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Use of Social Desirability Scales in Clinical Psychology: A Systematic Review

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Objective: There is still an open debate about the utility of social desirability indicators. This report systematically reviewed the use of social desirability scales in studies addressing social desirability in clinical psychology. **Method:** A systematic review (January 2010–March 2015) was conducted, including 35 studies meeting the inclusion criteria of being published in peer-reviewed journals and describing quantitative findings about an association of social desirability with clinical psychology variables using a cross-sectional or longitudinal design. **Results:** Social desirability was associated with self-reports of various clinical-psychological dimensions. Most of the included studies treated social desirability as a 1-dimensional variable and only 10 of 35 disentangled the impression management and self-deception components. Although theoretical literature does not consider social desirability a mere response bias, only 4 of the reviewed articles controlled for the possible suppressor effect of personality variables on social desirability, while the majority focused upon the stylistic (response bias) rather than the substantive (personality) nature of this construct. **Conclusion:** The present review highlighted some limitations in the use of social desirability scales in recent clinical psychology research and tried to offer a few suggestions for handling this issue. © 2016 Wiley Periodicals, Inc. *J. Clin. Psychol.* 72:534–551, 2016.

Keywords: social desirability; impression management; self-deception; response bias; systematic review

Social desirability (SD), or socially desirable responding, is “the tendency to give answers that make the respondent good” (Paulhus, 1991, p. 17) with respect to current social norms and standards. SD may affect several psychological variables, especially when they are measured through self-reports, which facilitate the respondents manipulating their answers. For example, respondents to sensitive surveys asking about taboo topics such as racism, sexual activities, and illegal behavior may underreport socially undesirable activities (Krumpal, 2013). This is because self-report items include both a *description content* (e.g., introverted vs. extraverted) and an *evaluative content* (e.g., good vs. bad; Bäckström & Björklund, 2014; Saucier, 1994). When a self-report is *evaluated* as highly desirable or undesirable, the subject’s self *description* could be biased (Bäckström, Björklund, & Larsson, 2012; Saucier, 1994). Therefore, SD scales could be useful for detecting the evaluative content in a self-report measure (see Bäckström & Björklund, 2014). However, the nature, the measurement, and whether and how to deal with SD are still matters for debate (Ziegler, MacCann, & Roberts, 2012).

In the first half of the 20th century, several articles discussed the threats that can occur during the administration of self-reports (e.g., Cronbach, 1946; Hartshorne & May, 1928). However, in 1957 Edwards made the first attempt to measure SD by using some items from the Minnesota Multiphasic Personality Inventory (MMPI). Later, Crowne and Marlowe (1960) developed the 33-item Marlowe Crowne Social Desirability Scale (MCSDS) to measure SD without any reference to psychopathology. Over the years, several short versions of this scale have been developed (e.g., Ballard, 1992; Reynolds, 1982; Strahan & Gerbasi, 1972).

The abovementioned measures consider SD as a one-dimensional variable. Nevertheless, a major contribution in clarifying the concept of SD was offered by Paulhus (1984, 1991), who

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identified two components of SD: impression management (IM) and self-deception (SDE). IM is intended as a conscious inclination to offer unrealistic positive responses designedly to deceive others, while SDE is an unconscious tendency in which the respondent actually believes his or her positive self-reports. IM and SDE were then further partitioned: IM into agentic management and communal management (Blasberg, Rogers, & Paulhus, 2014) and SDE into self-deceptive enhancement and self-deceptive denial (Paulhus, 2002; Paulhus & John, 1998; Paulhus & Reid, 1991; Vecchione & Alessandri, 2013).

Agentic bias involves exaggerating one's social or intellectual status, whereas communal bias involves denying socially deviant impulses and claiming pious attributes (Blasberg et al., 2014). The Balanced Inventory of Desirable Responding (BIDR; Paulhus, 1988, 1991, 1998) allows disentangling IM and SDE, with the possibility of further partitioning SDE into self-deceptive enhancement and self-deceptive denial. The BIDR originally used a 7-type Likert scale, but psychometric studies have confirmed that it fits better within a dichotomous coding system (e.g., Gignac, 2013; Helmes & Holden, 2003). More recently has been developed the Bidimensional Impression Management Index (BIMI; Blasberg et al., 2014), which allows to disentangle IM into agentic management and communal management. Overall, several studies confirmed a multifactorial structure of SD (Gignac, 2013; Ventimiglia & MacDonald, 2012).

Until the 80s, SD tools were mainly considered measures of faking. Participants who scored high in SD scales were regarded as tending to fake, and self-reports that correlated significantly with SD scales were considered as lacking of validity (Nederhof, 1985). A turning point occurred when McCrae and Costa (1983) found very little differences between self- and partner-rating scores of SD, while testing whether neuroticism–extraversion–openness scales were affected by SD. Therefore, they attributed the correlations of SD with personality to the substantive nature of SD, concluding that individuals who obtained high scores on SD scales “were in fact better adjusted, friendlier, and more open to experience than those who scored low” (McCrae & Costa, 1983, p. 886).

From that time to the present day, many studies have been dedicated to discussing the substantive (personality trait) or stylistic (faking or bias) nature of SD, with controversial results. Indeed, some findings attested to the personality characteristics of SD (Ones, Viswesvaran, & Reiss, 1996; Pauls & Stemmler, 2003; Smith & Ellingson, 2002; Uziel, 2010) and other studies found that SD may contain both substantive and stylistic features (Connelly & Chang, in press; Lönnqvist, Paaononen, Tuulio-Henriksson, Lönnqvist, & Verkasalo, 2007; Vecchione & Alessandri, 2013). Some authors, however, argued that SD contains neither substance nor style but could instead be a form of method variance (Holden & Passey, 2010).

In conclusion, the substance versus style nature of SD does not seem to be an either/or question (Schwartz, Verkasalo, Antonovsky, & Sagiv, 1997); however, within this controversial body of research, indication of not taking the SD scales as measures of faking seems to prevail (MacCann, Ziegler, & Roberts, 2012). Related to this issue is the need of taking into account the role of personality variables when dealing with SD scales. Indeed, as Bäckström et al. (2012) suggest, the influences of SD on other variables could be because of its strict relationship with personality variables, in particular with the Big Five traits, and thus a good approach to SD would require checking the possible overlapped variance between SD and personality variables.

There is still an open debate about the utility of bias indicators like SD scales, with some authors viewing them as useless (McGrath, Mitchell, Kim, & Hough, 2010) and others deeming such scales worthwhile to be administered (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003; Rohling et al., 2011); therefore, we believe this issue deserves further investigation.

The relevance of SD has been largely investigated in psychological areas such as personality psychology, organizational psychology, and neuropsychology (e.g., Ones et al., 1996; Rogers, 2008; Ziegler et al., 2012). In the literature, there are also studies that attest to the relevance of SD in clinical psychology (Huang, Liao, & Chang, 1998; Merckelbach, Jelicic, & Pieters, 2011). However, the only available review on the use of SD in clinical psychology dates back more than 30 years ago (Evans, 1982), highlighting that SD is actually an underestimated topic within this psychological area. A more recent review explored the use of SD scales in nursing contexts within the 2-year period of 2004–2005 (van de Mortel, 2008). However, findings were too specific to the nursing context to draw conclusions on the relevance of SD in clinical psychology.

The Present Study

This study aimed to review how SD has been recently addressed in clinical psychology, establishing the following objectives: (a) to investigate the association of SD with other variables in the contexts of clinical psychology; (b) to ascertain whether SD was measured as a mono- or multidimensional variable; and (c) to find out whether personality traits were controlled for when testing the effect of SD on other variables. The last issue is related to whether SD was considered a stylistic or bias or a substantive variable. We also offered suggestions for addressing the SD issue, based on the literature related to other psychological fields.

Method

We followed the PRISMA statement (Moher, Liberati, Tetzlaff, Altman, & The PRISMA Group, 2009) to conduct this review. PRISMA statement is an evidence-based protocol developed by an international group of researchers to help authors improve the reporting of systematic reviews and meta-analyses.

Eligibility Criteria

Eligibility criteria included (a) only empirical studies (involving adolescent or adult participants) that explored the association of SD with other psychological variables within topics that are pertinent to clinical psychology and (b) were published in peer-reviewed journals. The imposed restrictions included English language, publication date from January 2010 to March 2015, and published or ahead of print publication status. The publication date restriction was used to discuss the most recent trends in the management of SD while reducing the cost of retrieving a large number of articles.

Search Strategy and Selection Criteria

We identified studies by searching two electronic databases, PsycINFO and Google Scholar and the last search was run on March 31, 2015. We also scanned the reference lists of the retrieved articles. We used the following search terms in the titles: social desirability, socially desirable responding, impression management, self-deception, response bias, and faking. We searched for these terms in the titles to ensure that SD was not a marginal topic in the study. We excluded books, dissertations, and conference proceedings.

We independently performed eligibility assessment and disagreements were resolved by consensus. The inclusion criteria used to select articles from abstract and full text were as follows: SD was (a) one of the main variables of interest, (b) investigated in relation to other variables that were relevant to clinical psychology, (c) measured with a quantitative tool. Studies concerning areas other than clinical psychology, such as economics, personality, organizational psychology, neuropsychology, validation studies, and those involving only children, were excluded.

We reviewed abstracts, retrieved eligible full-text articles, and re-reviewed them. We extracted data from the included studies using a data extraction form, with consensus resolution of decisions. Information extracted from each included article is as follows: author(s), year of publication, and country; characteristics of participants (sample type and size, gender, and age); clinical psychology topics that were associated with SD; SD measures; personality traits that were controlled for when investigating the association between SD and other variables; and key findings related to the association of SD with clinical psychology variables (see Table 1).

Results

A total of 35 studies were identified for inclusion in the review. The search of databases provided 391 citations from PsycINFO and 1,190 citations from Google Scholar for a total of 1,581 citations. Based on examination of the publication type and abstract and after adjusting for duplicates, 108 remained. Of these, 73 studies were discarded because, after reviewing the full text, they did not meet the inclusion criteria. The full text of the remaining 35 citations was then

Table 1
Summary of the 35 Reviewed Studies' Characteristics

Study (country)	Participants	Main topic	SD measure ^a	Personality traits controlled for	Key results ^b
Attitude, knowledge, and health behavior					
Ambwani & Chmielewski, 2013 (United States)	155 adults aged 18–23 years (69% female)	Body weight	PAI-PIM	None	SD significantly predicted weight-reporting discrepancies for women but not for men.
Boyer et al., 2012 (Canada)	41 women aged 18–27 years; 20 with provoked vestibulodynia (PVD) and 21 controls	Sexual arousal	BIDR-7	None	IM was not a moderator between genital and subjective arousal. In the PVD group, IM was significantly negatively correlated with subjective sexual arousal.
Crutzen et al., 2010 (The Netherlands)	7,077 adults (mean age = 43.3, <i>SD</i> = 13.1, 56.6% female)	Health risk behaviors (e.g., alcohol use, drug use, smoking)	MCSDS BIDR-6 SDS-17	None	Three longitudinal studies did not find any significant influence of SD on self-reported health risk behaviors in web-based research.
Crutzen et al., 2011 (The Netherlands)	5,495 adults (mean age = 47.1, <i>SD</i> = 16, 54% female)	Physical activity	MCSDS	None	SD did not influence self-reported physical activity in web research.
Davenport et al., 2012 (United Kingdom)	134 women aged 18–54 years	Excessive eating and compulsive buying	SDS-17	Self-esteem, impulsivity, reward sensitivity, anxiety	SD was negatively correlated with excessive eating and compulsive buying, but after controlling for personality traits, SD weakly influenced only compulsive buying.
Davis et al., 2010 (Canada)	568 adults (mean age = 19.74, <i>SD</i> = 2.29, 70.5% female)	Drinking	BIDR-6	None	IM was significantly negatively correlated with consumption and risky drinking, while SDE was not correlated.
Foster, 2013 (United States)	676 college students (mean age = 22.92, <i>SD</i> = 5.43, 82.44% female)	Drinking	MCSDS	None	SD negatively predicted drinking regardless of gender effect.

(Continued)

Table 1
Continued

Study (country)	Participants	Main topic	SD measure ^a	Personality traits controlled for	Key results ^b
Gucciardi, Jalleh, & Donovan, 2010 (Australia)	224 athletes aged 14–62 years (61.16% male)	Doping attitude and susceptibility	SDS-17	None	SD moderated and did not mediate the relationship between attitudes to doping and doping susceptibility.
Henderson, Evans-Lacko, Flach, & Thornicroft, 2012 (United Kingdom)	392 adults aged 25–45 years (46.65% male)	Mental health knowledge and willingness for social contact in face-to-face vs. online interview	MCSDS-short form	None	SD was positively correlated with willingness for social contact only in the face-to-face group, while it was not correlated with mental health knowledge in both groups.
Huberman, Suschinsky, Lalumière, & Chivers, 2013 (Canada)	79 women aged 18–39 years	Sexual arousal in different condition (erotic audio vs. erotic films)	BIDR-6	None	IM was significantly negatively correlated with sexual arousal self-reports in both auditory and audiovisual erotic stimuli groups.
Petróczy & Nepusz, 2011 (United Kingdom)	278 athletes (mean age = 20.1, <i>SD</i> = 1.9, 71.6% male)	Doping	MCSDS	None	SD predicted doping opinion together with control, deterrence, and attitude to doping.
Póinhos, Oliveira, & Correia, 2015 (Portugal)	266 higher education students aged 18–27 years (62.8% female)	Eating behavior	MCSDS	None	SD was significantly negatively correlated with emotional, external and binge eating, and positively with eating self-efficacy. It also weakened the correlations among eating behavior variables.
Schoch & Raynor, 2012 (United States)	38 normal weight women (mean age = 20.3, <i>SD</i> = 6.9)	Dietary intake	MCSDS-short form	None	Higher SD was associated with more accurately reporting of energy intake.
Vu, Pham, Tran, & Ahmed, 2013 (Ethiopia)	114 young aged 15–24 years (51.8% female)	Sexual behavior	MCSDS	None	SD was positively associated with self-reported sexual abstinence.

(Continued)

Table 1
Continued

Study (country)	Participants	Main topic	SD measure ^a	Personality traits controlled for	Key results ^b
Physical and mental symptoms and quality of life and well-being					
Avvik, Avvik, & Punab, 2014 (Estonia)	112 males (mean age = 52.78, <i>SD</i> = 8.69) with chronic prostatitis/chronic pelvic pain syndrome	Chronic pain and urinary symptoms	BIDR-6	None	IM (positively) and SDE (negatively) were significantly correlated with pain; only SDE was negatively correlated with urinary symptoms.
Ambwani, Boeka et al., 2013 (United States)	359 bariatric surgery candidates aged 18–68 years (82% female)	Anxiety and depression	PAL-PIM MCSDS	None	Both measures of SD were negatively correlated with anxiety and depression.
Arab et al., 2014 (Iran)	123 patients with addiction disorders (mean age = 34.8, <i>SD</i> = 9.3, 82% males)	Quality of life	MCSDS	None	SD was not correlated with quality of life.
Brajsa-Žganec, Ivanović, & Lipovčan, 2011 (Croatia)	392 students aged 19–26 years (50% females)	Subjective well-being	MCSDS-short form	Big Five	SD showed a significant influence on subjective well-being, which disappeared after controlling for personality traits.
Dawes, Palmer, Allison, Ganiats, & Jeste, 2011 (United States)	1,860 females aged 57–91 years	Physical health, well-being and attitude toward aging	MCSDS-short form	None	SD significantly predicted physical health, well-being and attitude toward aging, but this influence disappeared after controlling for age, income, education, and ethnicity.
DeVylder & Hiltmire, 2015 (United States)	686 college students (mean age = 18.75, <i>SD</i> = 1.41, 57% female)	Psychotic experience	MCSDS	None	SD negatively predicted self-reported psychotic experiences.

(Continued)

Table 1
Continued

Study (country)	Participants	Main topic	SD measure ^a	Personality traits controlled for	Key results ^b
Di Milia & Muller, 2012 (Australia)	191 adults (mean age = 36.28, <i>SD</i> = 12.94, 53% males)	Sleepiness	BIDR-6	None	IM was not associated with sleepiness.
Fastame & Penna, 2012 (Italy)	201 adults aged 19–99 years (45.52% female)	Depression and well-being	MCSDS	None	Age and <i>SD</i> significantly predicted depression (negatively) and well-being (positively). The group aged 75–99 years scored higher on <i>SD</i> than the other age groups (20–30 years and 65–74 years).
Heintzelman Trent, & King, 2015 (United States)	176 adults aged 18–69 years (39.7% female)	Well being in three experimental conditions: Fake bad, fake good and honest	BIDR-6	None	The total <i>BIDR</i> score was significantly positively correlated with four scales of well-being, with the higher values in the fake good condition.
Ishida & Okada, 2011 (Japan)	23 adults (mean age = 23.04, <i>SD</i> = 8.29, 61% females)	Anxiety	MAS (lie scale)	None	<i>SD</i> was not correlated with anxiety. <i>SD</i> influenced granulocyte count (positively) and lymphocyte count (negatively).
Messina, Fogliani, & Paradiso, 2010 (Italy)	111 graduate students aged 24–58 years (69% female)	Alexithymia	EPQ-R (lie scale)	Neuroticism, extraversion, psychoticism	<i>SD</i> showed a significantly negative correlation with alexithymia, which disappeared after controlling for neuroticism.

(Continued)

Table 1
Continued

Study (country)	Participants	Main topic	SD measure ^a	Personality traits controlled for	Key results ^b
Pompili et al., 2011 (Italy)	200 participants (mean age = 39.45, <i>SD</i> = 13.72, 54% female) 58 with psychiatric disorders and 142 controls	Hopelessness	BIDR-6	None	In both groups hopelessness was significantly negatively associated with SDE but not with IM.
Soubelet & Salthouse, 2011 (United States)	1175 adults aged 18–93 years (63% female)	Mood and well-being	MCSDS	None	SD was significantly positively correlated with age, positive affects, life satisfaction, and negatively with depression, negative affects, and trait anxiety. Correlations of age with both personality and mood self-reports decreased after controlling for SD.
Surbey, 2011 (Australia)	80 undergraduate students aged 17–47 years (66% female)	Depression, optimism, and cooperation	SDQ BIDR-7	Dispositional optimism	SDE, but not IM, was significantly negatively correlated with depression and positively with optimism. Only optimism predicted cooperation.
Treatment variables and outcomes					
Bradshaw Donohue, Cross, Urgelles, & Allen, 2011 (United States)	82 mothers aged 18–49 years in treatment for substance abuse and child neglect	Parental satisfaction	CAPI Lie scale	None	SD responders (Lie scale score ≥ 8) scored significantly higher on parental happiness with children than valid responders (Lie scale score < 8)
Davis Doherty, & Moser, 2014 (Canada)	1,747 males (mean age = 34.35, <i>SD</i> = 9.15) in substance abuse treatment (82% moderate vs. 18% high intensity treatment)	Substance abuse related outcomes	BIDR 7	None	Both IM and SDE increased significantly from pre- to post-treatment and affected changes on self-reported drug- and alcohol-related attitudes/beliefs/locus of control and self-efficacy.

(Continued)

Table 1
Continued

Study (country)	Participants	Main topic	SD measure ^a	Personality traits controlled for	Key results ^b
Freeman, Schumacher, & Coffey, 2015 (United States)	54 males (mean age = 35.54, <i>SD</i> = 9.28) in substance abuse treatment and their partners (mean age = 34.89, <i>SD</i> = 9.26)	Intimate partner violence	BIDR-7	None	SDE and IM were significantly positively correlated with negotiating tactics with partner. Only IM was negatively correlated with psychological aggression. No correlations were found with physical and sexual aggression and injurious behavior.
Mathie & Wakeling, 2011 (United Kingdom)	1,730 males (mean age = 43.65, <i>SD</i> = 12.6) with a sexual offense sentence	Sexual antisocial behaviors	BIDR-6	None	Both IM and SDE significantly increased from pre- to post-treatment and were negatively correlated with offense-specific measures.
Nolle, Elsworth, & Osborne, 2013 (Australia)	331 patients (mean age = 62.2, <i>SD</i> = 13.2) (74.2% female) with chronic health problems in a self-management program	Self-management of chronic disease	MCSDS	None	SD was not a mediator between pre- and post-health education intervention outcomes
Reese et al., 2013 (United States)	102 clients of counseling centers aged 18–51 years (79.4% female)	Therapeutic alliance in three experimental conditions	MCSDS-short form	None	SD was not correlated with a measure of therapeutic alliance in none of the experimental conditions.
Zemore, 2012 (United States)	200 patients aged 18–60 years (70% male) in substance abuse treatment	Drug use and readiness to change	MCSDS-short form	None	SD significantly negatively affected psychiatric severity, drug use, and self-reported change readiness. These variables positively influenced the treatment attendance.

Note. *SD* = standard deviation.

^aPAI-PIM = Personality Assessment Inventory-Positive Impression Management; BIDR = Balanced Inventory of Desirable Responding; MCSDS = Marlowe Crowne Social Desirability Scale; CAPI = Child Abuse Potential Inventory; SDS-17 = Social Desirability Scale-17; MAS = Manifest Anxiety Scale; EPQ-R = Eysenck Personality Questionnaire-Revised; SDQ = Self Deception Questionnaire.

^bSD = social desirability; IM = impression management; SDE = self deception.

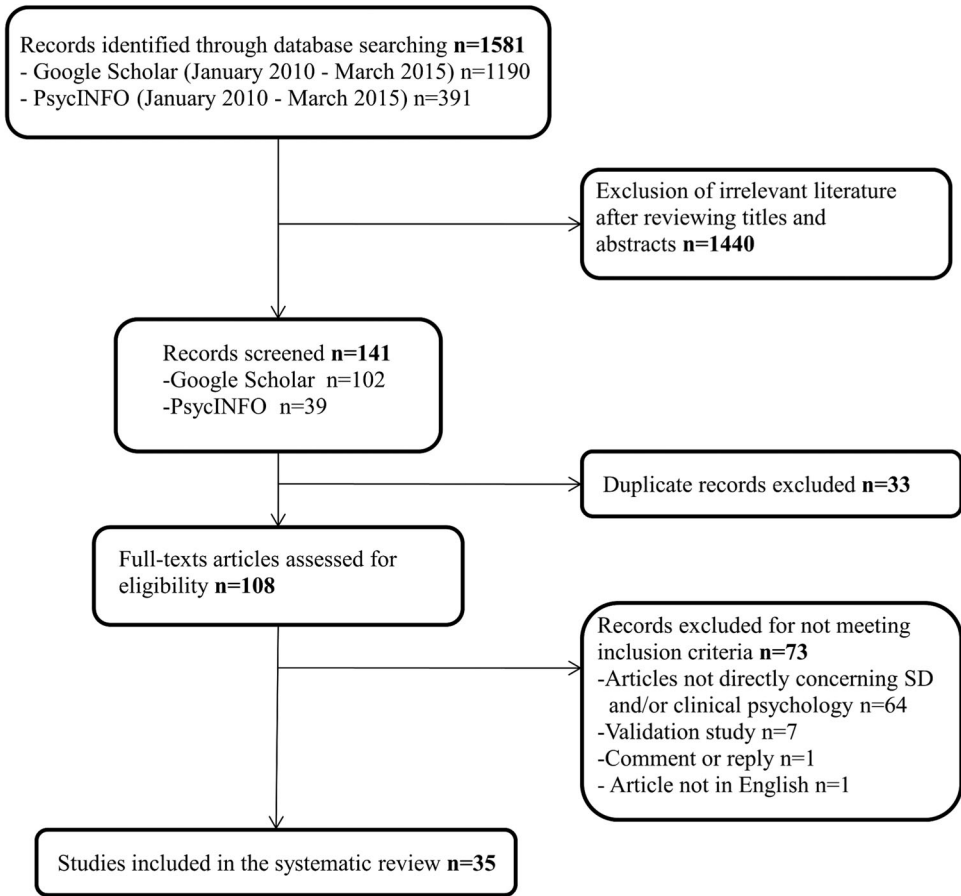


Figure 1. Flow diagram of literature search and study selection.

examined in greater detail. All these studies met the inclusion criteria and were thus included in the systematic review. No additional relevant studies were obtained by checking the references of located papers (see the flow diagram in Figure 1). Table 1 presents a summary of information on the 35 reviewed studies that met the inclusion criteria.

The retrieved studies involved samples ranging from 23 to 5,612 participants and were conducted mainly in North America ($n = 16$) and Europe ($n = 12$). The most frequently used SD measures were the MCSDS ($n = 18$; Ballard, 1992; Crowne & Marlowe, 1960; Reynolds, 1982; Strahan & Gerbasi, 1972), and the BIDR ($n = 12$; Paulhus, 1988, 1991, 1998). The Social Desirability Scale-17 (Stöber, 1999, 2001) was administered in three studies, while the Self-Deception Questionnaire (Sackeim & Gur, 1978) was used only in one study. Five studies administered a lie scale to detect more or less conscious lying within personality questionnaires, such as the Eysenck Personality Questionnaire (Eysenck, Eysenck, & Barrett, 1985), the Personality Assessment Inventory (Morey, 2007), the Manifest Anxiety Scale (Taylor, 1953), and the Child Abuse Potential Inventory (Milner, 1986). Although lie scales are developed to measure distortion in a specific self-report, we included these five studies in the review as the authors used them purposely to measure SD. Among the 35 included studies, only four (11.43%) controlled for the effect of various personality variables on SD.

To summarize the main results, we grouped the included studies based on three areas of interest: self-reports of attitude, knowledge, and health behavior; physical and/or mental symptoms and quality of life and well-being; and treatment variables and outcomes.

Self-Reports of Attitude and Health Behavior

Fourteen studies addressed SD in relation to self-reports of attitude, knowledge, and health behavior. Taken together, SD correlated negatively with certain undesirable self-reports, such as drinking behavior, doping use, and external or binge eating, and correlated positively with desirable characteristics, such as eating self-efficacy or willingness for social contacts, attesting that SD is a relevant issue in this area. Only two studies (Crutzen & Göritz, 2010, 2011) found no effect of SD on health self-reports (e.g., alcohol use and smoking) in web-based research. Results of these studies seem to indicate an influence of the administration mode on SD score; however, evidence from a recent meta-analysis (Dodou & de Winter, 2014) indicates that there is no difference in social desirability between paper-and-pencil surveys and computer surveys.

Most studies (11 of 14) treated SD as a one-dimensional variable and only three disentangled IM and SDE. Two of them found significantly negative correlations between IM and measures of sexual arousal in normal (Huberman, Suschinsky, Lalumière, & Chivers, 2013) and clinical samples (Boyer, Pukall, & Holden, 2012). A third study (Davis, Thake, & Vilhena, 2010) found that, in normal adults, IM was negatively correlated with consumption and risky drinking, while SDE did not show any significant correlations with such behaviors. The only study that controlled for personality variables indicated that the significantly negative influence of SD on excessive eating disappeared after controlling for self-esteem and impulsivity (Davenport, Houston, & Griffiths, 2012).

Physical and/or Mental Symptoms and Quality of Life and Well-Being

Fourteen studies addressed SD in relation to physical and/or mental symptoms and quality of life and well-being. Here, too, there were several positive and negative correlations with desirable and undesirable characteristics, respectively, attesting the relevant role of SD. Among the studies that investigated SD and quality of life in individuals with addiction disorders only one study failed to report significant correlations (Arab et al., 2014).

Again, most studies (10 of 14) treated SD as a one-dimensional variable with only four studies disentangling the effects of IM and SDE. SDE (but not IM) was negatively associated with depression and hopelessness in two samples from the general population (Pompili et al., 2011; Surbey, 2011); therefore, it was hypothesized that SDE could be a protective factor for depression and suicide risk. In another study, IM was positively correlated with pain scores and not associated with urinary symptoms, whereas SDE was negatively correlated with both pain and urinary symptoms in a sample of men with chronic prostatitis or chronic pelvic pain syndrome (Aavik, Aavik, & Pukal, 2013). One study did not find any association between IM and self-reported sleepiness in a sample of 191 normal adults (Di Milia & Muller, 2012). Overall, three of the four studies that addressed IM and SDE highlighted the importance of disentangling these components of SD.

Three studies controlled for personality variables when investigating the relationship between SD and the target or outcome variables and found that in all cases the effect of SD was suppressed. In fact, SD had no influence on subjective well-being in a sample of students after controlling for the Big Five dimensions (Brajša-Žganec, Ivanović, & Lipovčan, 2011); the correlation between SD and alexithymia was not any more significant after controlling for neuroticism in a sample of graduate students (Messina, Fogliani, & Paradiso, 2010); and the positive association of IM and SDE with intentions to cooperate in patients with depression became negligible after controlling for dispositional optimism (Surbey, 2011).

Treatment Variables and Outcomes

Seven studies examined the effect of SD in self-reports of treatment variables and outcomes, and in most of them SD correlated negatively with certain undesirable self-reports such as psychiatric symptoms or drug addiction severity and correlated positively with desirable characteristics such as parental happiness or treatment attendance. On the contrary, two studies found a negligible effect of SD on clinical outcomes such as therapeutic alliance (Reese et al., 2013) and self-management of chronic disease (Nolte, Elsworth, & Osborne, 2013).

Only three of seven studies disentangled the effects of IM and SDE, and in two of them these components had the same effect on the outcomes, while a third study highlighted some differences between them. Both components of SD, with no differences, increased from pre- to posttreatment in a large sample of male offenders in substance abuse treatment (Davis, Doherty, & Moser, 2014), and in a sample of adult males sentenced as sexual offenders, they showed similar correlations with offence-specific measures (Mathie & Wakeling, 2011). In a third study, involving a sample of males in substance abuse treatment and their partners, IM was more negatively related than SDE to an undesirable behavior such as intimate partner violence (Freeman, Schumacher, & Coffey, 2015). None of the seven studies included in this section controlled for personality variables.

Discussion

This systematic review was conducted to investigate how SD has been treated in the recent clinical psychology literature, with the intention to stimulate the attention of researchers and clinicians to a variable that has been instead widely faced in many other fields of psychology (Ziegler et al., 2012). We included only studies in which SD was quantitatively addressed. Attention was paid to the SD multidimensionality (Gignac, 2013) and its possible nature as a trait (McCrae & Costa, 1983), because some authors recommend not using SD scales as measures of faking (MacCann et al., 2012).

Results of the 35 reviewed articles provide some evidence that SD is associated with several self-report variables in clinical psychology, such as attitude, knowledge and health behaviors, physical and mental symptoms, quality of life and well-being, and treatment variables and outcomes. These findings seem to indicate that evaluative aspects may overwhelm the descriptive purposes of the examined self-reports (Saucier, 1994), suggesting that SD should be taken into account when addressing self-reports in clinical psychology.

Within the examined studies, the most administered SD scale was the MCSDS, which operationalized SD as a one-dimensional variable. However, key results from a few studies that operationalized SD as a multifactorial construct showed that, consistent with studies in other psychological fields (Blasberg et al., 2014; Gignac, 2013; Paulhus, 2002), disentangling IM and SDE is useful because these two components could lead to different conclusions. For instance, IM but not SDE was significantly related to self-reports of undesirable behaviors such as alcohol use (Davis et al., 2010) and partner violence (Freeman et al., 2015), whereas only SDE was a protective factor against depression, hopelessness, and suicide risk (Pompili et al., 2011; Surbey, 2011).

Another important issue was the use of lie scales as measures of SD in five of the included studies. We deem that lie scales are instruments developed to detect potential distortions that a *specific* self-report could elicit. Therefore, in our opinion, they could be useful to detect convergent validity of SD scales, with which they had high correlations (e.g., Stöber, 2001), but we discourage their use as a direct measure of SD. However, further studies are needed to ascertain what lie scales are and are not sharing with SD scales.

With regards to the effect of personality variables on the relationship between SD and other self-reported variables, although only four of the 35 reviewed studies took into account this issue, consistent with other studies (McCrae & Costa, 1983; Ziegler et al., 2012), they attested to the suppressor role of personality variables on SD. Indeed, after controlling for personality variables such as neuroticism, impulsivity, self-esteem, dispositional optimism, or the Big Five dimensions, the association or influence of SD on clinical variables such as excessive eating (Davenport et al., 2012), alexithymia (Messina et al., 2010), subjective well-being (Brajša-Žganec et al., 2011), or intentions to cooperate (Surbey, 2011) disappeared. Therefore, controlling for personality variables seems to be relevant to clarify the role of SD in self-reports, which might otherwise be overestimated.

Limitations

The present review has several limitations. The first one is related to the restrictive eligibility criteria that could have led to the exclusion of several studies. Such criteria were the narrow

time range of the included studies (2010-2015) and choices such as entering only keywords strictly related to SD, running the search only in the article title, and excluding dissertations and unpublished work. The choice of including only articles concerning topics of clinical psychology could have led to bias in the study selection; however, we matched our independent choices and resolved a few negligible discrepancies by consensus.

Another aspect is the interpretation of the results of the retrieved studies. Although we followed the key methodological recommendations for conducting systematic reviews, the findings of the present review were presented in a narrative way instead of through statistical analyses (e.g., as in a meta-analysis). This was mainly because of the lack of a general consensus framework to organize the results, and thus we used a subjective framework, extrapolated from personality studies by Paulhus (1991, 1998, 2002) and McCrae and Costa (1983).

It is important to acknowledge that most of the included studies relied on a sample of convenience, such as university or undergraduate college students; therefore, results should be interpreted with caution. Other reasons for such caution are the cross-sectional design of most studies, the recruitment of nonclinical participants, and the exclusive use of self-reports without verifying them by using other sources. Despite these limitations, results from the 35 examined studies can help to draw attention to aspects of SD that warrant further examination within clinical psychology research.

Directions for Future Research

We suggest administering the SD scales in future research, which will help to disentangle these construct components, IM and SDE. The BIDR (Paulhus, 1991, 1998) has followed a course of successive improvements over 35 years (Blasberg et al., 2014; Paulhus, 1984, 2002; Sackeim & Gur, 1978), so that it currently seems to be the best choice to measure the two main subfacets of SD, namely, IM and SDE. Recently, the BIMI (Blasberg et al., 2014) has also been made available to further disentangle communal and agentic forms of IM.

We also recommend that future research investigates the possible suppressive role of personality variables on SD by administering personality scales together with SD scales. The Big Five personality dimensions have a particularly relevant effect on SD (Ones et al., 1996; Paulhus, 2002), which has to do with the possible interpretation of SD as a personality trait more than a faking intention, that is, a more substantive than stylistic issue (Connelly & Chang, in press; Ziegler et al., 2012). Indeed, a reason why the effect of SD on self-reports variables is suppressed by introducing personality variables might be because of the overlapping variance between SD and other personality traits. Notably, a very brief version of the Big Five is available, which can be used when the length of the questionnaire is a concern (Gosling, Rentfrow, & Swann, 2003).

MacCann et al. (2012) recommend not to use SD scales as strictly faking scales, because it may lead to misinterpretation of the effect of SD on self-reports of other variables. Hall and Hall (2012) propose alternative strategies to address suspected cases of faking. For example, in place of using SD measures to assess effort or response bias, they suggest administering other tests such as the Test of Memory Malingering, the MMPI-2 F-K ratio, the MMPI FBS, the Rey 15-item test, or the California Verbal Learning Test. However, Hall and Hall (2012) also pointed out that the diagnosis of malingering cannot be made with 100% certainty from just a test, and thus they recommend using a nonconfrontational approach that integrates psychometric test results with clinical information.

Conclusion

In this review, we encourage clinical psychologists to take SD into consideration when investigating self-reports of various target behaviors. We also suggest clinical psychologists address this issue more effectively by using adequate SD scales that disentangle the different aspects of this construct and take into account personality variables to avoid interpreting SD merely as a measure of faking.

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