$) for responsiveness.

Mindful Attention and Awareness Scale (MAAS; Brown & Ryan, 2003) measure mindfulness as a naturally occurring personality trait. This scale has 15 items with response options ranging from 1 (*almost always*) to 6 (*almost never*). It has been reported to have appropriate reliability and validity (Ghorbani, Watson, & Hargis, 2008). This measure had high-internal consistency in the current sample (Cronbach α = .86). The mean score was 4.33 ($SD = .77$).

Integrative Self-knowledge Scale (ISK; Ghorbani et al., 2008) has 12 items scored on the 5-point Likert scale, from 0 (*largely untrue*) to 4 (*largely true*) and studies support its reliability and validity (e.g. Ghorbani, Cunningham, & Watson, 2010). This measure had high-internal consistency in the current sample (Cronbach α = .82). The mean score was 4.07 ($SD = .53$).

Self-control Scale-short form (Tangney, Baumeister, & Boone, 2004) has 13 items designed to measure self-control tendency, answered on a 5° Likert scale that ranges from 1 (*not at all*) to 5 (*very much*). The short form of this scale has appropriate reliability and validity (Tangney et al., 2004). This measure had high-internal consistency in the current sample (Cronbach α = .82). The mean score was 3.74 ($SD = .58$).

Self-compassion Scale-short form (SCS-SF; Raes, Pommier, Neff, & Gucht, 2011) contains 12 items with responses arranged on a 5-point Likert scale from 1 (*almost never*) to 5 (*almost always*). This scale measures six factors including self-kindness versus self-judgement, mindfulness versus over-identification and common humanity versus isolation. The reliability of the short form of this scale has been confirmed (Raes et al., 2011). This measure had high-internal consistency in the current sample (Cronbach α = .81). The mean score was 3.61 ($SD = .48$).

Bartone symptoms checklist (Bartone, Robert, Wright & Ingraham, 1989) comprises 20 items and is scored on a 4° Likert scale from 1 (*never*) to 4 (*almost always*). It assesses past physical and psychological symptoms, for example, headaches and upset stomach. The total score of the scale is a general and valid evaluation of physical symptoms and has acceptable internal consistency (Ghorbani et al., 2010). This measure had high-internal consistency in the current sample (Cronbach α = .85). The mean score was 1.46 ($SD = .30$).

Depression, Anxiety and Stress Subscale (DASS-21; Lovibond & Lovibond, 1995) is a collection of 21 items designed to measure the negative emotional states of depression, anxiety and stress. Each of these three sub-scales includes seven items. Participants report the severity of their emotional state in the past week on a 4° Likert range. The three-factor structure of this scale was supported in a study by Lovibond and Lovibond (1995). The depression and anxiety subscales of this scale were used in the present study. This measure had high-internal consistency in the current sample (Cronbachs α for depression = .83, and for anxiety = .76). The mean score for depression was 1.35 (*SD* = .33), and for anxiety was 1.39 (*SD* = .42).

RESULTS

To assign participants to the "self-assured" and "repressor" groups, participants were divided into two groups based on the median of distress scores, and three groups based on the point of 33 and 66% of the composition of restraint and repression scores. After integrating these two dimensions, the six-group WAI typology is derived from crossing high versus low levels of distress with high, moderate and low levels of restraint/repression. The group with a combination of "low distress and moderate restraint/repression" was called the self-assured group while the group with a combination of "low distress and high restraint/repression" was called the repressor group. In this division, 42 individuals fell into the self-assured group, and 59 individuals fell into the repressor group, and their scores entered the next phase of analysis. It should be noted that inequality of group sizes is due to the participants' responses to the WAI (Weinberger & Schwartz, 1990).

Table 1 shows the mean and standard deviation for the "self-assured" and "repressor" groups.

To analyse the results, the two groups of participants were compared in terms of variables related to "adaptive self-function" (ISK, self-control, mindfulness and self-compassion) and variables related to "physical and psychological health" (depression, anxiety and physical symptoms) using two separate multivariate analyses of variance (MANOVA). Selection of separate MANOVA for each collection of variables was performed due to a high correlation between these variables in each group and the distinct nature of the two groups of variables that help prevent alpha inflation in the present study.

First, MANOVA was performed to compare the two groups regarding variables related to "adaptive self-function." The results showed that variables related to "adaptive self-function" are different in the two studied groups (Wilks' Lambda = .81, $F(4, 96) = 5.70$, α = .001, multivariate $\eta^2 = .192$).

TABLE 1
Mean (*SD*s in brackets) for self-assured and repressor groups

Variables	Mean of repressor group (N = 59)	Mean of self-assured group (N = 42)
WAI		
1. Distress	2.06 (.34)	2.23 (.33)
2. Restraint	4.38 (.23)	3.98 (.33)
3. Repressiveness	3.46 (.34)	2.96 (.35)
Integrative self-knowledge	4.21 (.50)	3.88 (.51)
Mindfulness	4.57 (.63)	4 (.83)
Self-control	3.91 (.54)	3.51 (.54)
Self-compassion	3.70 (.49)	3.47 (.44)
DASS-21		
1. Depression	1.29 (.27)	1.44 (.39)
2. Anxiety	1.34 (.43)	1.45 (.41)
Physical symptoms	1.42 (.23)	1.52 (.38)

DASS-21 = Depression, Anxiety and Stress Subscale; WAI = Weinberger Adjustment Inventory.

Follow-up univariate ANOVAs indicated that the two groups are different in terms of mindfulness, $F(1, 99) = 15.73$, $p < .01$, $\eta_P^2 = .14$; ISK, $F(1, 99) = 10.53$, $p < .01$, $\eta_P^2 = .10$; self-compassion, $F(1, 99) = 6.01$, $p < .01$, $\eta_P^2 = .06$; and self-control, $F(1, 99) = 13.41$, $p < .001$, $\eta_P^2 = .12$).

To see which group achieved a higher score in these variables, refer to Table 1. The results of Table 1 and ANOVAs show that the two groups differ in the four variables related to "adaptive self-function." Repressors achieved higher scores in these variables compared to the self-assured group, suggesting that they have a high tendency to present themselves better in these variables.

MANOVA was then performed to assess the difference in variables related to "physical and psychological health" (depression, anxiety and physical symptoms). The results showed that variables related to "physical and psychological health" were not different in the two studied groups, Wilks' lambda = .95, $F(3, 97) = 1.75$, α = .16, multivariate $\eta^2 = .192$.

Follow-up univariate ANOVAs, indicated that the differences between the two groups in physical symptoms, $F(1, 99) = 1.04$, $p < .31$, $\eta_P^2 = .01$; depression, $F(1, 99) = 4.23$, $p < .06$, $\eta_P^2 = .04$; and anxiety, $F(1, 99) = 2.45$, $p < .12$, $\eta_P^2 = .02$, were nonsignificant.

As the results show, there is no difference between repressors and self-assured participants in reporting health status.

DISCUSSION

The present study showed that there is no difference between repressors and self-assured participants in reporting physical and psychological status (depression, anxiety and physical symptoms), despite their difference in levels of restraint and repressive defensiveness. Nevertheless, repressors reported higher scores

in adaptive self-relevant variables (ISK, mindfulness, self-control and self-compassion) compared to the self-assured participants.

Our findings revealed that, compared to self-assured individuals, repressors differ in the way they respond to self-relevant versus health-relevant scales. Probably these participants showed more sensitivity in scales that were directly related to the "adaptive self-function" and described it.

Repressors, regardless of their high scores in restraint and repressive defensiveness, reported higher ISK, mindfulness, self-control and self-compassion compared to self-assured individuals, but they showed no difference in anxiety, depression and physical symptoms scores. In the Weinberger classification, the repressor and the self-assured groups are differentiated from each other according to the extent to which they utilise self-restraint and repressive defensiveness. Repressors report low distress scores, at the same time as making excessive use of repressive defences. This is while repressors score similarly to self-assured individuals in health status reports, they report higher scores in adaptive self-function which raises questions about their approach to responding to self-report scales. Multiple studies have shown a link between adaptive self-function and health. Considering that various studies have shown a negative relationship between depression, anxiety and physical symptoms and measures of integrative self-knowledge (Ghorbani et al., 2010), mindfulness (Brown & Ryan, 2003), self-control (Tangney et al., 2004) and self-compassion (Raes et al., 2011), it should be determined whether repressors are actually more self-aware, mindful, self-controlled and compassionate with themselves. If they were, then one would expect these individuals to report less anxiety, depression and physical symptoms. it is suggested that future studies explore this issue.

In fact, compared to the self-assured group, repressors did report their status regarding self-relevant variables more positively than the self-assured group. This means that despite excessive self-restraint and widespread use of repressive defensiveness that was scored in the WAI, these individuals may be wishfully think that they are more aware, mindful and compassionate with themselves and showed balanced self-control, which can be checked in future studies. These findings are consistent with studies showing that repressors rigidly maintain a positive self-concept characterised by such traits as level-headedness, rationality, composure and imperturbability (Weinberger et al., 1979) and rate negative words as less self-descriptive (Codd & Myers, 2009).

The present study found that repressors report higher scores in adaptive self-function and presented themselves significantly better than the self-assured group in these scales. It is possible that this result is influenced by repressors' focus in direct self-assessment and self-description, which has created a sense of threat in them. Studies by Fox (1993) and Walsh et al. (2015) show that repressors have negative self-schemas (Derakshan et al., 2007), which are activated when a threat is perceived to the individual's self-esteem. Avoidant interpretive bias is then triggered as a mechanism to protect self-esteem (Walsh et al., 2015). In fact, these individuals unconsciously feel threat in responding to self-relevant scales, possibly due to activation of this negative self-schema, and attempt to project themselves extremely positively in a defensive and exaggerated manner without realising. Other studies have also shown that when threatened, repressors use strategies to maintain a pleasant self-image (Newton & Contrada, 1992). Research does not support impression management as an explanation for this phenomenon (Weinberger & Schwartz, 1990) but rather self-deception may be responsible (Myers, 2010).

The aim of this study was to compare differences in answering health-relevant and self-relevant scales and the results show this difference. However, alongside examining the study aim, it is noteworthy that the results of this study show that the repressor and the self-assured groups have not shown a difference in answering health-relevant scales. This generates the question: is the health status of repressors and self-assured individuals genuinely similar or not? We do not have data in our study which can answer this question. One theoretical conjecture is that, like in previous studies (Denollet, Martens, Nyklicek, Conraads, & de Gelder, 2008; Myers, 2010), repressors in our study had positive self-evaluation in reporting their health status, thus resulting in similar scores for the two groups. Another possibility is that because our sample was a non-clinical sample (students) and did not focus on a particular population, the health status of the two groups may genuinely be the similar. In any case, answering this question requires more objective studies in which participants' health status is measured using objective tools.

The importance of this finding is that it suggests again that self-report scales are not appropriate tools for eliciting information from repressors. According to the findings of the present study, it seems that the type of self-report scale can influence the way repressors respond, and as was seen, the importance of this point is more obvious in scales which directly measure and describe the self. Considering that repressors make up about 10–20% of the non-clinical population (Codd & Myers, 2009), approximately 30–50% of patients with various chronic diseases (Myers, Davies, Evans & Stygall, 2005a, as cited in Myers, 2010) and up to 50% of elderly groups (Erskine, Kvavilashvili, Conway, & Myers, 2007), it seems that psychologists must be more cautious in studying this group of individuals and primarily use indirect methods such as semi-structured interviews. Alternatively, to prevent skewing of data obtained from self-report scales, repressive coping style can be considered as a control variable in future studies by designing shorter forms of the WAI with a limited number of items.

In addition, future studies must make a distinction between repression, which assesses unconscious control, the least healthy form of control and insightful self-control (Ghorbani, Watson, Farhadi, & Chen, 2014), which is the healthy control of internal impulses and is accompanied by integrative self-knowledge, and bear in mind that the more conscious the control the healthier the individual and conversely the more unconscious the control the less healthy the individual and it is best to keep this desire for unhealthy control in check.

It should be noted that there are criticisms of the Weinberger classification (Weinberger & Schwartz, 1990) used to select repressors in this study (e.g. Gebhardt, Rose, & Mitte, 2014) and this must be taken into account when generalising the present results. Besides, a conceptual overlap between the subscales of the Weinberger scale and other measurement scales can potentially lead to error inflation. Another limitation is that to conclude the likelihood of poorer health status in repressors compared to self-assured individuals, we relied solely upon results from other studies and did not specifically investigate participants' health status in our study. Such limitations will also constrain generalisation and inference of our results as for the use of convenience sampling, limit the sample to students and the moderate and low value of Cronbach alpha for some subscales, which can be addressed in future studies by careful planning. To increase generalisability, similar studies should be carried out in other samples especially those suffering from psychosomatic illness, which has a close relationship with the repressive coping style. It would also be very informative to compare self-reports with indirect tools which provide access to more objective data such as non-verbal (i.e. vocal and visual) cues in repressors and self-assured participants.

REFERENCES

Bartone, P., Robert, U., Wright, K., & Ingraham, L. (1989). The impact of a military air disaster on the health of assistance workers. *Journal of Nervous & Mental Disease*, *177*(6), 317–328.

Boden, J. M., Hyland, M. E., & Dale, K. L. (2005). Defensiveness and symptom reporting. *Current Psychology*, *24*, 153–170. https://doi.org/10.1007/s12144-005-1019-4

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, *84*(4), 822–848. https://doi.org/10.1037/0022-3514.84.4.822

Codd, J., & Myers, L.B. (2009). *A study of coping style and ethnic differences in ratings of self and personal risk* (Unpublished doctoral dissertation). Brunel University, London, England.

Denollet, J., Martens, E. J., Nyklicek, I., Conraads, V., & de Gelder, B. (2008). Clinical events in coronary patients who report low distress: Adverse effect of repressive coping. *Health Psychology*, *27*, 302_308. https://doi.org/10.1037/0278-6133.27.3.302

Derakshan, N., & Eysenck, M. W. (1999). Are repressors self-deceivers or other-deceivers? *Cognition & Emotion*, *13*, 1–17.

Derakshan, N., Eysenck, M. W., & Myers, L. B. (2007). Emotional information processing in repressors: The vigilance-avoidance theory. *Cognition & Emotion*, *21*, 1585–1614. https://doi.org/10.1080/ 02699930701499857

Derakshan, N., & Myers, L. B. (2015). The relationship between two types of impaired emotion processing: Repressive coping and alexithymia. *Frontiers in Psychology*, *6*, 809. https://doi.org/10.3389/fpsyg.2015.00809

Erskine, J. A., Kvavilashvili, L., Conway, M., & Myers, L. B. (2007). The effects of age on wellbeing psychopathology and repressive coping. *Aging and Mental Health*, *11*, 394–404. https://doi.org/10.1080/13607860600963737

Fox, E. (1993). Allocation of visual attention and anxiety. *Cognition & Emotion*, *7*, 207–215.

Gebhardt, C., Rose, N., & Mitte, K. (2014). Fact or artifact: An item response theory of median split based repressor classification. *British Journal of Health Psychology*, *19*, 36–51. https://doi.org/10.1111/bjhp.12029

Ghorbani, N., Cunningham, C. J. L., & Watson, P. J. (2010). Comparative analysis of integrative self-knowledge, mindfulness, and private self-consciousness in predicting responses to stress in Iran. *International Journal of Psychology*, *45*(2), 147–154. https://doi.org/10.1080/00207590903473768

Ghorbani, N., Watson, P. J., Farhadi, M., & Chen, Z. (2014). A multi-process model of self-regulation: Influences of mindfulness, integrative self-knowledge, and self-control in Iran. *International Journal of Psychology*, *49*(2), 115–122. https://doi.org/10.1002/ijop.12033

Ghorbani, N., Watson, P. J., & Hargis, M. B. (2008). Integrative self-knowledge scale: Correlations and incremental validity of a cross-cultural measure developed in Iran and the United States. *The Journal of Psychology*, *142*(4), 395–412. https://doi.org/10.3200/JRPL.142.4.395-412

Hauer, K., Trammel, A. D., Ramroth, H., Pfisterer, M., Todd, C., Oster, P., et al. (2009). Repressive coping in geriatric patients' reports _ impact on fear of falling. *Zeitschrift für Gerontologie und Geriatrie*, *42*, 137–144. https://doi.org/10.1007/s00391-008-0552-9

Howard, S., Myers, L., & Hughes, B. (2017). Repressive coping and cardiovascular reactivity to novel and recurrent stress. *Anxiety, Stress & Coping*, *30*, 562–574. https://doi.org/10.1080/10615806.2016.1274027

King, L. A., & Emmons, R. A. (1990). Conflict over emotional expression: Psychological and physical correlates. *Journal of Personality and Social Psychology*, *58*, 864–877. https://doi.org/10.1037/0022-3514.58.5.864

Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: comparison of the depression anxiety stress scales (DASS) with the beck depression and anxiety inventories. *Behaviour Research and Therapy*, *33*(3), 335–343.

Mund, M., & Mitte, K. (2012). The costs of repression: A meta-analysis on the relation between repressive coping and

somatic disease. *Health Psychology*, *31*(5), 640–649. https://doi.org/10.1037/a0026257

Myers, L. B. (2000). Identifying repressors: A methodological issue for health psychology. *Psychology & Health*, *15*(2), 205–214. https://doi.org/10.1080/08870440008400301

Myers, L. B. (2010). The importance of the repressive coping style: Findings from 30 years of research. *Anxiety, Stress, & Coping*, *23*, 3–17. https://doi.org/10.1080/10615800903366945

Myers, L. B., Burns, J. W., Derakshan, N., Elfant, E., Eysenck, M. W., & Phipps, S. (2008). Current issues in repressive coping and health. In A. J. Vingerhoets, I. Nyklícek, & J. Denollet (Eds.), *Emotion regulation: Conceptual and clinical issues* (pp. 69–86). New York, NY: Springer.

Myers, L. B., & Vetere, A. L. (1997). Repressors' responses to health-related questionnaires. *British Journal of Health Psychology*, *2*, 245–257. https://doi.org/10.1111/j.2044-8287.1997.tb00539.x

Newton, T. L., & Contrada, R. J. (1992). Repressive coping and verbal-autonomic response dissociation: The influence of social context. *Journal of Personality and Social Psychology*, *62*, 159–167. https://doi.org/10.1037/0022-3514.62.1.159

Ohrmann, P., Kugel, H., Egloff, B., Arolt, V., & Suslow, T. (2014). Influence of repressive coping style on cortical activation during encoding of angry faces. *Public Library of Science*, *9*(12), e112398. https://doi.org/10.1371/journal.pone.0112398

Phipps, S., & Srivastava, D. K. (1997). Repressive adaptation in children with cancer. *Health Psychology*, *16*, 521–528. https://doi.org/10.1037/0278-6133.16.6.521

Raes, F., Pommier, E., Neff, K. D., & Gucht, D. V. (2011). Construction and factorial validation of a short form of the self-compassion scale. *Clinical Psychology and Psychotherapy*, *18*, 250–255. https://doi.org/10.1002/cpp.702

Saeedi, Z., Ghorbani, N., & Sarafraz, M. (2016). Short form of Weinberger adjustment inventory (WAI): Psychometric properties and confirmatory factor analysis of the Persian version. *Journal of Psychological Science*, *15*, 335–347. [in Persian].

Shedler, J., Mayman, M., & Manis, M. (1993). The illusion of mental health. *American Psychologist*, *48*(11), 1117–1131. https://doi.org/10.1037/0003-066X.48.11.1117

Tangney, J. P., Baumeister, R. F., & Boone, A. (2004). High self-control predicts good adjustment, less pathology, better grades, and interpersonal success. *Journal of Personality*, *72*, 271–324. https://doi.org/10.1111/j.0022-3506.2004.00263.x

Walsh, J., McNally, M. A., Skariah, A., Butt, A., & Eysenck, M. W. (2015). Interpretive bias, repressive coping, and trait anxiety. *Anxiety, Stress, & Coping*, *28*(6), 617–633. https://doi.org/10.1080/10615806.2015.1007047

Weinberger, D. A. (1996). Distorted self-perceptions: Divergent self-reports as statistical outliers in the multi-method assessment of children's social-emotional adjustment. *Journal of Personality Assessment*, *66*, 126–143. https://doi.org/10.1207/s15327752jpa6601-10

Weinberger, D. A., & Schwartz, G. E. (1990). Distress and restraint as superordinate dimensions of self-reported adjustment: A typological perspective. *Journal of Personality*, *58*, 381–417. https://doi.org/10.1111/j.1467-6494.1990.tb00235.x

Weinberger, D. A., Schwartz, G. E., & Davidson, R. J. (1979). Low-anxious, high-anxious, and repressive coping styles: Psychometric patterns and behavioral and physiological responses to stress. *Journal of Abnormal Psychology*, *88*, 369–380. https://doi.org/10.1037/0021-843X.88.4.369