

# The validity of the 12-item Bem Sex Role Inventory in older Spanish population: An examination of the androgyny model



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## ABSTRACT

The Bem Sex Role Inventory (BSRI) is the most commonly used and validated gender role measurement tool across countries and age groups. However, it has been rarely validated in older adults and sporadically used in aging and health studies. Perceived gender role is a crucial part of a person's identity and an established determinant of health. Androgyny model suggests that those with high levels of both masculinity and femininity (androgynous) are more adaptive and hence have better health. Our objectives were to explore the validity of BSRI in an older Spanish population, to compare different standard methods of measuring gender roles, and to examine their impact on health indicators. The BSRI and health indicator questions were completed by 120 community-dwelling adults aged 65+ living in Aragon, Spain. Exploratory factor analysis was performed to examine psychometric properties of the BSRI. Androgyny was measured by three approaches: geometric mean, *t*-ratio, and traditional four-gender groups classification. Relationships between health indicators and gender roles were explored. Factor analysis resulted in two-factor solution consistent with the original masculine and feminine items with high loadings and good reliability. There were no associations between biological sex and gender roles. Different gender role measurement approaches classified participants differently into gender role groups. Overall, androgyny was associated with better mobility and physical and mental health. The traditional four groups approach showed higher compatibility with the androgyny model and was better able to disentangle the differential impact of gender roles on health.

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## 1. Introduction

### 1.1. Sex versus gender

Despite the fact that many researchers use the terms sex and gender interchangeably, they are two different entities. Sex refers to the biological and physiological characteristics that defines a person as a man or woman such as body size and shape, type and function of reproductive organs, and hormonal activities; whereas gender is the array of socially constructed roles and behaviors, personality traits, attitudes, and values that is considered to be socially appropriate for individuals of a specific sex in the context

of a specific culture (Schmitz, 2010; Weiten, 1997). Gender roles are often a self-perceived construct and are based on how individuals identify themselves as masculine or feminine (Johnson, Greaves, & Repta, 2007). Studies have shown that gender roles independent of biological sex affect health (Doyal, 2000; Gale-Ross, Baird, & Towson, 2009). Generally, it is shown that having masculine gender role is associated with worse physical health (Månsdotter, Lundin, Falkstedt, & Hemmingsson, 2009) and high femininity relates to worse mental health (Bassoff & Glass, 1982). High expressiveness as an attribute of femininity was associated with lower mortality from coronary heart disease in middle-aged Scottish men (Hunt, Lewars, Emslie, & Batty, 2007) and was related to less frequent alcohol use in adolescents (Huselid & Cooper, 1992) and university students (Zimmermann, Sieverding, & Müller, 2011). Emotional suppression internalized during masculine-role socialization can result in hazardous health-related behaviors such as smoking and heavy drinking (Lee, 2002). Adherence to masculine role of excessive self-reliance and dominance, further

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impede appropriate health service accessing (Macdonald, Gibbs, & Oliffe, 2004; Seymour-Smith, Wetherell, & Phoenix, 2002).

### 1.2. Measuring gender roles

Several approaches have been used to measure gender roles, from pure theoretical conceptualization to operationalization. These approaches are based on implicit assumptions that social forces produce gender roles and they are related to health (Spence, Helmreich, & Stapp, 1974). Scales such as the Personality Research Form ANDRO Scales (Berzins, Welling, & Wetter, 1978), the Adjective Check list (ACL) M and F scales (Lenney, 1991), the Personal Attributes Questionnaire (Spence et al., 1974), and the Bem Sex Role Inventory (BSRI) (Bem, 1974) have been used to measure gender roles and to examine their relationship to health.

BSRI was developed four decades ago by Bem (1974) and remains the most commonly used validated scale until today. In studying gender roles, she developed 60 personality traits and categorized them into two groups of instrumental and expressive traits. Instrumental traits such as having strong personality, being dominant, and taking the lead were considered as masculine gender roles; while expressive traits such as being tender, sympathetic, and gentle were thought to indicate feminine gender roles.

### 1.3. The androgyny model

Bem (1974) was the first person who argued against the exclusive dichotomy of gender roles and defined four gender roles: A person with high masculine and low feminine identification would be categorized as 'masculine', a person with high feminine identification and low masculine identification would be categorized as 'feminine', a person who had high identification with both characteristics would be categorized as 'androgynous', and finally a person who has low identification with both dimensions would be considered 'undifferentiated' (Bem, 1974; Hoffman & Fidell, 1979). She hypothesized that 'androgynous' individuals regardless of their biological sex, depending on the situational appropriateness can be instrumental and assertive or expressive and yielding (Bem, 1974). This flexibility in behavior results in being more adaptive and therefore more likely to have better mental health and higher competence (Bem, 1977). Research has provided support for this theory; in adults, androgyny has been associated with higher levels of optimal mental health (Lefkowitz & Zeldow, 2006) and better health practices (Shifren & Bauserman, 1996). A study of a sample of older adults in Windsor, Ontario, showed that having androgynous gender role is associated with better self-rated physical health, wellness, and life satisfaction (Gale-Ross et al., 2009).

Measurement of androgyny has also been subjected to debate. Generally, classification is done using participants' scores on the masculine and feminine scales. Using the medians from Bem's original normative samples (Lenney, 1991), the theoretical mean of the scale (Fernandez & Coello, 2010), or the sample medians (Gale-Ross et al., 2009; Lenney, 1991; Sedney, 1981), individuals are classified into four possible gender roles groups according to their masculinity and femininity scores (Fig. 1). A person is classified as androgynous if both scores are above the scale medians; and as undifferentiated if both scores are below the scale medians (Bem, 1977; Spence et al., 1974).

A person's androgyny may also be expressed as a continuous variable calculated according to the difference between femininity and masculinity scores divided by a term reflecting the variance of the two sets of ratings (Bem, 1974). Other methods include using the absolute value of differences between the masculine score and the feminine score (Heilbrun, 1981; Kalin, 1979), the arithmetic

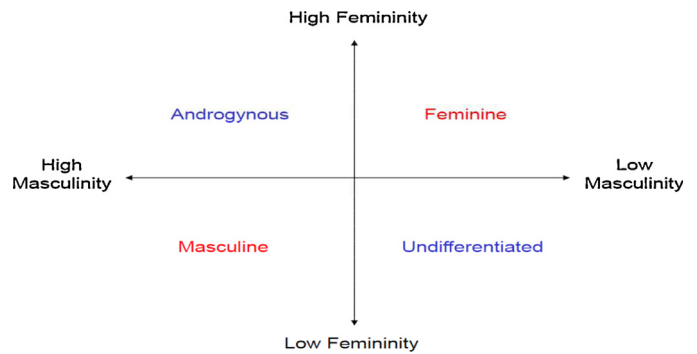


Fig. 1. The four traditional gender roles.

mean (Strahan, 1981), and the geometric mean (Bryan, Coleman, & Ganong, 1981).

### 1.4. International use of BSRI

The original 60 item and shorter versions of the BSRI have been used in various countries (e.g. France (Alain, 1987), Germany (Streiner & Norman, 2008), Spain (Mateo & Fernández, 1991), Japan (Katsurada & Sugihara, 1999; Sugihara & Katsurada, 2000), India and Malaysia (Ward & Sethi, 1986), China (Zhang, Norvilitis, & Jin, 2001), Turkey (Özkan & Lajunen, 2005), Canada (Gale-Ross et al., 2009), Brazil (Carver, Vafaei, Guerra, Freire, & Phillips, 2013; Hernandez, 2009)), and across different age groups of adolescents (Fontayne, Sarrazin, & Famose, 2000; Vega, 2007; Wilcox & Francis, 1997), adults (Behar, De la Barrera, & Michelotti, 2001; Bledsoe, 1983; Mateo & Fernández, 1991), and seniors (Carver et al., 2013; Gale-Ross et al., 2009; Windle & Sinnott, 1985) and appear to be reliable and valid across geography, age groups, and culture. However, to improve cultural fit a few items were removed when the BSRI was used in Zimbabwe (Wilson et al., 1990), Japan, and China (Katsurada & Sugihara, 1999). It has been suggested that age modifies the BSRI factor structure (Blanchard-Fields, Suhrer-Roussel, & Hertzog, 1994; Campbell, Gillaspay, & Thompson, 1997), thus the need for further validation in new older adult populations.

### 1.5. Gender and aging

Contrary to study of sex differences in health and well-being of older adults, there is limited research on gender and aging. Most available aging research has focused on health impacts of gender roles in separate populations of men (Downey, 1984) and women (Krames, England, & Flett, 1988) or have looked into changes in gender roles as people age not specifically gender-health relationships (Sinnott & Shifren, 2001; Twenge, 1997).

Given this gap in knowledge, the need for re-validation of the BSRI in different cultures and age groups, and the necessity for proper measurement of androgyny, the objectives of our study were: (1) to evaluate the construct validity of the Spanish version of 12-item BSRI scale in a Spanish older adults population, (2) to construct and compare different measures of androgyny, and (3) to compare effects of sex, self-perceived gender roles, and androgyny on physical and mental health of the aforementioned population.

## 2. Methods

### 2.1. Setting and participants

Community-dwelling older adults aged from 65 to 75, attending two rural and one urban primary care centers in Aragon, Spain were invited to participate in the study. All patients

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