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Attitudinal support for violence against women: What a population-level survey of the Australian community can and can't tell us

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ABSTRACT

Violence against women (VAW) is a serious and prevalent problem globally. Societal-level norms, practices and structures are among the factors contributing to it, sometimes referred to collectively as representing ‘cultures of support’ for VAW. Understanding factors contributing to these cultures is important for prevention, but remain the subject of debate. Population level surveys of attitudes towards VAW are one means to strengthen this understanding. Although there are a number of such surveys internationally, scholarly research based on secondary analysis of data, at least from surveys in high income countries, is scant. This article reports on new analyses of the Australian National Community Attitudes Towards Violence Against Women Survey (NCAS) to explore its potential to further empirical and conceptual understanding of cultures of support for VAW. To facilitate this, a scale to measure attitudes toward VAW was developed post hoc from the survey (the Violence Supportive Attitudes, or VSA-18, Scale). Subsequent analyses investigate the relationship between this scale and relevant demographic factors and a measure of attitudinal support for gender equality (GE). The GE measure, place of birth, employment and occupation, generation, education, and sex contribute to variance in the VSA-18 Scale. Findings are discussed in the context of theoretical debates, and directions for future research.

INTRODUCTION

Intimate partner violence and sexual assault are common in Australia. Although affecting women and men, these forms of violence are more likely to be perpetrated by a man and the victim is more likely to be a woman (Cox, 2015, pp. 28,55,58). One in 4 Australian women reports being subject to partner violence, and 1 in 3 to sexual assault in their life-time (Cox, 2015, pp. 78, 23), with serious consequences

for their physical and mental health (Ayre, Lum On, Webster, Gourley, & Moon, 2016). Although this violence, herein referred to as violence against women (VAW), affects women across the community, those experiencing other forms of subordination (based on attributes such as race, ethnicity, class or ability) experience more severe and prolonged forms (Sokoloff & Dupont, 2005).

While much research has sought to understand VAW in relation to the individual characteristics of victims and perpetrators (e.g. past abuse histories, alcohol misuse), or to the dynamics in their relationships (e.g. poor conflict management), research suggests these factors in isolation may be limited in explaining why violence occurs (Ali & Naylor, 2013; Jewkes, 2012). As such, a growing body of research seeks to understand societal level influences, and has found correlations between VAW and a range of social norms (e.g. normative support for male dominance in the community), structures (e.g. social class and gender hierarchies) and practices (e.g. adherence to rigid gender roles) (Abramsky et al., 2011; Heise, 1998). These are understood to operate, individually or collectively, to produce an environment or 'culture' in which VAW is tolerated, or is at least not clearly sanctioned against. It is increasingly accepted that addressing these norms, structures and practices is an important component of an overall strategy to prevent VAW (Ellsberg et al., 2015).

Heise (1998) proposed an adaptation of ecological systems theory as a framework for understanding VAW. This approach incorporated the individual-level risk factors indicated in the literature, and, importantly, prompted a move beyond an exclusive focus on individual factors to highlight the multi-level nature of causation across relational, community, organisational and societal levels. While ecological systems theory guides the identification and mapping of correlates of VAW, specific theories are required to understand the relative importance of factors at and within various levels of the social ecology and the relationships or 'pathways' between them and VAW.

Theories seeking to explain the role of social structures, norms and practices (as opposed to individual psychological or interpersonal factors) in VAW are the subject of a large and complex body of literature and a detailed review is beyond the scope of this article (for reviews see Larsen, 2016). However, three broad conceptual approaches can be identified, each with a somewhat different theoretical emphasis. The first responds foremost to the gendered patterns of VAW, maintaining that VAW reflects and reinforces a society in which men and women have different social experiences, positions and/or differential access to power and resources (e.g. DeKeseredy, 2011; Dragiewicz, 2009). The second approach, responding to variation in the prevalence and experience of violence among women in different social circumstances, gives greater emphasis to structures, norms and conditions associated with material deprivation (e.g. Benson & Fox, 2004), neighbourhoods (Kirst, Lazgare, Zhang, & O'Campo, 2015; Voith, 2017) or social hierarchies other than gender, such as those based on ethnicity or class (e.g. Renzetti, 2009). The third

approach seeks to account for both the gendered nature of VAW and variation in risk among women by conceptualising cultures of support as influenced by both gender and other determinants of deprivation and social position as they intersect or interact with one another. While this approach is commonly identified with intersectionality theorists (e.g. Crenshaw, 1991; Nixon & Humphreys, 2010; Sokoloff & Dupont, 2005), others have also advanced theories implicating both gender and other forms of inequality and deprivation in violence against women (e.g. Michalski, 2004). This is a necessarily brief summation since in practice there are substantial differences within these theoretical categories (Larsen 2016; Lawson, 2012). However, for the purposes of the current article, it is important to highlight that the relative contributions of gender inequality, and other social inequalities and forms of deprivation to cultures of support for VAW are contested (Larsen, 2016; Winstok, 2011).

Population level surveys of attitudes towards VAW are one possible means of furthering understanding of the societal factors that contribute to cultures of support for VAW. Although there are a number of such surveys internationally, scholarly research and analyses from surveys conducted in high income countries, is scant (Gracia & Lila, 2015). Indeed, in the Australian context, although a national population level survey on attitudes towards violence against women has been conducted three times since 1995 (Webster et al., 2014), no analyses has been reported in the scholarly literature. This article, reporting on new analyses of the 2013 wave of the Australian National Community Attitudes Towards Violence Against Women Survey (NCAS), is the first scholarly study exploring the potential in this data to further understanding of cultures of support for VAW. Although details regarding the survey are reported in the method, the overarching aim is to examine the relative contribution of correlates in the survey in the context of theories seeking to understand cultures of support for VAW. However, first an orientation to the existing literature on the role of attitudes in understanding VAW is outlined, as well as what is currently known regarding demographic and other correlates of VAW supportive attitudes (VAWSA), focusing on evidence from reviews of studies in high income countries.

LITERATURE REVIEW

Attitudes and cultures of support for VAW

Much scholarly research has explored the construct of attitudinal support for VAW. Although based primarily on non-probability samples, (a point returned to below), this research has conceptualized attitudes supportive of VAW as containing several common themes, including attitudes that justify, excuse, trivialise or minimise violence, or that shift blame for violence from perpetrator to victim (Edwards, Turchik, Dardis, Reynolds, & Gidycz, 2011; Grubb & Turner, 2012; Suarez & Gadalla, 2010; Waltermaurer, 2012; Yamawaki, Ochoa-Shipp, Pulsipher, Harlos, & Swindler, 2012). For example, in

their review, Grubb & Turner (2012) suggest that while attitudes towards sexual violence vary among societies, they tend to follow several key themes ‘whereby, they blame the victim for their rape, express a disbelief in claims of rape, exonerate the perpetrator and allude that only certain types of women are raped’ (Grubb & Turner, 2012, p. 445 emphasis in original).

There is a relationship between VAWSA and the perpetration of violence, victim responses, and the reactions of family members, friends and professionals, as well as responses within key institutional (e.g. the justice system) and community environments (Edwards et al., 2011; Flood & Pease, 2009). The nature and direction of the relationship between individual attitudes and behaviour remains contested. While in earlier scholarship attitudes were theorised to be linked to behaviour directly (e.g. Bentler & Speckart, 1979), it is now more widely held that this influence is exerted via the impact of attitudes on social norms (Fishbein & Ajzen, 2010). In contrast, others maintain that attitudes follow behaviour (Rebellion, Mariasse, Van Gundy, & Cohn, 2014).

However, in the sociological literature attitudes are increasingly understood as reflecting and reinforcing norms, structures and practices in families, organisations and communities, and in larger social institutions such as the media, and so can be indicators of cultures of support for VAW across and within the population (Pease & Flood, 2008). Further, relationships between attitudes and other factors, such as education, may be suggestive of particular structural or normative influences on cultures supportive of VAW. This suggests that studies of attitudes have the potential – along with other sources of information – to build understanding of the relative importance of various social factors in cultures of support for VAW.

Two bodies of literature on VAWSA can be distinguished. The first, based on psychometrically validated scales of attitudes, has the strength of using robust instruments to measure VAWSA as a concept (Edwards et al., 2011; Exner-Cortens, Gill, & Eckenrode, 2016; Powell & Webster, 2016; van der Bruggen & Grubb, 2014). However, its limitation is that most studies are based on small non-probability samples (Suarez & Gadalla, 2010), working against drawing population level inferences. The second body of literature (canvassed briefly in the introduction above) reports population-based studies of VAWSA led by government and non-government organisations (e.g. European Commission Directorate-General for Justice and Consumers, 2016; Harris / Decima, 2009). These surveys stand in contrast to the scholarly scales literature, in that correlations tend to be explored between each individual item and demographic and other factors. The capacity to measure VAWSA as an overall concept is a gap in these surveys and a barrier to realising the analytical potential of the large probability samples on which they

are typically based. In this respect the Australian NCAS has been no exception, a point returned to in describing the study below.

A small number of VAWSA questions have also been included in the World Values Survey and the Demographic and Health Surveys (DHS). While supporting an important body of research (e.g. Herrero, Rodriguez, & Torres, 2016; Rodriguez Martinez & Khalil, 2016), the small number of VAWSA items works against the formation of validated multi-item measures and limits their conceptual comprehensiveness. Findings from DHS surveys, which are conducted in low and middle-income countries, may not necessarily be generalisable to high income countries, particularly given variation between countries at different income levels in gender equality and economic and human development (Jahan, 2016), both of which are implicated in violence against women (Heise & Kotsadam, 2015).

Prior research on correlates of attitudes to VAW in high income countries

Like VAW itself, VAWSA are influenced by multiple factors across the social ecology (Flood & Pease, 2009). This literature has developed in what Eigenberg & Policastro (2016) have described as a ‘piecemeal’ fashion, and studies designed to enable assessment of the relative contributions of multiple factors are relatively rare. Nevertheless, both sex and a range of other demographic and place-based factors have been found to be influential as outlined in the paragraphs to follow.

Men are more likely to hold VAWSA than women (Hockett, Smith, Klausing, & Saucier, 2016; Suarez & Gadalla, 2010; van der Bruggen & Grubb, 2014), with Suarez and Gadalla (2010), in their meta-analysis of 37 studies of correlates of rape myth acceptance, finding stronger effect sizes for sex relative to other demographic factors. This has been hypothesized to reflect gender differences in exposure to factors shaping attitudes, or the influence of men’s interests to hold such attitudes, as they maintain symbolic structures of male power (Bolzendahl & Myers, 2004; Hockett et al., 2016).

Flood and Pease (2009), in their review of factors influencing VAWSA, argue that it is not sex per se that influences VAWSA, but rather a person’s ‘gender orientation’: that is, the ways in which individuals understand and enact gender roles, identities and relationships, regardless of their sex. This is reflected in the consistent association found between VAWSA and attitudes supportive of stereotyped and rigid views of gender roles and identities, as well as adversarial or sexist views of gender relationships (Suarez & Gadalla, 2010). In Suarez and Gadalla’s (2010) meta-analysis these yielded stronger effect sizes relative to other factors. Further evidence of this relationship can be found in the link between VAWSA and male dominated and hyper-masculine peer and organizational environments (DeKeseredy & Schwartz, 2013;

Murnen, 2015); between VAWSA and indicators of gender equality (GE) at the national level (Rodríguez Martínez & Khalil, 2012); and between these attitudes and exposure to media content featuring stereotyped or denigrating portrayals of women and gender relations, in particular pornography (Flood & Pease, 2009). Within this context, the lack of a more substantial gap between the sexes is understood to reflect women's internalization of normative and structural influences, a phenomenon whereby persistent discrimination results in individuals incorporating negative views about their group as part of their internal view of themselves (Szymanski, Gupta, Carr, & Stewart, 2009).

Variation has also been found by age, with VAWSA being strongest among the young and the old (Exner-Cortens et al., 2016; E. Gracia & Lila, 2015), possibly reflecting developmental factors associated with maturation (Harris, Honey, Webster, Diemer, & Politoff, 2015) and ageing (Stewart & Radvansky, 2009). However, it is also possible that like attitudes toward gender and sexuality, these patterns reflect historical shifts in gendered social arrangements being more liberal among those reaching adulthood in the 1960s, 70s and 80s, than in those born in the pre and (possibly) post second wave feminist eras (Bolzendahl & Myers, 2004; van Egmond, Baxter, Buchler, & Western, 2010).

Turning now to the role of other forms of subordination in shaping attitudes, there is evidence that VAWSA are more prevalent among those of lower socio-economic status (SES) as measured by education and income level, occupational prestige and employment (Gracia & Lila, 2015; Suarez & Gadalla, 2010); in non-urban compared with urban areas (Edwards, 2015; Gracia & Lila, 2015); in areas affected by social disorganization (Button, 2008; Enrique Gracia & Herrero, 2007); and among immigrants in high income countries as compared with host communities (Rodríguez Martínez & Khalil, 2016). However, the effect sizes for these demographic factors are generally modest (Suarez & Gadalla, 2010) and when variance is reported, it tends to be low (See for example, Carlson & Worden, 2005; Vogt, Bruce, Street, & Stafford, 2007; Worden & Carlson, 2005).

If considered as proxies for socio-economic position, these findings support explanations implicating sources of subordination other than, or in addition to, gender. Further, sex and SES variations are also found in studies of attitudes towards other forms of interpersonal violence (e.g. child maltreatment, community violence) (Markowitz, 2003) and hence may not necessarily reflect attitudinal support for VAW in particular, but rather attitudinal support for interpersonal violence in general. Men and people of lower SES are more likely to be victims of, or to witness, physical forms of interpersonal violence in their families, in institutional environments and in the community (Markowitz, 2003). Since such exposure is also correlated with VAWSA (Abramsky et al., 2011; Franklin & Kercher, 2012), it may be this, rather than negative attitudes to gender that contributes to VAWSA. That is, VAWSA may not be a separate, gender related construct, but rather a subset of wider 'cultures of violence'.

As VAWSA varies both with measures of immigrant acculturation (Bhanot & Senn, 2007) and between countries (Nayak, Byrne, Martin, & Abraham, 2003), variation by birthplace may be due to social marginalisation in the settlement environment, or to pre-arrival exposures, such as violence, conflict and trauma (Rees & Pease, 2007), or low human development, modernisation or globalisation (Rodríguez (Rodríguez Martínez & Khalil, 2012).

However, alternative explanations for variation in demographic factors are also possible. Turning first to education, there is evidence that this has a liberalising impact on attitudes towards gender and sexuality (Davis & Greenstein, 2009). This suggests that education may reduce VAWSA through a pathway of liberation from traditional gender role ideology, rather than social mobility per se. Likewise, in addition to prestige, occupations can also be distinguished by their sex composition, gender hierarchies, and the degree to which masculinized or feminized cultures prevail within them (Connell & Pearse, 2015). As suggested above, cultures supportive of VAW have been found to be particularly pronounced in hyper-masculine environments.

Similarly, when considering the impact on attitudes of exposure to interpersonal violence it is difficult to disentangle the impact of violence exposure per se from both gendered patterns of violence (with interpersonal violence being perpetrated primarily by men against women and other men) (Cox, 2015), and the gendered social context in which it frequently takes place (Fleming, Gruskin, Rojo, & Dworkin, 2015). Variations in attitudes among immigrants may also be due to exposure to more unequal country-of-origin gender orders (World Economic Forum 2016), or variations in advocacy and programming to prevent VAW (Pierotti, 2013). While VAWSA among immigrants moderate with acculturation, this change is largely mediated by liberalisation in their attitudes toward gender (Bhanot & Senn, 2007).

Consistent with intersectional theories, many of the demographic factors may be relevant as they interact with gender related factors. For example, among low SES men, subordination may have the effect of challenging traditional structures of male power (illustrated most starkly in the impact of unemployment on the breadwinner role) and VAWSA may be adopted to reassert these structures (Kiss et al., 2012). Low SES women may be more inclined to internalise negative attitudes or to adopt VAWSA to address the dissonance between their personal disdain for violence and the negative consequences for themselves and men, should they take steps to hold men accountable for its use (Nash, 2005). Similarly, Carrington & Scott (2008) propose that in rural areas distinctive hyper masculine cultures and the particular impact of rural economic restructuring on men are both influential in the development of VAWSA, while Rees and Pease (2007), point to the intersecting influences of gender and migration and settlement.

In summary, the extant literature suggests, consistent with ecological systems theory, that there are multiple factors influencing VAWSA across the social ecology. Among these, sex and attitudes toward gender are significant influences, lending support for theories that privilege gendered social arrangements in shaping cultures supportive of VAW. Men's and women's attitudes are influenced by some common factors. However, in addition to there being differences in the degree to which men and women hold VAWSA, there may be also be differences between men and women in the factors influencing their attitudes. Specifically, the findings above suggest the possibility that men's attitudes may be particularly influenced by unemployment, location in a rural community or working in a highly masculinised occupation. There is evidence that other demographic and contextual factors feature among the correlates of VAWSA, although when compared with sex and gendered attitudes, they tend to yield lower effect sizes in prior research. Further, as discussed above, different explanations for their nature and significance are advanced.

While women with disabilities are particularly affected by VAW (Plummer & Findley, 2011), there are no known studies exploring VAWSA among people (men or women) with disabilities. However, there are a number of factors that co-occur with disability that are also shown in prior research (referred to above) to increase the probability of holding VAWSA, including a high risk of interpersonal violence (Khalifeh, Howard, Osborn, Moran, & Johnson, 2013) and economic disadvantage (Bradbury, Norris, & Abello, 2001). This suggests that disability may be relevant in understanding the relative contribution of gender and other forms of inequality in VAWSA.

THE CURRENT STUDY

In addition to items gauging VAWSA, the NCAS (n= 17,517) collects data on respondent demographic characteristics and includes a scale to measure attitudinal support for GE. In waves prior to 2013, analyses had been undertaken at the individual item level only, making patterns difficult to discern and, if apparent, to defend as valid. In 2013, all 38 items measuring attitudes were used to form a construct to strengthen the analytical potential of the survey in 'top-line' public reporting (Webster et al., 2014).

The first purpose of this current study was to build on the 38-item construct to develop a scale post hoc from the survey, using a process of item reduction and validation. The second purpose was to use the measure to assess the relationship between this scale and the GE Scale, as well as other theoretically relevant demographic variables. More specifically, the study is guided by four questions:

1. Are Australians who dis-endorse GE more likely to endorse VAWSA?
2. To what extent do sex and attitudes toward GE contribute to variance in VAWSA after controlling for other theoretically relevant socio-demographic factors?

3. What are patterns of variance among Australian men and among Australian women?
4. Are there differences in the influence of factors between men and women?

In examining these questions, this study seeks to make three unique contributions. First, it demonstrates an approach to strengthening the analytical potential of population-based attitudes surveys. Second, it is the first known study in a high-income country to investigate correlates of VAWSA in a population-based probability sample using a validated measure of VAWSA (thus complementing an extensive body of literature investigating these questions using smaller non-probability samples). Third, it documents a scale that could be used in future studies, with the added advantage of comparability with a national sample. In the following section, we report on our method and overall approach, including detail about the NCAS instrument.

METHOD

Participants

In the 2013 NCAS, probability-based methods were used to generate a sample of 17,517 Australians, for a 20-minute telephone survey on knowledge of, and attitudes towards VAW; 8,750 were interviewed on fixed telephone lines and 8,767 by mobile phone (the latter to reach typically under-represented individuals) (Pennay & Vickers, 2013). Response maximization techniques, such as letters of invitation and interviewing in languages other than English, were used. Sample weighting was undertaken to reflect the probability of being selected in a household and to align with Australian population benchmarks for age, education attainment, birthplace and sex (Webster et al., 2014). A response rate of 27% was achieved, comparing favorably to other similar surveys (Kohut, Keeter, Doherty, Dimock, & Christian, 2012).

Measures

The NCAS survey instrument was first developed in 1995 and reviewed prior to waves in 2006 and 2009 (Webster et al., 2014). Changes were minimized to enable the inter-wave comparisons required to monitor change over time, a key objective of the survey. The survey contains items measuring three key concepts: attitudinal support for VAW, attitudinal support for GE and knowledge of VAW (not considered in this paper). Three modules from the survey form the basis of analyses in the current study and are further described here.

Violence against women supportive attitudes. Items measuring attitudinal support for VAW were identified from the 2013 instrument by an expert panel using a consensus approach. These 38 items were further categorized by the panel into the five domains introduced above: justifying, excusing, trivializing,

minimizing VAW, or shifting responsibility for this violence from the perpetrator to victim. As a first step, factor analysis was conducted using the 2013 data set to confirm the fit of items to the three concepts (i.e. GE, knowledge of VAW, and attitudes towards VAW). Three of the items did not load unambiguously onto any of the factors and were removed from the model. Assessment of how well the items contributed to the concept of VAWSA and how consistently respondents answered them was undertaken using Rasch analysis. Items with values that did not meet acceptable fit mean square thresholds were removed (Bond & Fox, 2015). The remaining items were trialed via an online survey panel representative of the Australian adult population (n=600). Five models, ranging from 12 to 29 items, were trialed to select the model representing the best compromise between minimizing respondent burden in future use and measurement precision. Rasch analysis indicated that a scale consisting of 18 items (Appendix One) had both person and item separation indices close to recommended thresholds (Bond & Fox, 2015). Factor analysis showed a modest fit of items to their assigned domains and a Cronbach's alpha of $\alpha = .94$ for the online sample (N=600) and $\alpha = 0.88$ for the whole 2013 data set (N = 17,517). This is referred to as the Violence Supportive Attitudes (VSA-18) Scale.

Gender equality attitudes. The GE Scale ($\alpha = 0.75$, N=17,517) comprises five items from the World Values Survey, focused primarily on women's roles in the public sphere; two items on gender power dynamics in relationships; and a single item from a scale assessing support for sexism. Its development has been reported elsewhere (Webster et al., 2014).

Responses to items in both the VSA-18 and GE Scales are on a five-point Likert scale from strongly agree, agree, neither agree nor disagree, to disagree and strongly disagree.

Demographic variables: Selected or derived to assess relationships identified in the literature, these included sex, generation, educational attainment, employment, birth place, occupation (coded at the time of data collection at the highest possible level of aggregation), area remoteness, (using the Remoteness Area Index, classifying areas based on their distance from goods and services), and place-based disadvantage, (using the Socio-Economic Index for Areas (SEIFA), Relative Socio-Economic Advantage and Disadvantage Index). This is a summary measure classifying people into quintiles with one being the most disadvantaged and five the most advantaged. The place-based measures were derived using respondent post codes. To assess the influence of disability, an impairment measure (designed to identify disability for the purposes of equalizing opportunity) was selected as the most appropriate from the many models to identify disability in the literature (Palmer & Harley, 2012). The measure, adapted from the Canadian Social Survey, identifies persons with sensory, communication and physical disabilities (Statistics Canada Social and Aboriginal Statistics Division, 2005).

ANALYSIS PLAN

Responses to the 2013 NCAS survey were analyzed using the Rasch measurement model to obtain objective, fundamental, linear measures from stochastic observations of ordered category responses (Linacre, 2014). The resulting Rasch measures were standardized and categorized (see below) for analysis. To gauge the distribution of the scores, density plot trace graphs were developed for both measures (See Figures 1 and 2).

- Figures 1 and 2 -

The patterns for the VSA-18 and GE Scales, suggest a large proportion of low scoring individuals in the case of VSA-18 (indicating dis-endorsement of VSA-18) and high scoring individuals for GE (indicating endorsement of GE). Current knowledge of the impact of attitudes on behavior and social norms pertaining to VAW is not sufficiently well developed to identify thresholds at which negative impacts are probable (Edwards et al., 2011). Accordingly, an approach was taken to enable bivariate comparisons to be made between groups or concepts. This involved dividing the scores into quartiles. For the VSA-18 Scale, the first quartile was labelled as low VSA-18 (i.e. persons with a tendency to dis-endorse VAWSA) relative to the second and third quartiles (medium VSA-18), and the fourth quartile (relatively high VSA-18). The same approach was taken with the GE Scale, with the first quartile including persons with a tendency to dis-endorse attitudes supportive of GE (low GE) relative to the fourth quartile, those inclined to hold attitudes endorsing GE (high GE). As the categories are researcher assigned and designed for the purposes of comparing groups, they are not a measure of the absolute presence of high, medium or low levels of attitudinal support for these concepts, but rather classify respondents' attitudes relative to other respondents. While selected as the most straightforward means of assessing bivariate relationships, this classification was also used for the multivariate analysis for consistency. Selected models comparing outputs using standardized scores with those using the categories, showed that the overall patterns were the same and differences in both R^2 and the coefficients were insignificant.

To address the first research question, the relationship between GE and VSA-18 Scale score categories was assessed at the bivariate level. A polychoric correlation was calculated for the categories and a Pearson's correlation for the scores. For the second research question, gauging the influence of individual demographic factors as well as GE, multiple linear regression models were constructed including the GE Scale score category and demographic factors as explanatory variables and the VSA-18 Scale score as the outcome measure. Due to collinearity, employment status and occupation were combined into a single

variable. Variance inflation factors were inspected to check for multicollinearity and were found to be satisfactory (Fox & Weisberg, 2011). For categorical variables, coefficients in the regression models are with respect to the reference category for each variable, as is the usual practice.

Three sets of regression models were tested. Set A included the demographic variables only, Set B included the GE Scale category only, and Set C included both the demographic variables and the GE Scale score category. To address the third research question, each of the sets included regression models for men, women and the whole sample. Separate models for men and women were produced reflecting findings in the literature indicating sex differences in influences on VAWSA. To address our fourth research question, coefficients in the models were compared and tested for significance (Paternoster, Brame, Mazerolle, & Piquero, 1998).

FINDINGS

Addressing the first research question, those with low violence supportive attitudes (low VSA-18) were more likely than the whole sample to also hold attitudes supporting GE (high GE) (44% versus 24% $p < .01$), whereas those with high VSA-18 were less likely to do so, as compared with the whole sample (7% versus 26%, $p < .01$) (Table 1).

- Insert Table 1 -

There was a correlation between VSA-18 and GE using the categories [$\rho = -0.53$, $p = 0.01$] and standardized scores [$r = -0.47$, $n = 17,517$, $p < 0.01$] as inputs. The scatterplot (Figure 3) confirms the modest correlation between scores on the two Scales.

- Figure 3 -

The adjusted R^2 for the models ranged from 13.7% for the men's model containing demographic variables only (Set A) to 28.3% in the model for the whole sample containing both demographic variables and the GE Scale category (Set C) (Table 2). The models containing the demographic variables only (set A) had the lowest adjusted R^2 . While the models with the GE score only (Set B) had somewhat higher adjusted R^2 than Set A, the models containing both the demographic data and the GE Scale category (Set C) had the highest. Accordingly, Set C was chosen for the remaining analyses.

- Table 2 -

In the following section, findings for the whole sample are reported (research question two). This is followed by a description of patterns within the model for men and the model for women (research question three), and following that the key differences between the men's and women's models (question four).

The largest contribution to variance in the whole sample (Table 3) was the GE Scale category accounting for more than half of adjusted R^2 (55.2%). The demographic variables accounted for the remaining explained variance. Of these, the main contributors to adjusted R^2 in each model in order of contribution were place-of-birth (17.7%), employment and occupation (8.4%), age (7.8%), education (3.8%), and sex (2.5%).

- Insert Table 3 here -

Those tending to have a high VSA-18 score (signifying a tendency to endorse VAWSA) were people categorised as having low ($\beta = .99, p < .001$) or medium ($\beta = .50, p < .001$) support for GE (when compared with persons categorised as having a high level of support for GE) and persons born in a non-main English speaking country ($\beta = -.48, p < .001$) (compared with those born in Australia). Among occupations, compared with professionals those more likely to have high VSA-18 were persons in technical and trade ($\beta = .17, p < .001$), clerical and administrative ($\beta = .07, p < .05$), sales ($\beta = .13, p < .001$), machinery operator and driving ($\beta = .22, p < .001$) and laboring occupations ($\beta = .25, p < .001$), as well as those who are unemployed ($\beta = .25, p < .001$) or not in paid work ($\beta = .21, p < .001$). Persons aged 16-24 years ($\beta = .17, p < .001$) or over 65 years ($\beta = .26, p < .001$) were more likely to have high VSA-18 (compared with those 25-64 years), as were persons with secondary education or less ($\beta = .13, p < .001$) (compared with the university educated) and men ($\beta = .05, p < .001$) (compared with women) (Table 4). Coefficients for disability, and the two place-based indicators (data not shown) were close to 0.

- Table 4 -

Turning now to patterns within the men's and women's models, demographic factors contributed 40.3% to adjusted R^2 in the men's model and 48.3% in the women's (Table 3). In the men's model, those with a trade, certificate or diploma were more likely to have a low VSA-18 score (i.e. less likely to endorse violence supportive attitudes) relative to men with a university education or higher ($\beta = -.06, p < .05$), while those with secondary education were more likely to have a high VSA-18 score than men with a tertiary education ($\beta = .06, p < .05$). In the women's model only those with secondary education varied

from the reference category ($\beta = .18, p < .001$). In the men's model VSA-18 Scale scores varied from the reference category (professionals) among men in the technical and trades, machinery operating and driving and labouring occupations as well as among the unemployed and those with no paid work. In the women's model there was variation from the reference category in all occupational groups except machinery operators and drivers, managers, and community and personal services workers. The differences between coefficients in the men's and women's models were statistically significant for the education variables (Table 4).

DISCUSSION

Formation of a post-hoc measurement of VAWSA

A key purpose of this study was to develop a psychometrically valid measure of VAWSA post hoc to enable relationships between VAWSA and other factors to be explored in a large population level probability sample. As far as we know, this is the first time a comprehensive scale has been developed in this way, and this has important implications for strengthening analysis of other population-based surveys. Although the VSA-18 Scale had acceptable measurement properties, it was better able to distinguish persons holding VAWSA at the extremes (that is, those with very weak or very strong VAWSA) than among respondents within categories. This is due to the lack of sensitivity in the items themselves, a problem identified elsewhere in the literature and attributable both to the challenges in measuring implicit attitudes (Swim & Cohen, 1997) and to social desirability bias, a particular concern in research on VAWSA owing to the salience of the issue, and likely to be compounded by NCAS's origins in a 1995 instrument. Including more contemporary and sensitive items or approaches to questioning in future surveys would provide a basis for a revised scale with improved measurement precision.

Implications for theory

The finding that sex (being male) has only a weak correlation with the VSA-18 Scale score, and that this is weaker than education, age and occupation, is contrary to findings in the literature and to the theoretical proposition that men are markedly more likely to hold VAWSA. This may be because unlike prior studies using validated scales to measure VAWSA, the current study was based on a large, randomly selected sample. With some exceptions (discussed further below) the patterns of influence were similar in the men's and women's models. This study used the total VSA-18 score, and the measure was formed with items representing five domains of VAWSA identified in the literature. Future analyses should explore differences at the domain level, particularly given prior research suggesting domain variation (Eigenberg & Policastro, 2016). It is also possible that sex differences do prevail in particular environments (a point returned to below), but are masked in a large national sample.

The findings that low support for GE predicts a high level of support for VAW, and that GE contributes relatively more to variance in the VSA-18 score than the demographic inputs, are consistent with findings in the literature and lend weight to claims that gendered social arrangements are among the strongest known determinants of attitudes towards VAW. This suggests there would be merit in exploring the demographic correlates of GE.

However, the correlation between the GE and VSA-18 Scales is modest. This may be because the GE scale has similar measurement limitations to VSA-18 (discussed above), or that gendered cultures are among a range of contributing factors (as suggested in ecological and intersectional understandings of cultures of VAW). Further, the GE Scale measures only two dimensions of the gendered cultures characterising Australian society (Connell & Pearse, 2015) and implicated in cultures of VAW in the literature. A scale able to measure all concepts implicated in cultures of VAW (e.g. adversarial and hostile attitudes towards women, rigid gender identities) could increase explanatory power.

The finding that country of birth made the largest contribution among the demographic variables represents a fruitful avenue for further research. There is potential to explore the influence of pre-arrival factors by coding respondent country of birth data using country-level indices of theoretically relevant conditions, such as GE, human rights, economic and human development, violence prevalence, and programming to reduce VAW. Likewise, measures in, or added to, the survey could assist in gauging influences in the settlement environment (e.g. indicators of SES and acculturation).

Age related patterns in this study are suggestive of a pattern found in research on attitudes toward gender and sexuality (van Egmond et al., 2010); that being that a high VSA-18 score was more likely to be found among the youngest and oldest cohorts whose formative years coincided with either pre and (possibly) post second wave feminism. Further research involving multi-wave statistical modelling (see for example, van Egmond et al., 2010) and/or longitudinal designs is required for a more definitive test of this hypothesis.

Of the demographic inputs that could be said to serve as proxies for other forms of subordination (SEIFA, area level remoteness, disability, employment and occupation and education), only employment and occupation and education were found to be correlated with VSA-18 or to make noteworthy contributions to variance. This may be because education and unemployment are markers of deprivation and wider 'cultures of violence'. Alternatively, it may be due to the liberalising impact of education on gender attitudes or, for men, the adoption of VAWSA to reassert symbolic power in the face of unemployment.

The finding that low education was more strongly associated with high VSA-18 among women than men may be because women with VAWSA are less likely than men with VAWSA to progress in their

education. Alternatively, it is possible that education has a particularly liberalising impact on the gender-related attitudes of women. Men with trade, technical or certificate level education (in contrast to those in trade and technical occupations) are less likely than university educated men to have high VSA-18. This may support the finding in the literature that men's attitudes are particularly influenced by gendered organizational cultures, since men with technical, trade and certificate qualifications are likely to work across a broader range of workplace contexts (e.g. hairdressers, allied health) than men in male dominated occupations (Workplace Gender Equality Agency, 2016). A similar possibility is suggested in the men's model on the occupation variable where variation appears to reflect differences in the sex composition of the occupation rather than skill (e.g. there is variation among men in the relatively low skilled, male dominated occupations of labouring, technical and trades and machinery operating and driving, yet no variation among men in female dominated, sales and clerical and administrative occupations). Coding of occupational data at a lower level of aggregation would enable further investigation of this.

The correlation between social disorganization and VAWSA found in other studies has been hypothesized to be due to the breakdown of normative controls (Button, 2008). This analysis could be strengthened with more direct measures of disorganisation (e.g. social connectedness, confidence in law enforcement) than the disadvantage measure (SEIFA) used in this study

Given the hypothesis that VAWSA in rural areas may be influenced by the interacting influences of hyper masculine cultures and the impacts of rural economic restructuring (Carrington & Scott, 2008), further analysis of remoteness taking account of both GE Scale scores and economic diversity between areas is indicated. Likewise, it is possible that greater variation in the disability variable might be found with a measure that better distinguishes disability severity and type.

The number of study inputs contributing to variance, and the proportion of variance remaining unexplained in the models confirms that VAWSA are influenced by multiple factors and indicates the need to include other theoretically relevant correlates in future surveys, including measures of attitudinal support for other forms of violence, past exposure to violence, the sex make-up of and cultures within, peer and organisational contexts, and media consumption habits. This would enable the relative contribution of various inputs to be gauged as well as their relationships to one another. The inclusion of items gauging social norms at the individual level (i.e. what respondents believe others think or would expect) would be valuable given the proposition in the literature that social norms have a greater impact on behaviour than personally held attitudes (Fishbein & Ajzen, 2010).

Study limitations

As with other studies on VAWSA, this study has some limitations. A response bias cannot be excluded and, as with any cross-sectional research, associations do not necessarily mean that constructs are causally related. The relationship may be in the reverse direction, bi-directional or influenced by a third variable common to study inputs and the outcome measure, but not included in the study. The latter possibility, referred to as missing variable bias, cannot be excluded in the relationship found between the VSA-18 and GE scales. Like VAWSA, attitudes to GE are associated with multiple factors (for reviews see Bolzendahl & Myers, 2004; Davis & Greenstein, 2009), and many of these overlap with correlates of VAWSA discussed in the article. However, these could not be accounted for in the study since not all relevant variables can be included in a 20-minute survey. Social desirability bias varies with social distance between the research enterprise and research participants (Schwarz, Oyserman, & Peytcheva, 2010). Socially desirable responding requires a nuanced understanding of the issue being researched which is least likely to occur in groups with VAWSA. This means that some of the differences between groups may be due to social desirability bias.

CONCLUSION

Attitudes are indicators of cultures of support for VAW, and hence can be useful to investigate factors driving these cultures. Population based attitudes surveys are a potential source of data to improve understanding of cultures of support for VAW as they are typically based on large probability samples. This study demonstrated a means of realizing this potential by developing a scale post hoc from the survey to measure VAWSA, and using this to explore relationships between it and other variables. The study confirms prior research in finding that attitudes towards GE, and country of birth are key correlates, and to a lesser extent, occupation and employment, generation, education and sex. However, in contrast to other research, differences between men and women were modest relative to these other factors. There are some minor differences between men and women in factors influencing attitudes. Avenues for future research are proposed, along with ways in which population surveys in general and the NCAS in particular could be strengthened.

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Appendix – Violence Supportive Attitudes Scale (VSA-18).

1. *Violence against a partner can be justified if a woman ends or tries to end the relationship*
2. *Violence against a partner can be justified if a woman makes a man look stupid in front of his friends*
3. *Violence against a partner can be justified if a woman admits to having sex with another man*
4. *Violence against a former partner can be justified if a man believes the woman is being unreasonable about property settlement and financial issues*
5. *Violence against a former partner can be justified in order for a man to get access to his children*
6. *Domestic violence can be excused if the offender is heavily affected by alcohol*
7. *Domestic violence can be excused if it results from people getting so angry that they lose control*
8. *Domestic violence can be excused if the violent person genuinely regrets what they have done*
9. *Domestic violence can be excused if the person is under a lot of stress*
10. *Domestic violence can be excused if the person was abused as a child*
11. *Domestic violence is a private matter to be handled in the family*
12. *It's woman's duty to stay in a violent relationship to keep the family together*
13. *Domestic violence can be excused if the victim is heavily affected by alcohol*
14. *A lot of time women who say they were raped led the man on and later had regrets*
15. *If a woman doesn't resist physically even if protesting verbally then it isn't really rape*
16. *Women often say 'no' when they mean 'yes'*
17. *If a woman is raped while she is drunk/affected by drugs she is partly responsible*
18. *If a woman goes into a room alone with a man at a party it is her fault if she is raped*

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TABLE 1

Relationship between Violence Supportive Attitudes (VSA-18) Scale scores and Gender Equality (GE)

Scale scores

		<u>GE Scale scores</u>			
		<u>% low cases</u>	<u>% medium cases</u>	<u>% high cases</u>	<u>% of all cases</u>
<u>VSA-18 Scale scores</u>					
	<u>Low</u>	7%**	21%**	44%**	24%
	<u>Medium</u>	39%**	57%**	50%	50%
	<u>High</u>	54%**	22%**	7%**	26%
		100	100	100	100
		(n =4,050)	(n=7,445)	(n=6,000)	(n =17,495)
** Difference between proportion in GE Scale score category versus the overall proportion is statistically significant, $p < .01$					
Persons with a high VSA-18 Scale score are inclined to endorse attitudes supportive of VAW relative to those with a low score. Persons with a high GE Scale score are inclined to support gender equality relative to those with a low score.					
Values may not add to 100% due to rounding					

TABLE 2:

Variance in VSA-18 Scale scores explained by the regression models for the whole sample, men and women

Model	R-squared	Adjusted R-squared
Set A: Demographic Variables		
Whole Sample	17.1	17.0
Men	14.0	13.7
Women	17.8	17.5
Set B: Gender Equality Scale		
Category		
Whole Sample	21.3	21.3
Men	20.0	20.0
Women	20.3	20.3
Set C: Gender Equality Scale Category and Demographic variables		
Whole Sample	28.5	28.3
Men	27.0	26.7
Women	28.0	27.7

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TABLE 3:

Contribution to variance in Violence Supportive Attitudes Scale(VSA-18) Scores by variable and sample

Variable	Whole Sample		Men		Women	
	Absolute	Relative	Absolute	Relative	Absolute	Relative
Gender Equality Scale Score category (Reference: High)	15.7	55.2	16.1	59.7	14.5	51.7
Birthplace (Reference: Australia)	5.0	17.7	5.1	18.7	5.0	18.0
Employment and occupation (Reference: Employed - Professional)	2.4	8.4	2.0	7.5	2.8	9.9
Age category (Reference: 25-64 years)	2.2	7.8	1.8	6.8	2.6	9.3
Highest educational attainment (Reference: University or higher)	1.1	3.8	0.6	2.3	1.7	5.9
Gender (Reference: Female)	0.7	2.5	-	-	-	-
Other ¹	1.4	4.6	1.3	5.0	1.4	5.2
Total	28.5	100.0	27.0	100.0	28.0	100.0

¹Includes Disability status, family composition, area disadvantage and remoteness category, each of which contributed <.5 to R².

TABLE 4: Regression output for the Violence Supportive Attitudes (VSA-18) Scale using selected demographic items & Gender Equality (GE) Scale score

Term	Sample					Men					Women					Men v. Women		
	Coefficient	Std error	Statistic	p value	Signif ¹	Coefficient	Std error	Statistic	p value	Signif ¹	Coefficient	Std error	Statistic	p value	Signif ¹	Z	p value	Signif ¹
(Intercept)	-0.89	0.02	-41.04	0	***	-0.79	0.03	-24.37	0	***	-0.92	0.03	-32.72	0	***	-3.05	0	**
Gender Equality category (Ref: Highest 25%)																		
Lowest 25%	0.99	0.02	51.18	0	***	1.01	0.03	36.59	0	***	0.97	0.03	34.34	0	***	-0.83	0.4	
Middle 50%	0.5	0.02	32.92	0	***	0.52	0.02	21.03	0	***	0.49	0.02	24.73	0	***	-0.8	0.43	
Birthplace (Ref: Australia)																		
Main English Speaking Countries	0.01	0.02	0.62	0.5		-0.01	0.03	-0.19	0.85		0.03	0.03	0.99	0.32		0.82	0.41	
Other countries	0.48	0.02	26.91	0	***	0.45	0.03	17.65	0	***	0.51	0.03	20.18	0	***	1.72	0.09	
Employment & occupation (Ref: Employed - Professional)																		
Employed – Manager	0.04	0.03	1.49	0.1		0.02	0.04	0.68	0.5		0.06	0.04	1.39	0.17		0.6	0.55	
Employed - Technician & Trades Worker	0.17	0.03	5.77	0	***	0.17	0.04	4.72	0	***	0.19	0.06	2.89	0	**	0.26	0.79	
Employed - Community & Personal Service	0.05	0.03	1.84	0.1		0.05	0.05	0.97	0.33		0.06	0.03	1.62	0.11		0.18	0.86	
Employed - Clerical & Administrative Worker	0.07	0.03	2.56	0	*	0.08	0.06	1.39	0.17		0.08	0.04	2.14	0.03	*	-0.06	0.95	
Employed - Sales Worker	0.13	0.04	3.7	0	***	0.09	0.05	1.78	0.08		0.16	0.05	3.37	0	***	0.97	0.33	
Employed - Machinery Operator and Driver	0.22	0.05	4.65	0	***	0.25	0.05	4.74	0	***	0.08	0.15	0.53	0.6		-1.09	0.28	
Employed – Labourer	0.25	0.04	6.42	0	***	0.25	0.05	5.04	0	***	0.24	0.06	4.01	0	***	-0.21	0.83	
Employed – Other	0.12	0.11	1.18	0.2		0.26	0.18	1.45	0.15		0.07	0.13	0.52	0.6		-0.88	0.38	
No paid work – Unemployed	0.25	0.04	6.87	0	***	0.24	0.05	4.53	0	***	0.26	0.05	5.24	0	***	0.3	0.76	
No paid work – Other	0.21	0.02	9.52	0	***	0.2	0.04	5.72	0	***	0.22	0.03	7.5	0	***	0.42	0.67	
Age category (Ref: 25-64 years)																		
16-24 years	0.17	0.02	7.51	0	***	0.21	0.03	6.51	0	***	0.14	0.03	4.33	0	***	-1.4	0.16	
65+ years	0.26	0.02	11.48	0	***	0.24	0.03	6.77	0	***	0.29	0.03	9.39	0	***	1.09	0.28	
Highest educational attainment (Ref: University or higher)																		
Trade, certificate or diploma	0	0.02	0.13	0.9		-0.06	0.03	-2.11	0.04	*	0.05	0.03	1.83	0.07		2.79	0.01	**
Secondary or below	0.13	0.02	7.68	0	***	0.06	0.03	2.38	0.02	*	0.18	0.02	7.82	0	***	3.46	0	***
Gender (Ref: Female)																		
Male	*0.05	0.01	3.7	0	***													

¹Statistical significance *= p<.05; **= p<.01; ***= p<.001

FIGURE 1

Density Plot Trace – Violence Supportive Attitudes (VSA-18) Scale

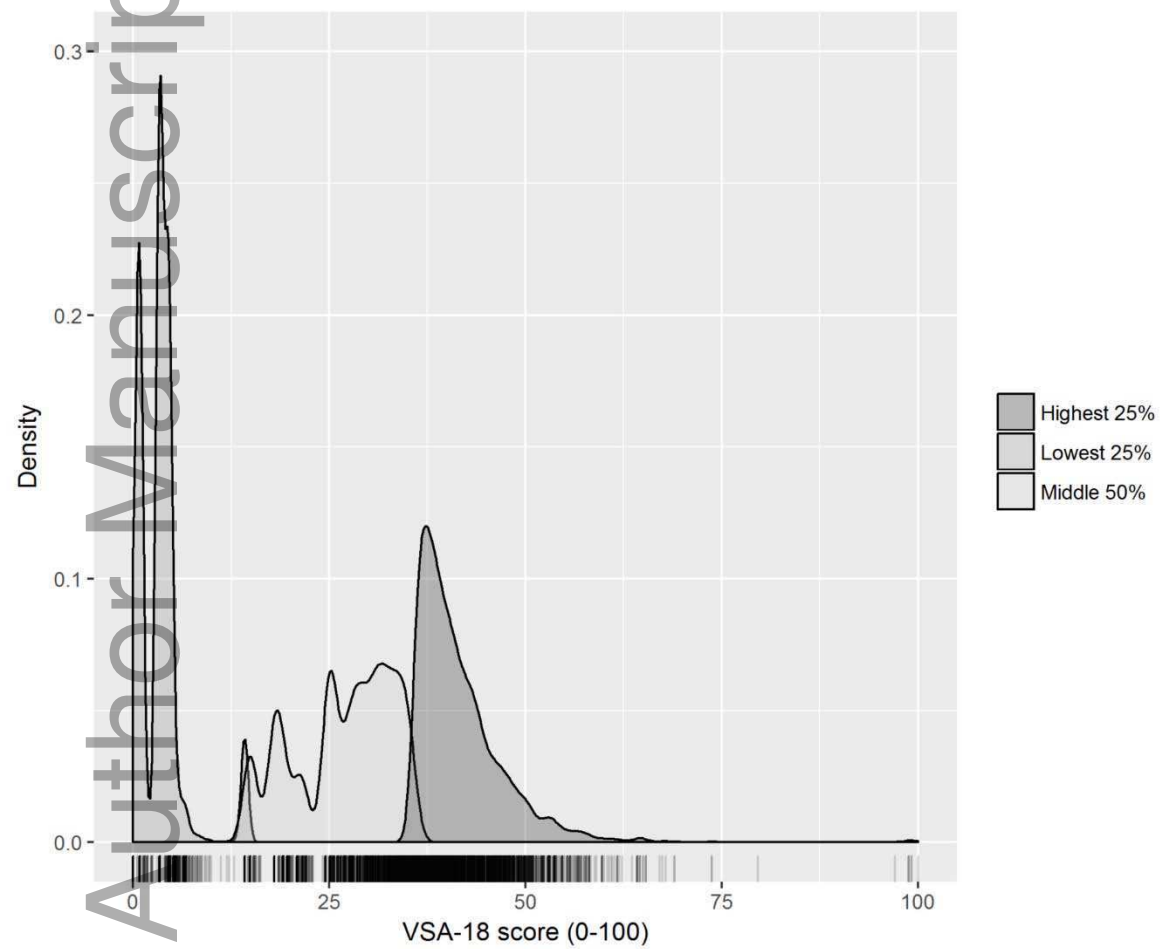


FIGURE 2

Density Plot Trace – Gender Equality (GE) Scale

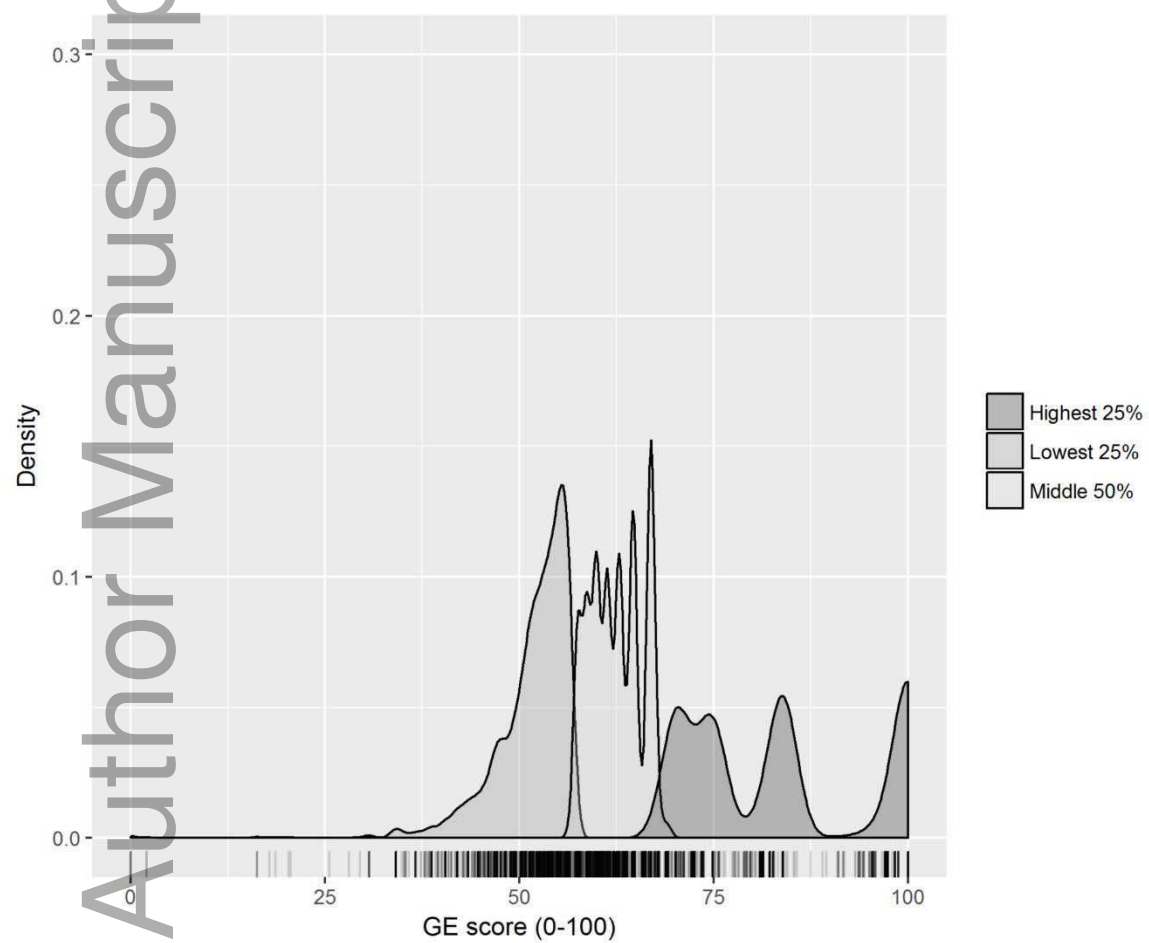


FIGURE 3

Scatterplot of the relationship between Violence Supportive Attitudes (VSA-18) Scale and Gender Equality (GE) Scale scores

