Socio-economic Status Scale Validation Study

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Abstract

The present study is investigating the validity and reliability of a new socioeconomic scale called the Wiseheart Socioeconomic Scale (WSESS). This new scale measures socioeconomic status (SES), as well as sociodemographic factors, including wealth, social supports and life stressors through the addition of eight novel WSESS subscales. Participants were recruited to investigate whether (1) the novel WSESS subscales were internally consistent; and (2) whether the WSESS novel subscales had acceptable levels of construct validity by comparing them to existent questionnaires. The results of the present study provide strong support for the internal consistency for the WSESS subscales. The WSESS subscales demonstrated either weak or weak-to-moderate correlations to either both or one of their associated criterion measures. Further tests are needed to evaluate different types of reliability and validity, and towards the production of a shorter version. This scale has implications for research, policy design, and in the therapeutic setting.

Key words: Socioeconomic Status, life stressors, social support, social resources, wealth, health, scale validation, validity, reliability, measurement, APA

To my family and friends for their unyielding patience and support.

Mad as the Mist and Snow
By William Butler Yeats

Bolt and bar the shutter,
For the foul winds blow:
Our minds are at their best this night,
And I seem to know
That everything outside us is
Mad as the mist and snow.

Horace there by Homer stands,
Plato stands below,
And here is Tully's open page.
How many years ago
Were you and I unlettered lads
Mad as the mist and snow?

You ask what makes me sigh, old friend,
What makes me shudder so?
I shudder and I sigh to think
That even Cicero
And many-minded Homer were
Mad as the mist and snow.

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1. Introduction

1.1. History & Definition of Socioeconomic Status

Socioeconomic Status (SES) has a long history of use in education, with its origins stemming from educators observing their students' learning and being concerned about the academic success of their lower SES students (US Department of Education, 2012). Educators would report how students from households where parents had lower income, lower educational attainment, and/or less prestigious occupations had a harder time in school than their higher SES cohorts. In response to this, one of the earliest formations of SES was Taussig's (1920) classification. As an SES measure, it was based on the father's occupation and was divided into six categories, professional, semiprofessional, clerical and skilled trades, semiskilled and minor clerical, slightly skilled, unskilled labour.

In the current research climate, SES has been understood as the social standing of an individual or group (APA Task Force on Socioeconomic Status, 2007) and measurements of SES are typically comprised of either one or a combination of the following three factors: (1) household income (2) number of years of parent(s) education and (3) parent(s) occupational prestige (APA Task Force on Socioeconomic Status, 2007). Each of these factors help researchers to understand a person's life across the socio-economic stratum.

More than any other construct, SES is a proxy variable that "reflects literally hundreds of personality traits and other realities that determine one's level of education, income and occupation" (Jeynes, 2002, p. 209). Unsurprisingly, researchers have been able to produce over nine decades worth of research that have linked SES to various psychological domains, such as mental health, physical health, brain physiology, toxin exposure, family interactions, academic performance, career development, and occupational attainment (Diemer et al., 2013; US Department of Education, 2012). Its prominence in the literature hints at its relevance and importance for continued use in research and policy design.

However, in 2007 the American Psychological Association published a document that criticized the limitations of how researchers have understood and measured SES (APA Task Force on Socioeconomic Status, 2007). One of their major critiques was the lack of recognition of the social and environmental forces in SES measurements (APA Task Force on Socioeconomic Status, 2007; Mueller & Parcel, 1981). Researchers and policy designers could not properly account for how sociodemographic factors were impacting the lives of those across the socioeconomic

spectrum. There is already burgeoning evidence of the relationship between social and environmental forces and SES, however measures of SES have yet to integrate them (Mickelson & Kubzansky, 2003; Surachman et al., 2019).

In an effort to better understand how measurements of SES can be improved, I will first be discussing each of the current three factors of SES and how they are used; then, the limitations in the information that can be gathered; and finally, how an integration of sociodemographic factors (i.e., wealth, life stressor and social support) can improve SES measurements in research and application.

1.1.1. Education

Education is defined as the highest level of education the parent(s) or individual has received. Measures that use education to examine SES format their questions either by asking participants about how many years of education they have or their highest level of education (e.g., high-school, undergraduate degree or graduate degree), however, it is acknowledged that typically, the latter is the better measure (Merola, 2015). The reason for this is because the number of years does not necessarily indicate the level of complex skill set being developed.

Education as a factor of SES allows researchers to make interesting connections to a family's level of income and occupational prestige. Research has shown that higher levels of education is moderately associated with better economic and psychological outcomes (i.e., more income, more control, and greater social support) (Butterworth et al., 2015; Blanden & Gregg, 2004). In this way, the level of education of an individual allows researchers to evaluate a person's access to a certain level of income as well as occupational prestige because of the skills and knowledge developed and the networks one is able to build when one has a higher level of education (APA Task Force on SES, 2007; Marks, 2011). This makes sense because more prestigious careers often have a higher income because of the higher level of autonomy and responsibility required (Diemer, 2013). This in turn requires a more advanced knowledge set and skills to do this properly.

Education an important component when evaluating the lives across the socioeconomic spectrum because it can explain for part of a child's academic achievement overall as well as the educational disparity that can latter impact these individuals in their adult lives (Lareau, 2003). Research has shown that children from lower SES households develop weaker language skills compared to those in a higher SES household due to the differences in child rearing techniques

(Lareau, 2003). Parents of higher SES homes take a more active role in their child's education and development. This affects a student's abilities to learn and can exacerbate the existing education disparity between lower SES households and higher SES households (Lareau, 2003). This disparity can impact a student's ability to develop the necessary skills and knowledge to be successful as an adult.

1.1.2. Income

Household income is understood as the total gross household income. This may include any flow of earnings received, including but not limited to salaries, profits, unemployment or worker's compensations, social security, and pensions (Hauser, 1994). Thus, participants are generally asked for an estimate of their yearly total gross income. However, there may be issues with recall accuracy, especially if this question is given to a younger individual, so it is recommended to have participant also select along a confidence rating for their estimate (Kuhnen & Miu, 2017).

As a measurement, income gets at important aspects of quality of life. For instance, low income families focus on meeting immediate needs and have a harder time saving for future situations or future generations. Resources are only enough to meet their most immediate needs first and future needs are rarely considered (Boushey & Weller, 2005). In this way their lack of wealth generation facilities an ever-increasing inequality between individuals of lower SES and individuals of higher SES. Families with higher and more expendable income can accumulate wealth and focus on meeting immediate needs, overcome times of financial crisis, and have enough resources to invest in their future (Boushey & Weller, 2005). In this way, families with higher income are able to take financial risks (Manstead, 2018). This also means they are able to 'bounce-back' better if these turn into financial failures.

1.1.3. Occupational Prestige

Occupational prestige is an important factor for SES research because it indicates the level of power and control an individual has in their place of work (APA Task Force on SES, 2007; Shavers, 2007). When used in measurement, participants are generally asked to choose from a list of jobs that are ranked based upon perceived prestige.

As a measurement, occupational prestige can paint an important picture of the types of resources that can be made available. Those with higher levels of prestige, such as an CEO, have more power over members of the company and more control over the decision-making process.

They also have more large-scale responsibilities. As previously mentioned, education is heavily connected to occupational prestige. A CEO would be expected to have a higher level of education and experience, as well as a more developed skill set in order to make larger scale decisions. As such, they are also likely to be paid better, and have more opportunities to develop better networks to further develop their occupational prestige and income (Diemer, 2013). In this way, when utilized as a factor of SES, occupational prestige can illuminate researchers and policy designers on how resources may differ for individuals and/or families if members of the family have certain jobs.

1.2. Criticism of Current SES Measures

If programs and institutions are to make choices to help socially and economically disadvantaged individuals to progress within society, measurements need to properly depict and evaluate their lived experience (Merola, 2005). Unfortunately, the process of measuring as well as using socioeconomic status is not clear-cut. Researchers have different opinions about which combination of factors should be included, how they should be evaluated, or what other factors should be included when evaluating SES. This means that measurements will sometimes use a single factor or a variation of income, education, and occupational prestige; each of these come with their own associated challenges (APA Task Force on SES, 2007; Buchmann, 2002).

Some measurements of SES will utilize only occupational prestige to evaluate SES. The reasoning for this is because the level of prestige a job holds will provide a picture of the resources and networks available for an individual to maintain a certain lifestyle (Diemer, 2013). However, measurements that only use occupational prestige to evaluate SES are problematic for both conceptual and practical reasons. One objective measure called the Siegel Prestige Scale (1971) was generated based upon a subset of occupations that were common across the three separate national surveys conducted in 1963, 1964 and 1965. Objectives measures like the Siegel Prestige Scale (1971) do not adequately capture the complexity of one's job description (APA Task Force on SES, 2007). Many jobs with similar job titles can have different responsibilities. Similarly, the same job with the same responsibilities may have very different titles across different companies.

Even more updated measures of occupational prestige, such as Nakao and Treas' Occupational Prestige Scale (1992), have difficultly capturing occupational prestige for a similar reason. The Nakao and Treas' prestige scale (1992) was a synthesis of the 1980 census classification system, as well as earlier studies to create a social ladder of occupations (Nakao &

Treas, 1994). Thus, a consistent understanding of the construct of occupational prestige can be difficult to control as they will not account for these nuanced differences.

There are also problems when it comes to who answers these types of questions. Researchers have stated that when asking younger participants to answer questionnaires about occupational prestige, the researchers are not certain the younger participants have answered accurately (Entwisle & Astone, 1994). Younger participants may not know the extent of parents' jobs or their responsibilities and this lack of accuracy can be concerning when trying to evaluate SES for research and policy design (Hauser, 1994). In this respect, SES questionnaires that are designed based upon single factors, like occupational prestige, can be problematic because they miss nuanced differences between individuals and lack accuracy.

Just as the use of single factor measures of SES can be problematic, when measurements use different variations of SES factors, issues may still occur that need to be considered. For instance, the Revised Duncan Socioeconomic Index (1981) is an occupational classification based on the factors of education and income and has had mixed reviews when utilized in research. Like with the Nakao and Treas' Occupational Prestige Scale (1992), there are practical concerns with response accuracy when these questions are given to younger populations.

There are conceptual concerns as well. The use of education as a factor requires careful evaluation because of its complicated relationships with other relevant constructs (Merola, 2015). In particular, a moderate relationship has been found between educational attainment and wealth (even after income and other variables have been taken into account) (Conley, 1999, 2001). Education allows one access to both networks, knowledge and financial resources to further one's wealth (Manstead, 2018). For this reason, it has been suggested that an expanded model is needed, especially as it pertains to evaluating educational trends such as higher education (Titus, 2006).

In addition, income as a factor of SES has its own set of concerns that need to be considered, in particular its volatile and inconsistent nature (APA Task Force on SES, 2007; Hauser, 1994). The income of individuals may not be consistent over time, and measures that use income as a factor of SES do not capture this variation that may change the balance between assets and debt (Kuhnen & Miu, 2017). In addition, existent questionnaires do not currently capture the predisposition to develop one's financial assets and reduce debt through investments, which are important motivators towards wealth generation (Kuhnen & Miu, 2017). Other variables including property ownership, home possessions, number of moves in the past year, and presence of

household member needing serious medical assistance would be useful indirect measures of family income to account for the balance between debt and assets over time (Hauser & Andrew, 2007). For similar reasons, it would be useful for questionnaires to account for which parent has the most influence on the economic wellbeing of other members of that house (Entwisle & Astone, 1994). Whichever parent has the most influence of the economic well-being of family members, can determine the course of the wealth generation or de-generation.

As income is considered a private matter, there may be issues with collecting accurate data and missing data points. When participants are asked questions about income, they may either refuse to answer the question or have very poor recall (Entwisle & Astone, 1994; Hauser & Warren, 1997). Therefore, with respect to measures of SES that utilize combination of factors, such as education and/or income, there are concerns that need to be addressed by the research community.

Even existent composite measures require considerable re-evaluation for the sake of their external validity. For instance, a commonly used SES scale, the Hollingshead SES scale (1975), is a measurement of SES that is comprised of marital status, retired/employed status, educational attainment, and occupational prestige. In addition to similar criticisms mentioned above regarding income, education, and occupational prestige, there have been other serious criticisms laid against this specific measure. As an older measure, it has been critiqued as being imprecise and having a propensity to confound its concepts with race (Ensminger & Fothergill, 2003). As such, the Hollingshead SES scale's external validity has been called into question.

Which measure one should use of socioeconomic status depends greatly on the type of study being conducted (Flowerdew, Manley, & Sabel, 2008). Different SES factors get at diverse outcomes and this suggests how different underlying mechanisms might generate associations. This means the results as well as the interpretations of SES research may rely on the choice of the indicator (Darin- Mattson, 2017). For instance, research has shown that income is most strongly associated with health later in life (Kuhnen & Miu, 2017). If the point of the study is to look at the connection between health and SES later in life, then it would make the most sense to use income as a factor of SES in this research (Darin- Mattsson, 2017). By contrast, if the scope of the study is overall health variations in society, then a more composite measure of SES would capture more information and variance. Indeed, people of lower SES have been found overall to have inferior

health than those of higher SES and do tend to die earlier (Darin-Mattson, 2017). Associations can be more thoroughly explored if SES includes more factors to understand this relationship.

1.3. Integration of Sociodemographic Factors into SES

One way to make SES measures more comprehensive is for researchers to begin reconstructing SES measurements to include sociodemographic factors (APA Task Force on SES, 2007). Conceptualizations of SES could be improved by including sociodemographic factors, such as wealth, human capital, value systems, and health (Cirino et al., 2002). In fact, sociodemographic variables, including a supportive network, presence of life stressors, and access to financial resources, have been shown to be closely tied to an individual's SES (Mickelson & Kubzansky, 2003; Surachman et al., 2019). For this reason, they are the novel factors that have been included in the Cognitive Flexibility Lab's new SES measurement, the Wiseheart Socioeconomic Status Scale (WSESS).

1.3.1. Wealth

The integration of financial resources within SES measurements provides researchers with invaluable information about a family's or an individual's resources by providing a balanced view of their financial assets and debt (Kuhnen & Miu, 2017). Wealth is typically understood as tangible or intangible items obtained for producing additional income. Depending on how income is utilized, it can provide additional opportunities for saving and exploring investment options, which in turn generate more wealth (Rubinson, 2002). This wealth generation can be done through such actions as investing in the financial markets (e.g., stocks and bonds), building one's credit (e.g., loans or bonds), acquiring assets (e.g., commodities or artwork), or purchasing real estate (Rubinson, 2002).

Including items addressing financial resources and wealth in SES measurements could provide invaluable information in combination to the already collected information on income. In their article, Drentea and Lavrakas (2000) stated that debt is a more sensitive indicator of financial well-being than income because it represents financial choices and accumulated hardships. It is the accumulation of debt from making certain financial choices (mortgage from a home or taking out a loan for a business), but also hardships such as poor financial decisions (pay day loans, or considerable loss in stocks), job loss, divorce, medical emergencies (treatment or surgeries not covered by insurance) or economic emergencies (economic recession) (Buttrick, Heintzelman, & Oishi, 2017).

The inclusion of wealth within measures could also provide important information on how one's social standing influences financial opportunities and hardships. The level of debt can be exacerbated by SES, as individuals of lower SES often already have limited means to generate more wealth to combat against their level of debt. Those of lower SES also tend to have a pessimism bias to investments due to the foreseeable risk to their already limited resources (Kuhnen & Miu, 2017). This concern can be intensified if they have considerable debt from taking up loans but fail to make any substantial investments due to poor investment ideas and lack of opportunities, which leads to further development of debt and lack of resources to invest (Buttrick, Heintzelman, & Oishi, 2017). By contrast, even when debt is accumulated, individuals of higher SES are within circles where wealth generation can be obtained relatively easy (Kraus, Park & Tan, 2017). Not only do they have financial resources to make investments, but also individuals of higher SES have more opportunities to make investments because they have better financial networks (Manstead, 2018).

There are a number of factors that can differentiate the generation and maintenance of wealth along the socioeconomic spectrum. Some of these factors are outlined in Table 1 below.

Table 1

Factors Associated with Wealth

Factor	Explanation	Citation
Children	The number of children and/or the age of the child can impact wealth generation through the cost of caring for the child (e.g., education, clothes, food, recreational activities, medical emergencies) and limit opportunities for saving.	(Rubinson, 2002)
	The presence of children also changes the types of investments that can be made. Parent(s) may need to draw upon their assets, so instead of saving in long-term, high-interest accounts, they may place income in	(Rubinson, 2002)

	more flexible (and therefore low-return) cash accounts. This in turn generate less wealth.	
Relationship Status	Marriage may provide a slight income advantage compared to a single person income. In addition to the tax breaks that come with marriage, the agreement between partners' investment preferences, lifestyle preferences, and economic and behavioral patterns can impact the number of opportunities for saving and investing.	(Oliver & Shapiro, 1995; Rubinson, 2002)
Education	High school education and above (18 years of education) are more likely to be stock market investors than individuals with basic schooling.	(Christiansen, Rangvid, & Joensen, 2010; Oliver & Shapiro, 1995)
	Those with higher education have greater knowledge and skill when it comes to generating and managing their wealth.	(Buttrick, Heintzelman, & Oishi, 2017)
Age	Wealth generation can vary by age based on (1) having had more time to save, (2) having more opportunities to learn and invest, (3) having more opportunities to build networks that foster investment interest.	(Christiansen, Rangvid, & Joensen, 2010)
Gender	Wealth generation can vary by gender. Less risk investment options for females may be in part due to (1)	(Christiansen, Rangvid, & Joensen, 2010;

	lower earnings for females, leading to a more conservative approach (2) the protective instinct often credited to mothers making them more reluctant to take risks.	Lyons & Yilmazer, 2006)
	In poorer economic markets, females' conservative tendencies towards investments fare better because they often traded less and earn more in the long term.	(Christiansen, Rangvid, & Joensen, 2010)
Risk Aversion	Wealth generation can vary based on a person's propensity to riskier investments. Wealthier individuals are more likely to invest in stocks (deemed riskier and have the potential to yield higher ends) as opposed to individuals of lower SES because negative attitudes to risk. Risk aversion can vary as a consequence of available resources.	(Kraus, Park, & Tan, 2017; Kuhnen & Miu, 2017)

From the point of view of a policy designer and researcher, the implications of understanding wealth as a factor of SES are considerable. Several empirical studies have found that financial stress, such as personal debt are strong predictors of depression, general psychological distress, mental disorders, and suicidal ideation and behavior (Bridges & Disney, 2010; Brown, Taylor, & Price, 2005; Drentea & Reynolds, 2012). Thus, wealth generation and de-generation are important factors to consider when understanding a person's life cycle and can be used to improve current SES measurements beyond income alone.

1.3.2. Social Supports

Measures of SES have been utilized in research as a way of understanding the lives of people across a social hierarchy, however despite the invaluable applications of traditional

measures of SES, there is still much more to a person's life that is left unaccounted (Manstead, 2018). The human connections and the unpredictability of life events also shed light on the variations in a peoples' lives, and measurements must strive to account for this variation.

An example of this can be seen in how peoples' lives vary due to the differences in availability to social support and how social support functions across the socioeconomic spectrum (Ng et al., 2014). Individuals who are reported to be from higher SES backgrounds are reported to have a larger social support network (Ng et al., 2014). This is an important piece of information that is left out in traditional SES measures. Their larger social support networks, developed through their involvement with organization and/or clubs, allows them to exchange information and to develop supportive bonds (Ng et al., 2014). This is important factor to consider because individuals of higher SES have the supports available to reduce the impact of stressors as well as increase their overall life satisfaction (Mickelson & Kubzansky, 2003; Surachman et al., 2019).

By contrast, individuals of lower SES have reduced availability to social support and limited social networks, which can impact their life in a negative way (Evans & Kantrowitz, 2002). Due to their limited means, they often have less time and resources to foster and maintain relationships, especially during economically stressful times. The limited social support and resources can increase vulnerability to life events and contribute to the development of health problems (Evans & Kantrowitz, 2002). Therefore, this is a concern that needs to be addressed in SES measurements because of how variations of social support can impact a person's life.

In a literary review on the availability of social support along the socioeconomic spectrum, there are a number of different factors that seemed to differentiate the variations of social support and resources.

Table 2

Factors Associated with Social Supports & SES

Factor	Example	Citation
Home Environment	Social resources can include the proximity one is to physical resources and their impact can vary across SES. Having parks in lower socioeconomic neighborhoods is more cost effective because of its	(Lal et al., 2019)

	potential to increase metabolic equivalent hours (physical activity).	
	The varying resources available by neighbourhood and SES can have long term impacts. Living in advantaged neighborhoods where a large portion are affluent has been associated with children achieving over other markers of family advantage.	(Dupere et al., 2010)
School/Work Environment	Social resources can also include the availability of supportive materials including furniture. The access to such resources various across SES and has considerable implications. For instance, children (fourth graders) sat better and were on task more when seated in furniture that fit.	(Wingrat & Exner, 2005)
Relationship: Family	The impact of good relationships can have benefits that vary along SES. Maintaining a strong parent–child bond helps promote healthy child development, particularly for children of lower SES households.	(Milteer, Ginsburg, & Mulligan, 2012)
Relationship: Close Friends	Greater involvement with family, friends and significant others increases one's sense of purpose in life and overall life satisfaction.	(Chui, 2018)
Relationship: Acquaintances	The availability of one's resources can change relationship outcomes, and this can vary by SES. Children of	(Chiu & Chow, 2015)

	higher SES households have more resources by which to share with others. In this way, they also are able to build and capitalize on stronger network to learn more than children of lower SES households.	
Health	Supportive health choices and thoughts can vary by SES. People of lower SES who are physically active are more likely to report better self-rated health and higher quality-of-life than people of higher SES and lower physical activity.	(Johansson et al., 2019)
Spirituality	The way by which spirituality serves as a support can vary as a function of SES. In lower SES neighborhoods it serves as survival strategy for overcoming adversity and developing positive social support bonds. Individuals of higher SES rely less on divine involvement and seek own control during tough situations.	(Boyd-Franklin, 2010; Schieman, 2010)
	The use of mindfulness in low-income groups is often impacted by stressors associated with low SES (e.g., unsafe neighborhoods, stress related to financial difficulties or unstable housing).	(Spears et al., 2017)

This relationship between social resources and SES is evident across multiple aspects of one's life, including but not limited to one's environment (home, work and/or school). In terms of

environment, there are many types of physical and psychological supports that can differ across SES that would be useful to include in measurements. For instance, having spaces to engage in recreational activities, like a park, has been shown to be a great source of social support for both physical and psychological reasons. Such areas allow individuals to engage in physical activity, which is good for their health (Lal et al., 2019). It is also a psychological support as it allows for opportunities to socialize. Despite the benefits that such areas provide, studies have shown that access to safe recreational spaces is not the same across the SES spectrum, with better recreational spaces being more readily available in higher SES areas as opposed to lower SES areas (Lal et al., 2019). Factors like this need to be considered, especially as it pertains to housing development and health programs within an area, and for that reason it would be useful to account for this in SES measurement.

The quality of relationships also differs as a function of SES and could be invaluable information to gather in SES measurements considering the profound impact relationships have throughout a person's development. It is both the propensity and strength of relationships that appear to differ across socioeconomic. For instance, individuals with higher education, who have developed greater knowledge and skills, are better at generating social relationships as well as creating stronger bonds with others (Chiu & Chow, 2015; Hosokawa & Katsura, 2017). This difference also seems to depend on one's age and/or relationships status. Melchiorre and colleagues (2013) found that younger people and those in romantic relationships perceive themselves as having more social resources compared to older and retired people. Individuals who are older and retired often have reduced income and often times of lower SES (Chu et al., 2015). They have fewer resources to provide to others in terms of social supports, and their lack of reciprocation impacts their own access to social supports amongst friends and family.

Health-oriented choices also vary as a function of SES and if measurements could account for such a factor it could provide essential information for health-driven programs. For instance, research has already documented that in terms of one's ability to choose a healthier diet, higher SES individuals tend to make the choice to consume lean meats, fishes and seafood in larger quantities, whereas lower SES tend to consumer more fatter meats and fried foods, associated with poorer cardiovascular outcomes (Worsley et al., 2003; Hulshof et al., 1991). These choices may be due to the availability to these resources; however, their availability has also been linked to

economic means too. These eating habits are also rooted in social circles, where individuals foster habits and contribute to decision-making (Darmon & Drewnoski, 2008).

The measurement of spiritualty in SES measures could also provide a useful way of understanding how people find support within themselves. For those who define spirituality as a belief in a high-being, spirituality provides support through a belief system, however the way this expresses itself in one's life does differ by SES (Helminiak, 2008). For instance, for individuals of lower SES who believe in divine involvement, spirituality provides a sense of relief and guidance on how to behave or think about situations (Schieman, 2010). Furthermore, the communal element of this type of spirituality also allows for social networks to be fostered, something that could be helpful during spiritual struggles or other life stressors (Schieman, 2010). By contrast, individuals of higher SES rely less on divine involvement and seek a sense of control through their own means.

Others forms of spirituality that bring about a sense of peace, such as yoga and meditation, also vary across the socioeconomic spectrum. For instance, research shows that the typical individual to practice yoga is a female, upper socioeconomic status, educated, middle-aged and white (Park, Braun, & Siegal, 2015). Participation in mindfulness shows a similar trend with SES. While this spiritual practice shows promise for improving mood and motivating health behaviours for individuals of higher SES, there are barriers to those individuals of lower SES that make participating in this type of spirituality difficult. Two prominent barriers are: (1) their perceived busy schedule and present stressors made them feel as though they did not have the time; and (2) their need to be constantly aware of your surroundings in unsafe neighborhoods makes certain parts of this practice unrealistic for them (e.g., walking mediation) (Spears et al., 2017).

1.3.3. Life Stressors

In the face of life stressors, social resources can indeed be a source of resilience, however, in order to get a better picture of one's life across SES, measures need to account for the negative impact of life stressors on social resources. The inclusion of life stressors in SES measurements allows researchers to get a better grasp of the development of disease and psychological wellbeing across one's lifetime (Chu et al., 2015; Surachman et al., 2019).

Table 3

Factors Associated with Life Stressors & SES

Factor	Example	Citation
Home Environment	Research has shown that individuals in lower SES households more likely to live in homes where there is domestic crowding, a condition that has negative consequences, including higher psychological stress and poor health outcomes.	(Melki et al., 2004)
School/Work Environment	Unsupportive work environments where there is fear of job loss and unemployment have a significant impact on physical and mental health.	(Sverke, Hellgren, & Naswall, 2002)
	Higher rates of job dissatisfaction and job-related stress have been found in those who work more overtime, have little support and no job flexibility.	(Richman et al., 2008)
Relationship: Family	Family relationship dynamics can vary by economic stressors. Increased economic problems predict negative parenting (e.g, lack of warmth) and an increased risk of children being exposed to family conflict.	(Hosokawa & Katsura, 2017; Ondersma, 2002)
	Children living in poverty are more likely to develop health problems, display disruptive behaviour and to drop out of school.	(Lefebvre et al., 2017)

Relationship: Close Friends	In line with social homophily, social ties are created and maintained between individuals who share similar attributes, such as gender, SES and/or race. This can contribute to network-induced inequalities.	(Rivera, Soderstrom, & Uzzi, 2010; DiMaagio & Garip, 2011)
	If stressors are impacting the entire network of an individual of lower SES, individuals of lower SES will be less likely to offer assistance to those in their social network if they feel they will not be able to reciprocate.	(Krause & Shaw, 2000)
Relationship: Acquaintances	Teachers often have lower expectations of students of lower SES households and this has been shown to have an impact of areas such as math, reading and sports education.	(Speybroeck et al., 2012; Xuan et al., 2019)
Health	According to the accumulation model, that exposure to poorer SES circumstances at an earlier stage of life and at the adult stage may be more problematic for their health in later years.	(Cohen et al., 2010)
	Healthy lifestyle choices can be impacted by SES in so that, lifestyle is determined by what is available to you. Healthier food options (e.g. nutrient rich food) are more difficult to attain for individuals of lower SES	(Cockerham, 2005; Darmon & Drrewnowski, 2008)

	due to (1) cost (2) availability of products in the supermarket, and (3) availability of health supermarkets in their neighbourhood.	
Spirituality	Greater financial difficulties are associated with less involvement in religion and a sense of meaning in life.	(Krause & Bastida, 2011)
	Individual who live in lower SES neighborhoods find it harder to practice certain spiritual practices, such as meditation, because of unsafe neighborhoods, stress related to financial difficulties or unstable housing.	(Spears et al., 2017)

The type of environmental life stressors differs considerably across the socioeconomic spectrum and needs to be taken account for in research and policy so that group can be properly supported. For instance, there are differences between individuals of lower SES and higher SES in terms of their access to a safe neighbourhood, safe water quality, and the presence environmental toxins, and these have been linked to an individual's life trajectory and overall health (Aikens & Barbarin, 2008; Evans & Kantrowitz, 2002). Furthermore, those with economic difficulties are more likely to live in run-down neighborhoods, and therefore are more exposed to environmental stressors. They are also exposed to higher crime rates, greater social isolation and air and noise pollution (Krause, 1993).

Beyond the home environment, the work environment also sees considerable differences across SES, with those individuals of lower SES being considerably more strained by stressors. While individuals of higher SES do experience higher psychosocial demands that may lead to stress, they still have possibilities for development and degrees of freedom (Kristensen, Borg, & Hannerz, 2002). By contrast, individuals of lower SES face greater job insecurity, less flexibility,

and unemployment, which has a significant impact on their physical and mental health (Sverke, Hellgren, & Naswall, 2002).

Having measures that evaluate how life stressors can impact supportive relationships should also be included in SES measurements as the data could prove useful for policy and program designs, especially during times of crisis. According to the support mobilization model, in the face of stressful life events, members within one's network share their resources to cope (Mickelson & Kubzansky, 2003). However, this can be disrupted when stressors impact already limited resources. As social networks tend to be within the same SES, if stressors are impacting the entire network, it is likely that support cannot be readily provided (Krause & Shaw, 2000). For a group that already has fewer instrumental and emotional support, this can leave lower SES individuals isolated and without resources to overcome challenges and be resilient to stressful life events (Chung & Steinberg, 2006). Secondly, Belle (1990) has stated that helping others when one's own resources are under stress may be a source of additional stress. So, if unable to reciprocate, individuals of lower SES will be less likely to offer assistance to those in their social network and further isolate themselves from support that they may need.

When considering the link between SES and health, it would also be a good idea to have health related items within SES measurements as they would prove useful in the development of effective prevention and treatment strategies. According to the accumulation model, that exposure to poor SES at earlier stages in development and at adult stage both predict a higher risk for healthcare outcomes (Cohen et al., 2010; John-Henderson et al., 2015). Stressful life events can impact one's healthier choices, such as exercise and nutrition. In particular, research has shown that uncontrollable and continual stress can change eating patterns for the worst. It changes the consumption to be more in line with hyper-palatable foods (e.g., high in fat and high in sugar) and promotes metabolic changes that lead to gains in weight and body fat mass (Yau & Potenza, 2013). This is in line with research that shows that individuals of lower SES do consume food higher in fat and sugars (Perrin et al., 2002). Exercise as well may be differentially impacted by life stressors. The majority of the literature finds that the experience of stress impairs efforts to be physically active, however this is usually for those who are less experienced in exercise (Stults-Kolehmainen & Sinha, 2014).

The way in which individuals manage their spirituality during challenging life events also differs across SES and could also provide a useful way of understanding how people find support

within themselves. As previously stated, spirituality can provide a source of support and resilience, however research has also found that those individuals of lower SES, when exposed to stressors, experience greater spiritual struggles. These can range from a troubled relationship with a higher power (e.g. they are being punished), difficulty finding a sense of purpose in life or attributing unwanted events to demonic forces (Krause, Pargament, & Ironson, 2017). While the lower SES may experience troubles regarding their spirituality, those individuals of higher SES are more likely to embrace their doubt and use it as an opportunity for spiritual growth. This framework could be invaluable in health and therapeutic situations, where specific SES groups may need altered treatment methods.

1.4. Research Objectives and Hypotheses

A new measurement, called the Wiseheart Socioeconomic Status Scale (WSESS), has been created to address some of the concerns raised by the APA. The WSESS includes items relating to the traditional three factor model of SES (parental income, parental occupation, & parental education), but also sociodemographic factors, including financial resources, life stressors, and social resources. With the inclusion of these novel subscales, the WSESS will be among the first SES measures that recognizes the weight of financial resources, life events and social support.

Well-designed and rigorous scales are critical in understanding any psychological phenomenon, and for that reason proper scale development and validation are important. As indicated in Table 4 below, the validation of a new measure is a multi-step process involving item development, scale development, and scale evaluation (Boateng et al., 2018). Boateng et al. (2018) explain that for studies developing a new scale, it is useful to use all nine steps, however when a study is trying to validate an existing scale, it should focus on scale evaluation.

Table 4

Summary of Scale Development Guidelines Outlined by Boateng et al., 2018

Item Development	
Step 1: Domain Identification & Item Generation	The researcher may use either deductive methods (i.e., literature review) or inductive methods (i.e., focus groups) to develop a conceptual definition, a hypothetical model of how the construct is to be understood. They will also see if

	there are existing instruments that share this definition. This will allow the researcher to set boundaries for the domain of interest and assist with item generation.
Step 2: Content Validity	Either through an evaluation by experts using statistical procedures or through cognitive interviews with members of the target population, the researcher needs to evaluate whether each of the items is representative of the construct they are trying to measure.
Scale Development	
Step 3: Pre-testing Questions	The researcher should administer the items to a focus group and ask participant to describe their thought process while they answer the items. This will allow the researcher to see if the questions are clearly worded and whether they are within the domain of interest.
Step 4: Survey Administration	The researcher will collect data by administering their measure to a large sample size of their target population. Ideally, the researcher will want to administer the scale more than once and at two separate time points. This is important later on when they evaluate the scale's dimensionality (see Step 7).
Step 5: Item Reduction	In order to evaluate whether a scale is parsimonious, the researcher will evaluate the relationship between inter-items and

	the relationship between item and total correlations to ensure the scale is measuring the domain of interest. Items that do not meet the criteria are deleted.
Step 6: Extraction of Factors	In order to understand the number of factors that the items group together, the researcher will run an exploratory factor analysis (EFA). This will allow the researcher to understand how items are being collectively understood by how they are grouped together.
Scale Evaluation	
Step 7: Tests of Dimensionality	Using a different sample than what was used for the EFA, the researcher will run a confirmatory factor analysis to evaluate whether the previously constructed hypothetical model is consistent with the items in the scale.
Step 8: Tests of Reliability	Using the appropriate reliability test (such as Cronbach's alpha, MacDonald's coefficient omega, or the greatest lower bound reliability), the researcher will calculate the internal consistency of the scale. The researcher will also evaluate the test-retest reliability by seeing how consistent the scale is across multiple time points.
Step 9: Tests of Validity	There are different types of construct validity. The researcher will evaluate the convergent construct validity of the measurement by running correlation

	and/or regression analyses with existent measures within the field or other "known groups". They will evaluate the divergent construct validity by running correlation and/or regressions analyses with measures that are known to be different from the domain of interest. This will allow the researcher to determine the extent in which the scale evaluates the domain of interest.

The WSESS has been previously evaluated in other studies, where it has covered many of the initial steps of scale validation (see Amin & Wiseheart, in preparation; see Wiseheart & D'Souza, in preparation). Therefore, for my master's thesis I will run a validation study to see how well the WSESS captures the APA's recommendations for an improved SES measure by examining the reliability of the novel subscales and the WSESS's construct validity for each of these subscales. I will compare the WSESS's subscales of financial resources, life stressors, and social resources to existing measures that evaluate the same construct. My first major level hypothesis will be that each of the reliability tests used to evaluate the internal consistency of the subscales will yield atleast a 0.70 coefficient omega, which is considered to be an acceptable value for evaluating reliability between items (Taber, 2018). The coefficient omega is considered a practical alternative to the popular alpha coefficient because it does not underestimate the reliability between items (Flora, 2019). It also does not require a large average loading or similar loadings. My second major hypothesis is that the subscales of financial resources, life stressors, and social resources measures in the WSESS will weakly-to-moderately correlate ($r = 0.30 - 0.69$) with the criterion measures listed in Table 5 (Schober, Boer, & Schwarte, 2018). The criterion measures that will be used to analyze the financial resource items within the WSESS are the Family Affluence Scale, and the Family Resource Scale. The criterion measures that will be used to analyze the social support items will be the Social Support Inventory, and the Social Support Questionnaire. Lastly, the criterion measures that will be used to analyze the life stressor items within the WSESS will be the Life Stress Scale, as well as the Social Readjustment Rating Scale.

The sub-hypotheses for my second major hypothesis are listed in Table 5. Each of the values selected were found in the existent literature on the criterion measure and were the average correlation of the two selected criterion measures when their construct validity was conducted. Therefore, if the WSESS items relating to financial resources, life stressors, and social resources are properly depicting their domains of interest, they should share similar correlations to criterion measures that also evaluate the same domain of interest. When correlation analysis is conducted, the WSESS items should produce a similar correlation to the criterion measures when these criterion measures had their construct validity evaluated.

Table 5

List of Sub-hypotheses for the WSESS Subscales and Other Criterion Measures

	Financial Resources Items	Life Stressors Items	Social Resources Items
Family Affluence Scale (FAS-III)	r = 0.3 (Hartley, Levin, & Currie, 2016)		
Family Resource Scale (FRS)	r = 0.3 (Hartley, Levin, & Currie, 2016)		
Life Stress Scale (LSS)		r = 0.34 (Holmes & Rahe, 1967; McGrath & Buckhart, 1983)	
Social Readjustment Rating Scale (SRRS)		r = 0.34 (Holmes & Rahe, 1967; McGrath & Buckhart, 1983)	
Social Support Inventory (SSI)			r = 0.36 (Sarason et al., 1983; Timmerman et al., 2000)
Social Support Questionnaire (SSQ)			r = 0.36 (Sarason et al., 1983; Timmerman et al., 2000)

2. Method

2.1. Participants and Demographics

In a review by Tsang and colleagues (2017), they provided a guideline for selecting a sample size for scale validation. After reviewing 144 relevant articles published between January 2009 to September 2011, they found that the mean number of participants for a study is 509, with a median of 207 participants. This finding is consistent with what others recommend for a good sample size. Comrey and Lee (2013) provided a more general guideline, suggesting the following for an acceptable range of participants: 100 = poor, 200 = fair, 300 = good, 500 = very good, ≥1000 = excellent. Again, having 500 participants is deemed a good number for scale validation.

The literature also recommends selecting the number of participants based on the number of items in your questionnaire. Some have recommended a ratio of 2 to 20 subjects per item (Kline, 1979), with a minimum of 100 to 250 subjects (Everitt, 1975). Therefore, to be in line with the above aforementioned recommendations, 500 participants were recruited for an online study from York University's Undergraduate Research Participant Pool (URPP). The selected sample is the maximum sample size feasible for the population available for an MA thesis with no external funding and for the time frame available for this project. It should be noted, however that if wider access and more time were permitted, having additional participants would have been advisable. A good maximum sample size is usually around 10% of the population, as long as this does not exceed 1000.

Students who were enrolled in an Introduction to Psychology course at York University were able to sign up to participate in research studies in exchange for academic credit. Participant criteria also required that they were at least 16 years of age and registered York University undergraduate students. The age range selected for this sample will ensure that all questionnaires are developmentally appropriate. In addition, participants also needed to understand sufficient English to complete the survey accurately. These requirements were in line with a previous study conducted by the Cognitive Flexibility Lab using the WSESS (see Amin & Wiseheart, in preparation). After accounting for participants dropping out, 411 qualified participants (M = 19.79 years, SD = 3.96 years) remained.

The participant pool consisted of 102 men, 308 women, and 1 transgender participant, with the average age of the participant being 20 years old. The largest frequency of the sample identified as straight (88%), single (64%) and did not have children. In terms of religion, the largest

frequency of the sample was Catholic (25.78%), followed closely by Muslim (21.4%), and the largest frequency of the sample identified as Canadian (26%) as their primary culture. In their family, the primary wage earner was identified as a male (70%) and the secondary wage earner was identified as female (66%). Parent 1 was typically married (79%) majority of the time and so was parent 2 (79%). The largest frequency of the sample earned money from an employer (40%). The average number of hours a participant worked, if they had an employer, was 15.9 hours (SD = 9.1 hours), with the median number of hours also being 15 hours per week. Their median yearly income was estimated to be $8,000 (SD = 5,9671).

2.2. Measures

2.2.1. Social Support Inventory (SSI)

The Social Support Inventory is one of two social support measures that was used to validate the support items in the WSESS. The SSI is comprised of 20 items that are divided into four subscales: Emotional Support (a sample item being "cheers you up"), Informative Support ("Makes constructive criticism about you"), Social Companionship ("Calls you up just for a chat"), and Instrumental Support ("Lends you small things like effects or a little money") (Timmerman et al., 2000). These subscales reflect the different areas an individual can seek support. The format of the SSI is a 5-point Likert scale that evaluates how often a person's support person(s) engage in certain acts of social support (1= "Never" to 5= "A lot"). In terms of scoring, a subject's responses are summed, and the sum is divided by the number of items. This can be done for the total SSI or for each of the four subscales, however for the purpose of this study the total SSI was used.

Overall, the SSI was chosen because it has good reliability, with internal consistencies of its subscales ranging from 0.70 to 0.86, and there is evidence of convergent validity, with correlations running between 0.18 to 0.34 (Timmerman et al., 2000).

2.2.2. Social Support Questionnaire (SSQ)

The Social Support Questionnaire was the second of the two social support measures. Comprised of 27 items, each item requires the participant to do two things: (1) list the individuals that are available to them for help in specific situational circumstances, and (2) evaluate along a Likert scale how satisfied they are with the support (Sarason et al., 1987). For the purpose of this study, we did not have participants specify the individuals by listing them as this would not be useful information for our specific data analyses. Instead we only had participants select their level of satisfaction along a 6-point Likert scale (1 - "Very dissatisfied to 6 - "Very satisfied") for the

hypothetical situations in which support would be given. For instance, a participant would be asked to imagine a person who they could "trust with information that could get [them] in trouble" and to rate their level of satisfaction with that relationship in that specific context. This does not impact the integrity of the scale because scoring for part 1 and part 2 are already done separately. In terms of scoring, the mean of the scores across the 27 items provides an overall support score.

Overall, the SSQ was selected because the internal reliability of the scale is good, with a value of 0.97, and the inter-item consistency has a coefficient alpha of 0.94 (Sarason et al., 1983). The re-test correlation is also high, with a correlation of 0.90 (Sarason et al., 1983). The SSQ also has good convergent and divergent validity, with correlations ranging from -0.22 to -0.43 with the Beck Depression scale (Sarason et al., 1983). It is also positively correlated to an optimism scale, with a correlation of 0.57 (Sarason et al., 1983).

2.2.3. Social Readjustment Rating Scale (SRRS)

The Social Readjustment Rating Scale was the first of two life stressors measures that was used as a criterion measure. The SRRS is comprised of a list of 43 stressful life events (items varying from "divorce", taking on a mortgage", or "gaining a new family member") and participants select all those that apply within the last year (Holmes & Rahe, 1967). In terms of scoring, a total value for stressful life events were calculated by adding up the scores of all the Life Change Units (LCU) that are associated with each of the stressful life events.

The SRRS was selected as one of our criterion measures due to its good reliability and validity. Gerst et al. (1978) tested the reliability of the SRRS and found that this measure of life stressors remained extremely consistent (r = .96–.89). The SRRS also has reasonable external validity, demonstrating a positive correlation (r = .118) between life change scores and illness scores (Holmes & Rahe, 1967). It has also been shown to have a positive correlation with the Life Stress Inventory (LSI), with correlations running between 0.2 and 0.6 (McGrath & Buckhart, 1983).

2.2.4. Life Stress Scale (LSS)

The Life Stress Scale was the second criterion measure that evaluated life stressors. This is a 19-item measure that assesses the degree of stress a person has in multiple life contexts, including personal finances ("money or finances", environment ("safety, cleanliness, noise, pollution, graffiti"), relationships ("Marriage, romantic relationships"), and health ("Getting proper medical care") during the past three months (Ashing-Giwa, Ganz, & Petersen, 2004). Each

item is scored on a 5-point liker scale (1 - “Extreme Stress” to 5 - “No Stress”), therefore the scale needed to be reverse coded to match with the other life stressor scales in this study. In terms of scoring, a subject’s responses were summed, and the sum is divided by the 19 items to create an average.

The LSS was selected because it has good internal consistency, having a Cronbach’s alpha ranging from .86-.88 in studies with multiethnic samples, and it also demonstrates excellent reliability (.77- .86) (Wu, Ashking, & Barcelo, 2018). Sanders-Philips (1996) also demonstrated that it has moderate to strong correlations with existent scales, demonstrating good construct validity.

2.2.5. Family Affluence Scale (FAS-III)

The Family Affluence Scale-III (FAS) was one of the two measures of financial resources that was used as a criterion in my study. It consists of eight items that evaluate whether a participant has access to certain materials as a measure of wealth (Hartley, Levin, & Currie, 2016). These materials include such items as having their own bedroom, access to internet, ability to go on holidays abroad, access to a bathroom, and access to a dishwasher, tumble dryer, and/or washing machine in the home. The questions are formatted in either a yes-no format (0 = “No”, 1 = “Yes”), or participants must select one of three options that best apply to the situation indicated in the question (e.g. “Does your family own a car?” 0 = “No”, 1 = “Yes”, 2 = “Yes, two”). A survey of the studies associated with FAS has shown two ways of scoring this scale. The first is calculating the mean of the scores across the eight items to get an overall affluence score, with higher scores indicating a higher degree of family affluence. The second is combining the scores of each of the items to provide a composite score, with higher scores indicating higher family affluence as well. For the purpose of this study, I selected the former method rather than the latter. For the purposes of this study, the former scoring technique was used.

We selected the updated version of FAS-III instead of FAS-II because a review concluded that FAS II was not discriminatory between very rich or very poor countries (Currie et al., 2008). Therefore, the FAS-III was developed to take into account current trends in family consumption patterns across the European region, the United States, and Canada (Hartley, Levin, & Currie, 2016). Retest reliability across six countries was 0.90, and the test of criterion validity revealed a positive relationship with parent income, with a correlation close to 0.30 (Hartley, Levin, & Currie, 2016).

2.2.6. Family Resource Scale (FRS)

The Family Resource scale was the second of two measures of financial resources. The questionnaire includes 30 items based on a hierarchy of needs (Dunst & Lee, 1987). Overall, items are related to family needs and resources such as, access to growth/support, health/necessities, physical necessities, physical shelter, intra-family support, communication/employment, childcare, and personal resources. Analyses support a four-facet structure: basic needs ("Food for 2 meals a day"), money ("money to save"), time for self ("time to socialize"), and time for family ("time to be with children") (Van Horn et al., 2001).The questions are formatted along a 5-point Likert scale of how adequate their access to resources are on a monthly basis (0 = "Does not apply, 1 = "Not at all adequate" to 5 = "Almost Always Adequate"). In terms of scoring, a mean score of all the items can be calculated to evaluate a family's availability to resources and their basic needs.

The scale has good reliability, with the average correlation between the 30 items being a coefficient alpha of 0.92, and good re-test reliability, having a stability coefficient for the total scale scores of 0.52 (Dunst & Lee, 1987; Uphold, 2016).The scale was also was tested for convergent and predictive validity, yielding a weak, but positive correlation of 0.2 across its subscales (Van Horn et al., 2001).

2.2.7. Wiseheart Socioeconomic Status Scale (WSESS)

The WSESS is a composite measure of SES with a total of 144 items. It is designed for emerging adults and adult populations. Like traditional SES measurements, the WSESS collects data on income, education and occupational prestige, but also novel items concerning the participant's financial resources, social supports and life stressors across several WSESS subscales.

In terms of how this data is collected, the participant's yearly income as well as their family members' yearly incomes are requested, and they are also asked to indicate their level of confidence in their estimation. This is a novel aspect and was done in response to poor response recall concerns (Entwisle & Astone, 1994).

The WSESS also gathers information on education by asking about the number of years a guardian has of education, and by asking the level of education completed. The levels were based upon the International Standard Class-action of Education (United Nations Educational, Scientific and Cultural Organization, 2011) Levels of education were included because of differences in learning that happen at different levels of education, and how those skills impact an individual's

level of income and occupational attainment. For instance, there is a difference between an individual who has completed two bachelor's degrees (8 years) as opposed to an individual who has completed a bachelor's degree (4 years) and two separate master's degrees (each 2 years).

The WSESS collects information on occupational prestige by asking the participant to select their guardian(s) occupation from the occupational standings provided by Goyder and Frank (2007), which are based on Canadian National Occupational Classification codes. For instance, a participant would first select the category (e.g., "Sales & Service Occupation), then the group (e.g., "Service Supervisors & Specialized Service Occupations"), then the subgroup (e.g., "Chefs & Cooks"), and finally the occupation (e.g., "Cooks").

The WSESS has been used previously to evaluate the relationship between biculturalism and psychological wellbeing (Amin & Wiseheart, in preparation) and bilingualism and task switching (D'Souza & Wiseheart, data collected), and the factor structure of the scale is being analyzed (Wiseheart & D'Souza, in preparation). However, in an effort to capture more variance in the sample and in acknowledgement of the criticism by the APA Task Force on socioeconomic status, the WSESS was expanded from 75 items to 144 items by conducting a thorough literature review on factors relating to SES, social support factors, life stressors, and how researchers measure financial resources and wealth. The inclusion of wealth was to allow for the WSESS to capture the balance of assets to debt that was not being evaluated by only measuring the traditional SES factor of income. Items that target both the life stressors and social supports were either developed or re-developed and targeted sociodemographic factors in everyday life. These items were included in the following subscales of the WSESS: home/neighbourhood environment, school/work environment, relationships (family, friends & acquaintances), health (physical & mental) and spirituality (purpose & meaning in life). These new novel subscales account for 114 of the 144 items in the WSESS scale.

These changes are briefly outlined in Table 6 below. While this may seem excessive, Boateng and colleagues (2018) recommend that during item generation in scale development that the initial number of items should be at least twice as long as the desired final scale length, and to avoid this process would mean to risk not capturing important aspect of the construct.

Table 6

Thematic Additions to the Items of the WSESS since Wiseheart and D'Souza. (in preparation)

	WSESS prior to changes	WSESS after changes
Household Finances	9	8
Support Items		
Number of items	5	4
Theme of Items	Luxuries (e.g., cottage, vacation, entertainment), unexpected expenses	Luxuries (e.g., cottage, vacation, entertainment), unexpected expenses, months of savings, investments
Stressor Items		
Number of items	4	4
Theme of Items	Affordability of healthcare, housing, basic needs, transportation	Affordability of healthcare, housing, basic needs, transportation, education-based funds
Environment: Home	6	19
Support Items		
Number of items	3	11
Theme of Items	Aesthetics of your home, sufficient space for hobbies or guests to come over	Sufficient space for hobbies or guests to come over, availability for sports/recreation, private space, comfortable furniture, green spaces, availability to family, weather & climate, diversity, natural sunlight, distance to healthcare
Stressor Items		
Number of items	3	8
Theme of Items	Distance to needed resources, neighbourhood safety, Noise/disturbances	Infestation risk, neighbourhood safety, noise disturbances, destruction of property, unpleasant physical conditions, pollution, stressful commute
Environment: School and/or School	12	13
Support Items		
Number of items	6	8
Theme of Items	Aesthetics of your school/work, awards and	Aesthetics of your school/work, awards and room for growth, supports

	room for growth, supports and needed resources	and needed resource, level of diversity, comfortable furniture, natural sunlight, break times
Stressor Items		
Number of items	6	5
Theme of Items	Unpleasant physical conditions, harassment, safety, pressure, inadequate resources	Unpleasant physical conditions, harassment, safety, pressure, treatment by teachers/superiors
Relationship: Family	10	12
Support Items		
Number of items	5	5
Theme of Items	Positive relationships, encouragement, supportive, spending time together, respect	Encouragement, spending time together, strength of bond, love, attention to emotional needs
Stressor Items		
Number of items	5	7
Theme of Items	Negative relationships, pressure, concern about their health, arguing (with you or each other)	pressure, concern about their health, burdened by caretaking, erratic behaviour, difficult requests, dread spending time, feeling ignored
Relationship: Close Friends	10	12
Support Items		
Number of items	5	5
Theme of Items	Positive relationships, encouragement, supportive, spending time together, respect	Encouragement, spending time together, strength of bond, love, attention to emotional needs
Stressor Items		
Number of items	5	7
Theme of Items	Negative relationships, pressure, concern about their health, arguing (with you or each other)	pressure, concern about their health, burdened by caretaking, erratic behaviour, difficult requests, dread spending time, feeling ignored
Relationship: Acquaintances	6	6
Support Items		
Number of items	3	3
Theme of Items	Positive relationships, encouragement, respect	Encouragement, respect, amount of help received

Stressor Items		
Number of items	3	3
Theme of Items	Being ignored/disrespected, pressure, arguing with you	Being ignored, difficult requests, dread spending time together
Health	12	19
Support Items		
Number of items	6	9
Theme of Items	Healthy lifestyle, social life, mental health, nutritious foods, enough sleep, bountiful energy	Healthy lifestyle, social life, mental health, nutritious foods, bountiful energy, quality and enough sleep, dental hygiene, feelings of relaxation and resiliency
Stressor Items		
Number of items	6	10
Theme of Items	Physical health issues, mental health issues, sleep problems	Physical health issues, mental health issues, sleep problems, cognitive issues, unhealthy weight
Spirituality	6	21
Support Items		
Number of items	3	12
Theme of Items	Sense of purpose, religion as supportive, part of a religious support network	Sense of purpose, spirituality as supportive, part of a group (discussion and sharing common interest), overcome obstacles, hope in uncertain times, connection to other, encourages sense of respect, compassion and kindness towards self and others
Stressor Items		
Number of items	3	9
Theme of Items	Feelings of stress due to religion, neglected by a higher power, lack of spiritual direction	Feelings of stress due to beliefs, isolation and rejection due to the presence or lack of beliefs, lack of purpose, negative emotions (cannot love oneself, empty inside)
TOTAL	75* 71 + 4 (branching questions)	114* 110 + 4 (branching questions)

The scale was also changed from the initial 1-100 slider option to the traditional 7-point Likert scale. A 7-point Likert scale was selected over the traditional 5 because it provides more options which in turn increase the probability of meeting the objective reality of peoples' true response. A large body of evidence has shown that the reliability and validity of scales taper off after seven response alternatives (Lozano, Garcia-Cueto, & Muniz, 2008). Leung (2011) compared the psychometric properties of varying Likert scales (4, five, six, 7 and 11 points), and found that more response choices on the scale led to less skewness and kurtosis.

The Likert scale was also chosen over the slider option as a way to reduce missing data and to fight against potential response bias. According Couper and colleagues (2006), there is a pattern of missing data when sliders scales and other visual analogue scale have been used. One explanation has to do with their longer times to complete and their increased level of complexity as compared to the traditional Likert method (Vicente & Reis, 2010; Husser & Fernandez, 2013). Slider scales are not as intuitive as simply clicking a button along a Likert scale. Respondents take additional time to complete the slider scales because they are reading instructions about how to use and interpret the scale. This can lead to missing data from breakoffs as participants become frustrated by increased complexity (Vicente & Reis, 2010).

2.3. Procedure and Data Analysis

Data were collected from September 2019 to November 2019 from an online survey through a platform called Qualtrics. Ethics approval for this project was obtained from York University's research ethics committee for either online or in-lab participation. Participants voluntarily participated in the survey as indicated by their completion of a digital consent form. At the beginning of the survey, participants completed a brief demographic questionnaire about their age, gender, sexual orientation, citizenship status, relationships, religious affiliation, work, and language abilities. Next, participants completed the WSESS questionnaire and the associated criterion measures. These questionnaires required that participants either select between a yes or no option, choose the best response along a Likert scale, or select all items that apply. The whole process took approximately 1 hour to complete. Following completion of the questionnaires, debriefing was provided and contact information for the researchers was given.

2.4. Analyses

R and JASP were the programs used to analyze the data for this study. Much of the data was based upon questionnaires and scales that were in the Likert format. Therefore, for the purpose

of analyzing the WSESS, the mean was calculated based upon the item response for participant's financial resource scores, their psychosocial support scores, and their psychosocial stressor scores. We also calculated the mean scores for the other scales that were being used as criterion measures. Afterwards parametric tests were used. Parametric tests were deemed appropriate as the Likert data was based upon multiple components (i.e. Likert scale vs. Likert item) that were designed to understand a single unified construct (Carifio & Perla, 2008). Furthermore, applying parametric analysis to Likert data often leads to the same conclusions as those drawn from applying non-parametric (Galito, 1959).

2.4.1. Internal Consistency Reliability

Measuring the internal consistency reliability of a questionnaire is an important step in evaluating how consistently the survey captures information across different circumstances. We measured the internal consistency reliability of the WSESS by evaluating the coefficient omega (Flora, 2019). We used the coefficient omega because the coefficient alpha has a tendency to provide inaccurate estimates due to its psychometric model (Flora, 2019). We did this for the financial resources' subscale, as well as the set of support items within the seven subscales of the WSESS and the set of stressor items within the seven subscales of the WSESS. Higher values will be an indication of strong reliability within the subscales. According to the literature, the ideal cutoff value is 0.70 in order to indicate adequate internal consistency (Tsang et al., 2017).

2.4.2. Validity

Testing the validity of measures is another important step in the scale validation process because it ensures that items are measuring the domain of interest that has been developed through a thorough literature review and discussion of key concepts the researchers wanted to target in their questionnaire. To establish the construct validity of the new subscales of the WSESS, I ran a correlation analysis between the new subscales of the WSESS and the associated criterion measures. As a reference, I used the guidelines set out by Mukaka (2012) in interpreting the strength of the relationship but was also mindful of the predominant correlations within the field. Stronger and significant correlations will provide support that the new subscales of the WSESS are measuring the same construct as the criterion measure, and therefore within the domain of interest (Tsang et al., 2017).

3. Results

3.1. Central Tendencies and Distributions

Please consult Appendix 1: Distributions for graphics of each subscale that correspond to the following descriptions below.

3.1.1. Household Finances

The distribution is slightly skewed and has a mean score of 4.4. This means that the average participant requires only some outside assistance for medical expenses, housing, food, utility and transportation, and higher education. They also have a little over 3 months' worth of emergency cash and some portion of their money in investments. Lastly, they can only have moderately luxurious vacations.

3.1.2. Home Environment

3.1.2.1. Support. The distribution is slightly skewed and has a mean score of 5.3. The average participant is somewhat satisfied with the level of support they receive from their household environment. This means that they are somewhat satisfied with the amount of space to pursue their hobbies, access to sports and/or recreational activities, access to a private space, access to comfortable furniture, access to green spaces and/or parks, amount of family living nearby, the weather and/or climate in their area, access to natural sunlight in their home and the availability of nearby healthcare facilities.

3.1.2.2. Stressors. With a mean score of 2.8, the average participant appears to almost never experience any stressors within their home environment. This means that the average participant in our sample almost never experiences vermin, distracting noises, experiences fear when walking in their neighbourhood, sees metal bars on the homes in their neighbourhood, lives in a home that has either unpleasant physical conditions and/or in major needs of repair, lives in an area of heavy pollution or feels stressed by their commute.

3.1.3. Relationships: Family

3.1.3.1. Support. The distribution plot is approaching normality and has a mean score of 5.1. The average participant is somewhat satisfied with the level of support they receive from their family members. This means that they are somewhat satisfied with the amount of love, attention and encouragement they receive from their family, and they are somewhat satisfied with the amount of time they spend with them and the bond they have with their family overall.

3.1.3.2. Stressors. The distribution for family stressors is close to a normal distribution. With a mean score of 3.4, the average participant rarely experiences any stressors within their family unit. This means they rarely feel ignored or have too much pressure put on them. They rarely feel concerned about the health of their family members or feel burdened by taking care of them. They also rarely feel like their family members act erratically or make difficult requests from them. Lastly, they rarely dread spending time with them.

3.1.4. Relationships: Close Friends

3.1.4.1. Support. The distribution plot is negatively skewed with majority of the sample selecting above 5 (somewhat satisfied). With a mean score of 5.4, the average participant is somewhat satisfied with the level of support they receive from their close friends. This means that they are atleast somewhat satisfied with the amount of love, attention and encouragement they receive from their close friends, as well as somewhat satisfied with the amount of time they spend with them and the bond they have with them overall.

3.1.4.2. Stressors. The distribution plot is positively skewed, with majority of the sample selecting below 3 (rarely). With a mean score of 2.9, the average participant rarely to almost never experiences any stressors with their close friends. This means they rarely feel that they are ignored or have too much pressure put on them by their close friends. They rarely to almost never feel concerned about the health of their close friends or feel burdened by taking care of them. They also rarely to almost never feel like their close friends act erratically or make difficult requests from them. Lastly, they rarely to almost never dread spending time with them.

3.1.5. Relationships: Acquaintances

3.1.5.1. Support. The distribution plot appears unimodal at Likert points 4, 5, 6. This could be due to the reduced sample size for this section, as participants were given the option of passing over this section if they felt they did not have any acquaintances. Nevertheless, with a mean score of 4.9, the average participant is at least neutral (almost somewhat satisfied) with the support they receive from their teachers, classmates, coworkers and other people who are not close friends or family. This means that they feel at least neutral (almost somewhat satisfied) regarding the help, encouragement or respect they receive from their acquaintances.

3.1.5.2. Stressors. The distribution plot is skewed to the right and appears unimodal at Likert points 3 and 4. This could be due to the reduction in our sample size due as participants were given the option of passing over this section if they felt they did not have any acquaintances. With a

mean score of 3.1, the average participant rarely experiences stressors from their teachers, classmates, coworkers and other people who are not close friends or family. This means that participants rarely experience situations where acquaintances have made difficult request of them, have ignored them or where they dread spending time with them.

3.1.6. School/Work Environment

3.1.6.1. Support. The mean score is 4.86 and the distribution plot has some uniformity around Likert points 4, 5 and 6, so a good portion of people feel somewhere between neutral to satisfied about the supports in their school and/or workplace. This means that the average participant feels neutral to satisfied with the incentives for performance, their opportunities to grow, the level of diversity in their workplace, their space to work, their access to resources, their ability to take a break and their access to natural sunlight at school or work.

3.1.6.2. Stressors. The distribution plot is skewed to the right, with a mean score of 2.9 and majority of the scores being below Likert point 3. This means that the average participant never (almost rarely) experiences any stressors in the form of harassment, pressure, unpleasant physical conditions, safety hazards or unfair treatment in their school or workplace.

3.1.7. Health

3.1.7.1. Support. The mean score is 4.6 and the distribution is approximately normal. This means that the average participant engages in supportive health behaviours sometimes or at least more than once a month. They are participating in activities that boost their physical and mental health, they pay attention to their dental hygiene, they get both good and enough rest, and are eating a balance diet at least once a month. They also feel moderately energetic, relaxed and resilient.

3.1.7.2. Stressors. The mean score is 3.1 and the distribution plot is skewed to the right with a heavy portion of the answers below Likert point 4 (sometimes). This means that the average participant expresses that they rarely experience stressful physical, cognitive, or emotional issues that impair their overall health and their daily functioning.

3.1.8. Spirituality

3.1.8.1. Support. The mean score is 5.0 and the distribution plot is skewed to the left with majority of the sample's answer being above Likert point 4 (neutral). This means that the average participant somewhat agrees that spirituality provides them with a sense of purpose and support to

overcome obstacles or uncertain times. They also agree that it increases their connection to the world, others and even within themselves.

3.1.8.2. Stressors. The mean score is 3.3 and the distribution is skewed to the right, with some of the scores above Likert point 4 being uniform in nature. This means that the average participant somewhat disagrees with the statement that their spirituality or the lack thereof is a stressor in their life. In particular, they somewhat disagree that spirituality makes them feel rejected or isolated or that their belief system causes them stress. They also somewhat disagree that they feel directionless and/or empty if they do not have a sense of meaning and purpose in life.

3.2. Internal Consistency Reliability

3.2.1. Home Finances

The internal consistency reliability of the items within the Home Finances subscale of the WSESS are strong overall and meet the requirements of the first hypothesis. There is high internal consistency between the items in the Home Finances scale, with a $\omega = 0.88$. The reliability tests also indicated there were no questions that, if removed, would increase internal reliability for this subscale of the WSESS.

3.2.2. WSESS Social Support

The internal consistency reliability of the support items within the seven WSESS subscales are strong overall and meet the requirements of the first hypothesis. The results of the reliability tests for each of the WSESS subscales are listed in Table 7. The most internally consistent scale is the Spirituality subscale, with $\omega = 0.95$ and the least internally consistent scale is the Health subscale, with $\omega = 0.79$, however this is still above the required $\omega = 0.70$ set at the beginning of the study.

Table 7

Reliability Tests for Support Items in the WSESS Subscales

	Reliability Test (coefficient omega)
Home Environment	0.87
School/Work Environment	0.85
Relationships: Family	0.92
Relationships: Close Friends	0.90
Relationships: Acquaintances	0.89
Health	0.79

Spirituality	0.95

The internal consistency reliability tests conducted on the support items within the seven WSESS subscales also indicated there were questions that, if removed, could increase internal consistency reliability for the subscales. For instance, the coefficient omega for Relationships: Family would have increased to 0.92 if we dropped question item "How satisfied are you with the amount of time you spend with your family?" Similarly, the coefficient omega would have also increased to 0.92 for Relationships: Close Friends, if we dropped the same question. The coefficient omega would have increased to 0.90 for the Relationships: Acquaintances subscale to 0.90 if we dropped the question "How satisfied are you with the level of respect you receive from your acquaintances?" Lastly, the coefficient omega for the support items within the Spirituality subscale would have increased to 0.96 if the question, "I spend time discussing the meaning and purpose of life with others" was dropped.

3.2.3. WSESS Life Stressors

The internal consistency reliability of the stressor items within the WSESS subscales is moderate to strong and also meet the requirements of the first hypothesis. The results of the reliability tests for the seven WSESS subscales are listed in Table 8. The most internally consistent set is once again the stressors items within the Spirituality subscale, with $\omega = 0.92$, and the least internally consistent set of the stressor items is the Relationships: Acquaintances subscale, with $\omega = 0.72$, however this is still above the required $\omega = 0.70$ set at the beginning of the study.

Table 8

Reliability Tests for Stressor Items in the WSESS Subscales

	Reliability Test (coefficient omega)
Home Environment	0.78
School/Work Environment	0.87
Relationships: Family	0.78
Relationships: Close Friends	0.85
Relationships: Acquaintances	0.72
Health	0.89
Spirituality	0.92

The internal consistency reliability tests conducted on the life stressor items within the seven WSESS subscales also indicated that if certain items were removed, the coefficient omega would increase for certain measures. For example, the coefficient omega would have increased for Relationships: Family stressor items to 0.86 if "How often do you worry about the physical and mental health of your family members" was removed. Similarly, the coefficient omega would have also increase for Relationships: Close Friend stressor item to 0.96 if, "How often do you worry about the physical and mental health of your close friends" was removed.

3.3 Validity

3.3.1. Home Finances

As outlined in Table 9 below, the WSESS Home Finances subscale had a weak-to-moderate correlation with each of the wealth criterion measures. The Home Finances subscale is weak-to-moderately correlated to Family Resources Scale (FRS), $r(411) = 0.34$, $p < .001$. and weak-to-moderately correlated to the Family Affluence Scale (FAS), $r(411) = 0.35$, $p < .001$. These are in line with our second major hypothesis (r = 0.30 - 0.69) and slightly above the correlation of 0.3 between the WSESS financial resource subscale and the criterion measures outlined in sub-hypotheses in Table 5 (Hartley, Levin, & Currie, 2016). In this respect, the WSESS Home Finances subscale has demonstrated good construct validity when compared to two different criterion measures.

Table 9

Pearson Correlations of Financial Items within WSESS and Criterion Measures

	Family Resources Scale (FRS)	Family Affluence Scale (FAS)
Home Finances	0.34	0.35

3.3.2. WSESS Social Support

As outlined in Table 10, there are both weak (below r = 0.3) and weak-to-moderate correlations (r = 0.30 - 0.69) between the social support items in seven WSESS subscales and the Social Support Inventory (SSI). When we consider the secondary hypothesis, only the Relationships: Family, Relationships: Close Friends and Spirituality subscales are in line with the second major hypothesis of having a weak-to-moderate correlation (r = 0.30 - 0.69). This means that the following subscales did not meet the requirement of having a weak-to-moderate correlation

(r = 0.30 - 0.69): Home Environment, School and/or Work Environment, Relationships: Acquaintances, and Health.

When we consider the sub-hypotheses (see Table 5), none of the correlations between the subscales and the SSI were the predicted weak-to-moderate correlation of 0.36 (Sarason et al., 1983; Timmerman et al., 2000). However, the Family subscale and the Spirituality subscale produced correlations that were very close.

Table 10

Pearson Correlations of Support Items within WSESS and Criterion Support Measures

	Social Support Questionnaire (SSQ)	Social Support Inventory (SSI)
Home Environment	0.39	0.26
School/Work Environment	0.28	0.20
Relationships: Family	0.44	0.35
Relationships: Close Friends	0.50	0.31
Relationships: Acquaintances	0.32	0.24
Health	0.41	0.28
Spirituality	0.37	0.34

There are also weak-to-moderate correlations (r = 0.30 - 0.69) between the social support items in the seven WSESS subscales and the Social Support Questionnaire (SSQ). When we consider the secondary hypothesis, the correlations between the social support items in the WSESS subscales and the SSQ are all in line with the second major hypothesis of a weak-to-moderate correlation (r = 0.30 - 0.69) except for School and/or Work Environment. When we consider the sub-hypotheses (Table 5), the correlation between SSQ and Relationships: Acquaintances, as well as the correlation between SSQ and School and Work Environment, are below the predicted correlation of 0.36 (Sarason et al., 1983; Timmerman et al., 2000). Therefore, the support items in the seven WSESS subscales appear to demonstrate good construct validity when compared to the criterion measure SSQ, but not as well when compared to the criterion measure, SSI.

3.3.3. WSESS Life Stressors

As outlined in Table 11, there are moderate correlations between the stressor items in the seven WSESS subscales and the Life Stress Scale. These correlations between the life stressor items in the WSESS subscales and the LSS are all in line with the second major hypothesis of a weak-to-moderate correlation (r = 0.30 - 0.69). When we consider the sub-hypotheses (Table 5), all of the WSESS subscales, with the exception the Relationships: Acquaintances subscale, were at-least the predicted weak-to-moderate correlation of 0.34 (Holmes & Rahe, 1967; McGrath & Buckhart, 1983).

Table 11

Pearson Correlations of Stressor Items within WSESS and Criterion Stressor Measures

	Life Stress Scale (LSS)	Social Readjustment Rating Scale (SRRS)
Home Environment	0.55	0.09
School/Work Environment	0.47	0.26
Relationships: Family	0.45	0.27
Relationships: Close Friends	0.46	0.21
Relationships: Acquaintances	0.31	0.20
Health	0.55	0.23
Spirituality	0.41	0.12

Overall there are weak correlations between the stressor items within the seven WSESS subscales and the Social Readjustment Rating Scale. That being said, all of the correlations between the stressor items in the WSESS subscales and the SRRS were not in line with the second major hypothesis of a weak-to-moderate correlation (r = 0.30 - 0.69). In-addition, when we consider the sub-hypotheses (Table 5), none of the WSESS subscales are at-least the predicted weak-to-moderate correlation of 0.34 (Holmes & Rahe, 1967; McGrath & Buckhart, 1983). In this respect, the stressor items within the seven WSESS did not have good construct validity when compared to the criterion measure, the SRRS, as compared to the LSS.

4. Discussion

4.1. Summary of Results

The present study was a validation project designed to evaluate the reliability and validity of the WSESS. Reliability tests were run for the Financial Resources subscale, as well as each set of support items and stressor items for each of the remaining seven WSESS subscales. Construct validity was also evaluated by running correlation analysis in order to see whether the subscales were properly capturing the construct by comparing them to existent measures that evaluate the same construct. The present study's reliability test results demonstrated that each of the subscales of the WSESS met the first major hypothesis, all yielding an omega coefficient of over 0.70 for each (Tsang et al., 2017). The results for the second major hypothesis are more varied, with many of the WSESS subscales having either a weak or weak-to-moderate correlation with their associated criterion measure. For instance, the Financial Resources subscale seemed to have good construct validity when compared to the two criterion measures, however the support items within the WSESS subscales only had good construct validity when compared to the SSQ. Similarly, the life stressor items within the WSESS subscales only had good construct validity when compared to the LSS, and not the SRRS. In terms of the sub-hypotheses for the second major hypothesis, some subscales did not meet the recommended correlation for their criterion measure based upon the literature review.

- The correlations between the Financial Resource subscale and the FAS as well as FRS were above the required correlation of 0.30 (Hartley, Levin, & Currie, 2016).
- The correlations below SSQ and Acquaintances subscale as well as School and Work Environment subscale were below the required correlation of 0.36 (Sarason et al., 1983; Timmerman et al., 2000); all other subscales were above the required correlation.
- All of the correlations between the WSESS subscales and the SSI were below the required correlation of 0.36 (Sarason et al., 1983; Timmerman et al., 2000).
- All the correlations between the subscales and the LSS, with the exception the Acquaintances subscale, were above the required correlation of 0.34 (Holmes & Rahe, 1967; McGrath & Buckhart, 1983).
- All correlations between the subscales and the SRRS were below the required correlation 0.34 (Holmes & Rahe, 1967; McGrath & Buckhart, 1983).

4.2. Internal Consistency Reliability

The reliability tests conducted for this study indicated that the Financial resources subscale and all sets of stressor and support items within the seven WSESS subscales were at an acceptable level of internal consistency (over 0.7 omega coefficient). This means that the thorough literature review during item generation and re-generation for each of the subscales was assistive in producing a stable internal construct for each of the subscales of the WSESS. The reliability tests did, however, indicate that some subscales were more internally consistent than others. This information will be useful in re-constructing the WSESS in the future, especially as it pertains to the reduction of the number of items while still maintaining the measurement of a stable construct.

4.2.1. Financial Resources

The reliability of the items within the Home Finances subscale of the WSESS are strong overall and meet the requirements of the first hypothesis. The reliability tests also indicated there were no questions that, if removed, would increase internal consistency reliability for this subscale of the WSESS. A possible explanation for why this is the case could be because, while the items of this section differed, they all were capturing varying degrees of wealth (i.e., basic needs, wants and luxuries).

4.2.2. Social Supports

From the reliability tests of the support items in the WSESS subscales, the Spirituality subscale yielded the highest coefficient omega. One reason for this high internal reliability is because all the questions had to do with the participants' sense of meaning and purpose, and their connection to themselves and the world around them. Also, what may have also assisted in this unity was that majority of the statements had a similar statement stem, "My sense of meaning and purpose helps/increases". In this way, participants would evaluate and understand the statements in a similar manner, which could explain a similar response in their answers across the items.

By contrast, the support items in the Health subscale had the lowest internal consistency reliability score. This may be because the construct of Health is multi-faceted and complex. The items of the WSESS attempted to cover all types of health in order to capture the complicated relationship with SES (e.g., physical health, mental health, sleep, dental hygiene, nutrition) (Hudson, 2005; Pechey & Monsivais, 2016; Wang & Geng, 2019). The level of complexity reflected in the various items may have reduced the internal reliability of the construct for this

subscale. That being said, because the coefficient omega was still over an acceptable level the complexity of this set of items should not be a serious concern.

The reliability tests of the support items in the WSESS subscales indicated that already successful subscales could be improved though the removal of certain items, creating a more cohesive construct. For instance, the three relationships subscales within the WSESS all could be improved by re-evaluating certain items.

Firstly, the coefficient omega for both the Relationships: Family and Relationships: Close Friend subscales would have increased if "How satisfied are you with the amount of time you spend with your family" was dropped. A potential reason for this may be due to the participant's perception of time. According to the planning fallacy, participants experience difficultly in accurately evaluating their time (Buehler, Griffin, & Ross, 1994). Perhaps participants were not able to properly evaluate the amount of time they spent with their family or what constitutes time spent (e.g., doing an activity together or simply being in the same room while both attend to separate tasks). Also, what may be an acceptable time for spending time with family may depend on one's culture (Bornstein, 2012).

Similarly, the internal consistency reliability score for Relationships: Acquaintances subscale would have also increased if "How satisfied are you with the level of respect you receive from your acquaintances" was dropped. The reason for this may have to do with the level in which participants value their relationships with their acquaintances. According to Iveniuk and Schumn (2016), the bond and opinions of family members were most important to one's overall well-being. Perhaps then participants felt that the level of respect they received from acquaintances mattered less because of the frequency in which they interact with these people as opposed to family members and close friend.

While already one of the most internal consistent of the subscales, the Spirituality subscale would have also seen an increase in its coefficient omega score if "I spend time discussing the meaning and purpose of life with others" was dropped. A reasonable explanation for this is because a person's meaning and purpose in life is personal in nature and could be connected to many different aspects of a person's life. It could be a work goal (e.g., a promotion) or something more abstract in nature (e.g., becoming a more confident person). In this respect, this item may be interpreted too broadly as compared to the rest of the items. However, due to the strength of this section of the subscale, the item is not likely to be dropped.

4.2.3. Life Stressors

From the reliability tests of the stressor items within the WSESS subscales, the Spirituality subscale yield the highest coefficient omega. This result can be understood for similar reason why the support items within the Spirituality subscale also yielded a high omega coefficient. In particular, all the questions had to do with the participants' sense of meaning and purpose, as well as beliefs. There was a bit more diversity in the question items, in so that this section of the subscale explored the stressors of both the presence of their spirituality as well as the absence of a spirituality, nevertheless this did not appear to affect the overall internal consistency reliability of this section.

Once again, the stressor items within the Relationships: Acquaintances subscale had the lowest reliability score. An examination of the items in this section reveals one potential reason for this low coefficient omega. While the subject matter of the question deals with a similar theme of disrespect and negative emotion, there are simply too few items within this subscale. When running reliability tests, the more items there are in a scale the more reliable the measurement will be (Boateng et al., 2018). Therefore, using only three items for this section may have contributed to the lower coefficient omega score. Future designs of this subscale will require additional items to be added or for the construct being evaluate by the Relationships: Acquaintances subscale be assimilated into the Relationships: Close Friends subscale to create a larger construct of members outside of immediate family relationships.

Similarly, the removal of certain items within the stressor section of the WSESS subscales could also increase their coefficient omega. Both the subscales of Relationships: Family and Relationships: Close Friends would have had a higher reliability score if "How often do you worry about the physical and mental health of your family members/close friend" was removed. One potential reason as to why this item may not fit neatly within either the Family or Close Friends construct is because the question could be age sensitive, in so that older participants would answer this differently than younger results. In a review by Beadle and Christine (2019) on the impact on aging and emotional empathy, they found that as one ages there is higher motivation to make and maintain stronger emotional connections with others. Unlike cognitive empathy, emotional empathy entails feeling sympathy and caring for the other people who may or may not be in distress. An older individual may worry about the physical and mental health of a family or close friend more than a younger individual.

4.3. Validity

Boateng and colleagues (2018) state that a scale's validity is an important part of the scale development process because it is the extent in which an instrument is measuring the construct it was developed to evaluate. For the purpose of this study however, the WSESS was evaluated against criterion measures that measure the same construct. The intent was that if the WSESS subscales are externally valid, they should be able to match other pre-existing and externally valid measures.

4.3.1. Home Finances

The correlations between the WSESS' Home Finances subscale and the two criterion measures were weak-to-moderate in strength and both met the criteria for the second major hypothesis. Having such few items, the Family Affluence scale (FAS) had some similarities but also some dissimilarities to the content in the WSESS Home Finance subscale and that could explain for the weaker correlation between the two criterion measures of financial resources. For instance, while Home Finances and the FAS both addressed questions regarding vacations, the FAS was far more specific with regards to their other items relating to wealth. In particular, they specifically asked about access to technology, a bedroom, a motorized vehicle and a dishwasher. They had phrased it this way as to get as family wealth through a proxy (Hartley, Levin & Currie, 2016). The WSESS Home Finance scale addressed wealth by having items that could be divided into basic needs, wants and luxuries, therefore items that addressed motorized vehicles, for example, were addressed more broadly in the item, "How much of your family's food, utility, and transportation expenses can your household cover without outside assistance?" It was also found that the FAS did not go beyond physical possessions to understand wealth whereas the WSESS Home Finance subscale did by including items that involve investments and luxuries. In this respect, the WSESS Home Finance subscale took a more balanced account of wealth than FAS and this may explain for the slightly weaker correlation as compared to the FRS.

The Family Resource scale (FRS) had a weak-to-moderate correlation with WSESS' Home Finances subscale and met the criteria for the second major hypothesis. The items in the FRS are very specific in nature, addressing basic needs for the household, social desires, and as well as luxuries, such as vacations and the ability to save. However, there were items that did not match with the conceptualization of wealth in the Home Finance subscale and they may have impacted the correlation between these two scales. For instance, FRS includes items such as having time to

be with yourself, your family and/or your children. The item was created with the intention that with sufficient wealth, you will be able to afford the time to be with others as opposed to working (Van Horn, Bellis, & Snyder, 2001). In our conceptualization of wealth, the WSESS did not include an item like this as we wanted to keep social relationships cleanly within the three Relationship subscales. In this respect, the level of specificity of its items and perhaps the broader understanding of how they defined financial resources could explain for the weaker correlation between the FRS and the Home Finance subscale.

4.3.2. Social Support

There were moderate correlations between the support items in WSESS subscales and the Social Support Questionnaire, and with the exception of the School and/or Work Environment, majority were in line with the second major hypothesis. Items within the SSQ had the participant imagine a supportive person with whom they felt they had a good relationships with (e.g., "Whom can you count on to list openly and uncritically to your innermost feelings") or with whom would be a support in a stressful situation (e.g., "Whom can you really count on to be dependable when you need help"). These questions were written more generally than the SSI.

The Relationships: Close Friends subscale had the highest correlation to the SSQ, followed closely by the Relationships: Family subscale. This makes sense because the content of the support items is similar in both of these subscales. The question items within these two subscales broadly touch on a family member or friend's ability to provide the person time, encouragement, attention, love and develop a strong bond. Therefore, like the SSQ, the Relationships: Family and Relationships: Close Friends subscales touch on a similar construct of support and what it means to have a good relationship whether it be friends or family.

By contrast, the School and Work Environment subscale had the weakest correlation to the SSQ. When you compare the question items in both the SSQ and the School and/or Environment subscale this makes sense since many of the support items in the subscale do not address concepts that related to a good relationship or a support person. The support items in the School and Work Environment subscale are more so interested in what constitutes a supportive environment and this construct of support is not present in the SSQ. Therefore, in future studies it would be best to use alternative criterion measures that measure environmental support.

There were both weak and weak-to-moderate correlations between the support items in WSESS subscales and the SSI, however only the Relationships: Family, Relationships: Close

Friends and Spirituality subscales are in line with the second major hypothesis. As previously mentioned, the items within the SSI were far more specific in nature. Items within the SSI were specific actions that one takes to show support in a relationship. For example, calling one up for a chat or invites you to a party or for a dinner. These items were divided into emotional support, informative support, instrumental support and social companionship (Timmerman, et al., 2000).

The support items from the Relationships: Family subscale had the highest correlation to SSI. The reason for this may be due to the content of the questionnaires differing in their level of specificity. Whereas the Relationships: Family support items from the WSESS have a broader nature, the items from the SSI are very specific. In their detail the SSI may miss the broader themes of love and developing a bond, which can be expressed in variety of ways other than those expressed in their items. Again, the School and Work Environment subscale also had a weak relationship to this criterion measure. This is likely due to the same reasons as discussed above in our discussion of its poor relationship to the SSQ.

4.3.3. Life Stressors

There were moderate correlations between the stressor items in the WSESS subscales and the Life Stress Scale and these were in line with the second major hypothesis. Items with the LSS had the participants answer what their level of stress was in a variety of stressful situations (i.e., physical environment, relationships, health, education and finances). Interestingly, both the Health subscale and Home Environment subscale were tied for having the highest correlation to the LSS. Like the LSS, the Health subscale does address concerns regarding physical and mental health. Likewise, Home Environment also includes items that address access to health care, relationship with ethnic/racial groups, neighbourhood environment (e.g., safety, cleanliness, noise, pollution, graffiti). It was unsurprising that the Acquaintances subscale had the lowest correlation because much of the content was too broad (e.g., disrespect, being ignored) and did not coincide with the same understanding of stress found within the LSS.

The correlations between the stressor items within the WSESS subscales and the Social Readjustment Rating Scale were much smaller than the LSS and were not in line with the second major hypothesis. Items within the SRRS conceptualized stress through a series of events that had a different stress “weight” to them. For example, a vacation would have a different level of stress than the loss of a spouse. These items would account for different types of stress that one

encounters over a person's life span. Therefore, it could be difficult for our younger participants to find this questionnaire relate able if they have encountered all of these types of stressful events.

In terms of the WSESS, the stressor items within the Relationships: Family subscale had the highest correlation amongst all of the subscales. When one compares the scales, there are some similarities between the items. In particular, the Relationships: Family subscale does cover subject matter like health concerns, erratic behaviour and negative family relations. This coincides with similar items found in the SRRS, such as divorce, change of health of family member, trouble with the in-laws, and change in the number of family gatherings. Unsurprisingly, the Home Environment subscale was found to have the lowest correlation to the SRRS and once again this can be attributed to dissimilar content between the two.

4.4. Limitations & Future Research

4.4.1. The Sample

While students provide an inexpensive and readily available source of data, undergraduate research pools are often overrepresented by women, freshman, and psychology majors (Barlow & Cromer, 2006). Unsurprisingly, the sample for this study is mostly white, single female, and heterosexual. Evaluating a new questionnaire is often a multi-step process that requires multiple revisions and reassessment across a range of settings and groups (Squires et al., 2011). For this reason, the present study should be interpreted as an initial first step for future research. The methods and results reported here remain relevant and informative, but there needs to be more recruiting of diverse samples for future validation studies beyond the university landscape.

4.4.2. Potential Data Loss

Another potential limitation of the study may be the way in which the questionnaire was set up in Qualtrics. When designing the questions in Qualtrics, skip logic was utilized in the Relationship section of the WSESS questionnaire. The three Relationship sections (Family, Close Friends and Acquaintances) had a condition in which if a participant did not have any members of these groups alive in the past five years, that this section would be skipped. As indicated in Table 12, both the Acquaintances support and stressor items saw the lowest valid number of participant responses as well as the highest number of missing data. This means that fewer participants were completing this section. It is likely that this section may have been misunderstood. Students within a research pool may not have considered Professor, classmate(s) or a teaching assistant(s) to be

acquaintances, despite that we explicitly listed these classes of people as acquaintances in the branching question. In the future, this skip over option should be removed.

Table 12

Number of Participants with Valid Data and Missing Data for Subscales

	Participants with Valid Data	Participants Missing Data
Home Finances	406	8
Family - Support	392	22
Family - Stressor	392	22
Close Friends -Support	380	34
Close Friends - Stressor	370	35
Acquaintances - Support	359	55
Acquaintances - Stressor	359	55

4.4.3. Item Order Effects

The results may have also been influenced by item order effects within the WSESS (Dickison et al., 2012). In the current layout of the questionnaire, participants first answer the traditional SES questions before going onto to answering questions about Home Finances, Home Environment, Family, Close Friends, Acquaintances, School and Workplace, Health and lastly, Spirituality. It is unclear as to whether, for instance, the distance between Home Environment and School and Workplace, both environmental subscales by nature, influenced the participants ability to answer the questions differently. Future studies should rearrange the order of the subscales to evaluate whether item order effects have any impact on the results.

4.4.4. Further Tests of Reliability and Validity

As previously mentioned, scale validation is a multi-step process that requires several different analyses. For that reason, it would be advisable to engage in additional tests of reliability and validity for scale validation. To further evaluate the construct validity of the WSESS subscales, it would be important to compare them to other existing criterion measures. Future studies should also use different types of scales to evaluate the discriminant validity of the WSESS scales in order to check that the subscales are accurately measuring the construct.

In addition to additional tests of validity, our reliability assessment was limited to tests of internal consistency. Future studies on the WSESS questionnaire should also investigate its

stability through test-retest reliability (Squires et al., 2011). This can be done by comparing the results of this study with results of a separate study when the questionnaire is run once again.

4.4.5. Reduction of Items

There are some concerns with the length of the WSESS (i.e. 144 items) that merit having a potential shorter version for future research use. The traditional components of SES (i.e., education, income and occupational prestige) within the WSESS consist of 30 items, however the additional subscales that make up the financial resources, social support and life stressors component are an additional 114 items. For comprehensive questionnaires with multiple scales it is not uncommon to have over 100 items. For instance, the Life Stressors and Social Resources Inventory (LISRES) is a multi-scale questionnaire with eight subscales that cover major life experience: physical health, spouse/partner, finances, work, home/neighborhood, children, friends and social activities, and extended family (Moos, Fenn, & Billings, 1988). There are a total of 209 items, and it takes approximately 30 to 60 minutes to complete.

By comparison, the WSESS questionnaire alone took participants approximately 30 minutes of the total 60 minutes for the study. Nevertheless, future studies should aim at seeing whether some items within the WSESS are redundant and should be removed in an effort to produce a shorten version of the WSESS. Item to item total correlations could be run to see whether each item within a subscale strongly correlates with the overall unity of the subscale. If an item does not have a moderate or strong correlation, then it may be removed.

4.5. Implications

The manner in which we collect SES data needs to reflect a new understanding. In addition to asking questions about the traditional domains of SES, the WSESS took it one step further by including items relating to measures of wealth, as well as mediating factors of SES, life stressors and supportive resources. With the inclusion of these novel constructs, the WSESS can add to the existing literature by developing a broader understanding of how certain mediating factors impact one's life across the socioeconomic spectrum.

While SES is an important factor for psychologists to consider for research, it also has considerable importance for the therapeutic setting. For instance, psychological stress, as it relates to factors of SES such as poverty or job insecurity, have the power to exacerbate mental and physical health, and this has been demonstrated in a large body of research as summarized in the APA's report on Socioeconomic Status (APA, 2007). Nonetheless, very few researchers have tried

to understand SES in the context of therapeutic research (Hopps & Liu, 2006). Therefore, it comes as no surprise that many psychologists struggle to understand how to apply a client's SES to therapy, assessment, or intervention (Wyche, 2005). The WSESS, with its integration of traditional SES factors, as well as social supports and life stressors could be an invaluable questionnaire to assist psychologists in getting a better grasp at their patient's complex lives and for developing more appropriate treatment methods for the client.

The WSESS could help hospital administration and policy designers better understand how individuals may or may not be able to successfully access their facilities and programs. Research has shown that life stressors and the feeling of being in lower SES can play an important role in explaining one's access to health care facilities and programs (Adler, 1994). This can be problematic because this means those who are in need may not able to get the full assistance they require. Furthermore, if the meeting criteria for programs only focus on the traditional criteria for lower SES, they often miss many of those individuals who, while may not meet the criteria for lower SES, are in rather serious states of deprivation (Grundy & Holt, 2001). It is in this state of deprivation too that, a lack of access to resources, can lead to poor health outcomes. Going beyond the traditional factors of SES and considering the life stressors that can lead to a state of deprivation would be a good predictor for health for health care systems and programs to use (Grundy & Holt, 2001). In this way, the WSESS would be an invaluable source to understand the level of deprivation a family may be experiencing and types of resources they are being deprived of that programs can target.

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Appendix A: Scale Distributions

Figure 1

Density Distribution of the Average Scores for Home Finances Subscale

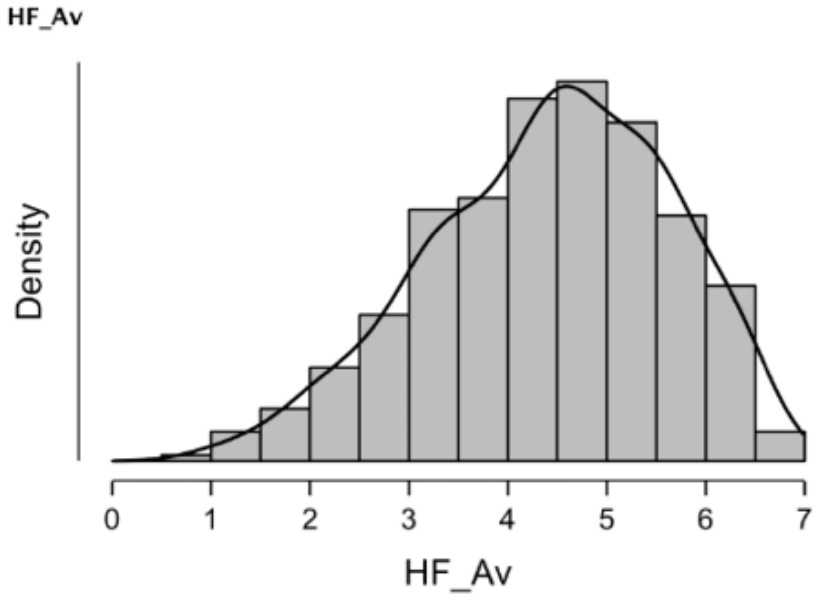

Figure 2

Density Distribution of the Average Scores for Support Items in the Home Environment Subscale

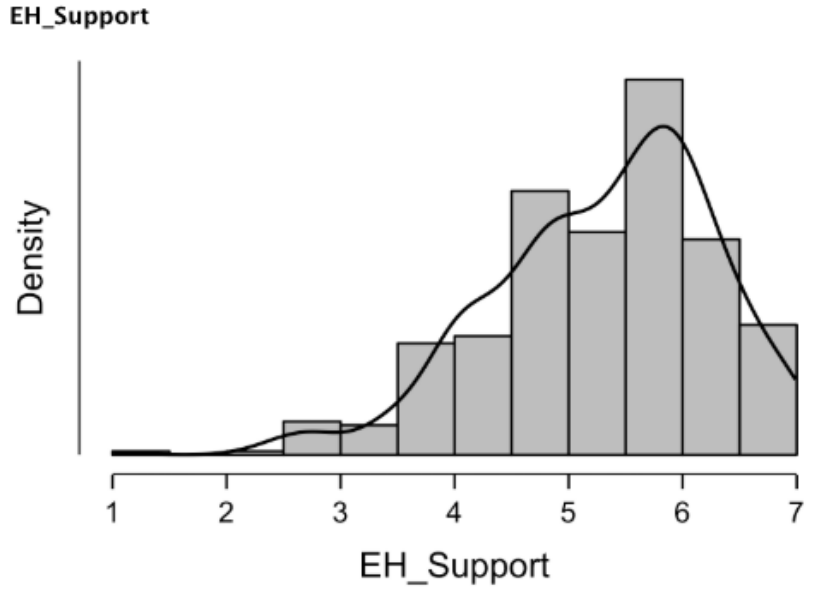

Figure 3

Density Distribution of the Average Scores for Stressor Items in the Home Environment Subscale

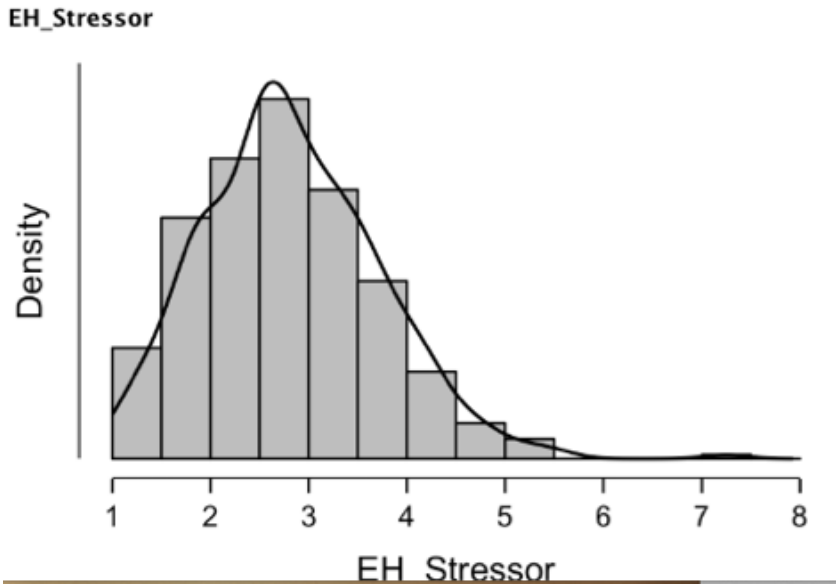

Figure 4

Density Distribution of the Average Scores for Support Items in the Relationships: Family Subscale

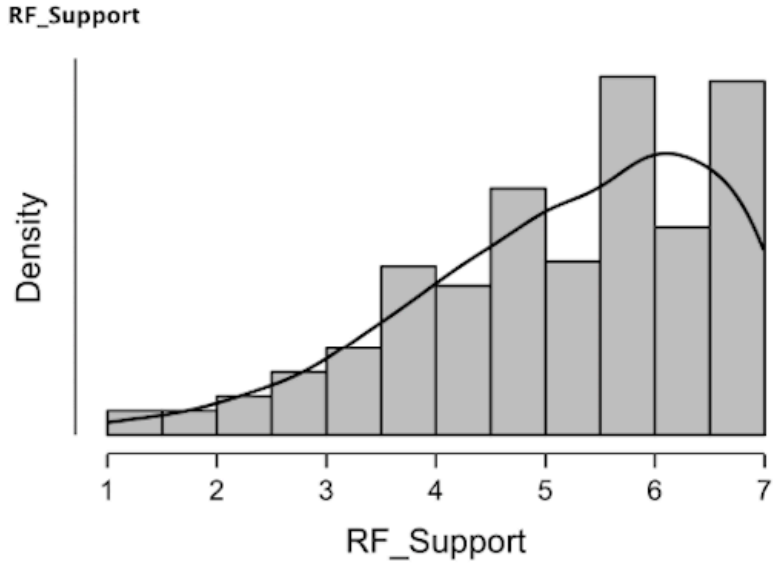

Figure 5

Density Distribution of the Average Scores for Stressor Items in the Relationships: Family Subscale

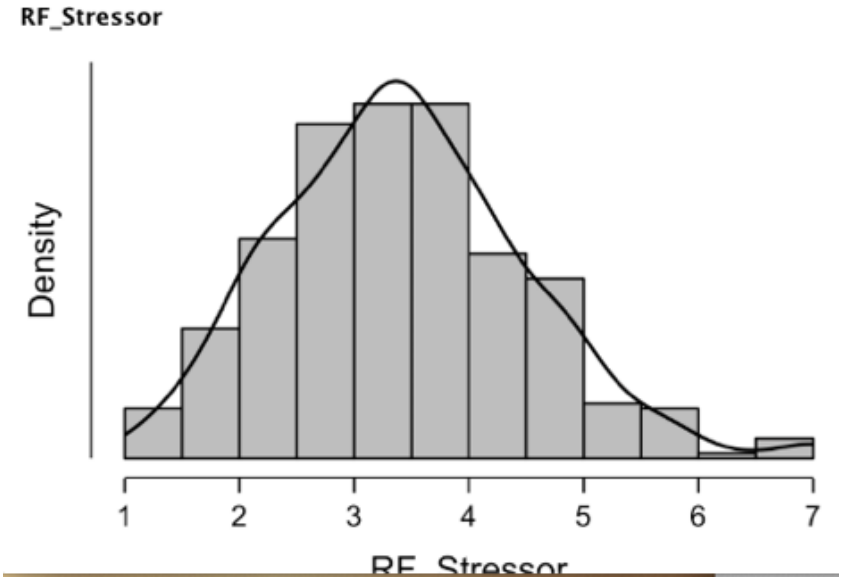

Figure 6

Density Distribution of the Average Scores for Support Items in the Relationships: Close Friends Subscale

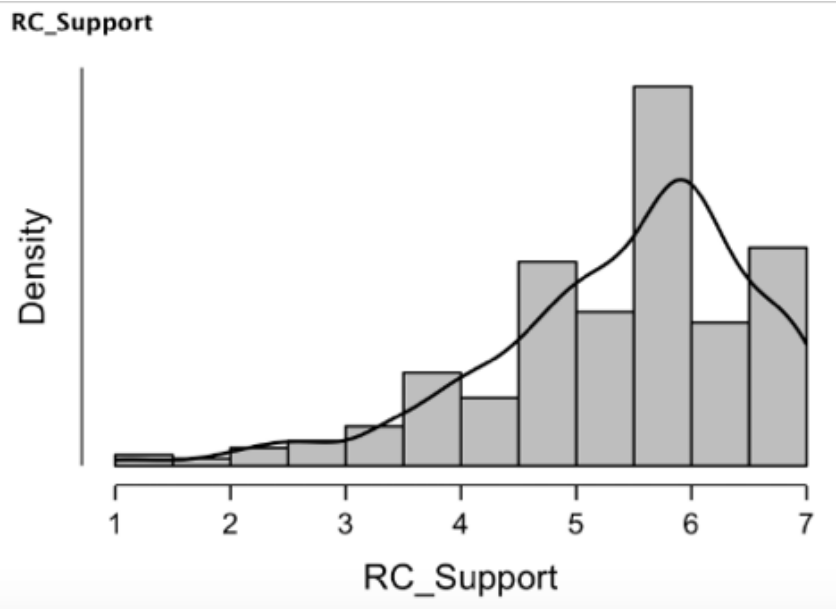

Figure 7

Density Distribution of the Average Scores for Stressor Items in the Relationships: Close Friends Subscale

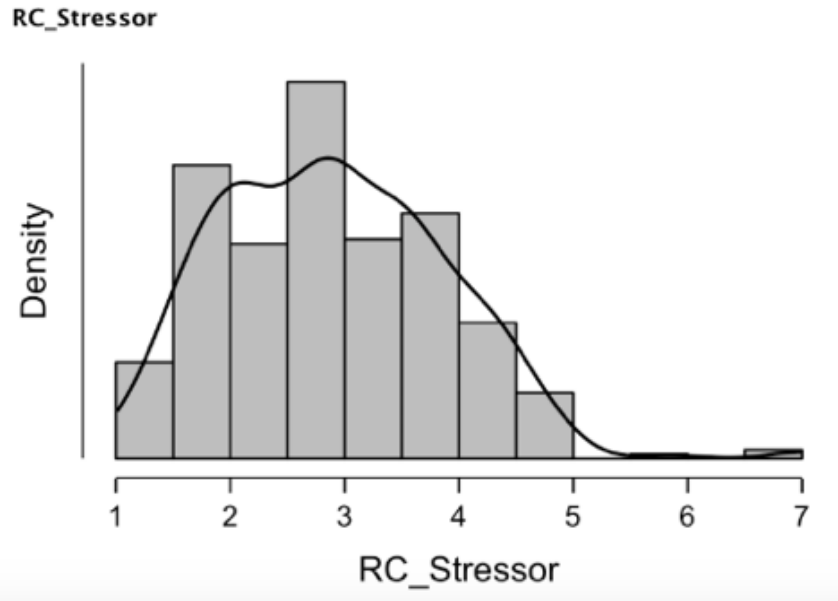

Figure 8

Density Distribution of the Average Scores for Support Items in the Relationships: Acquaintances Subscale

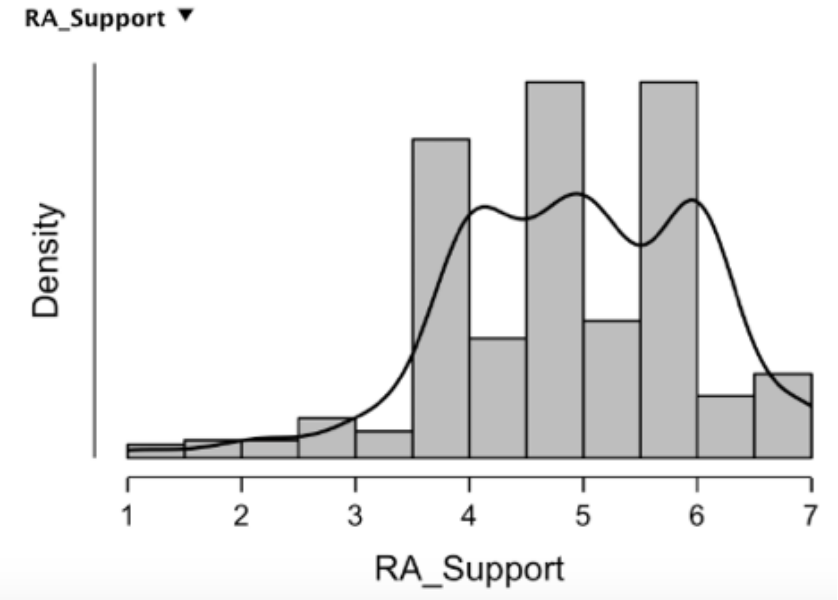

Figure 9

Density Distribution of the Average Scores for Stressor Items in the Relationships: Acquaintances Subscale

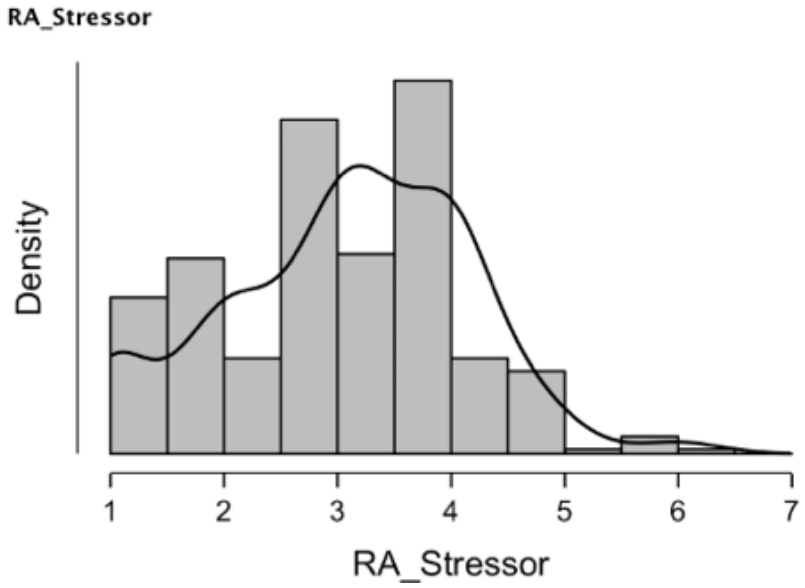

Figure 10

Density Distribution of the Average Scores for Support Items in the School and/or Work Environment Subscale

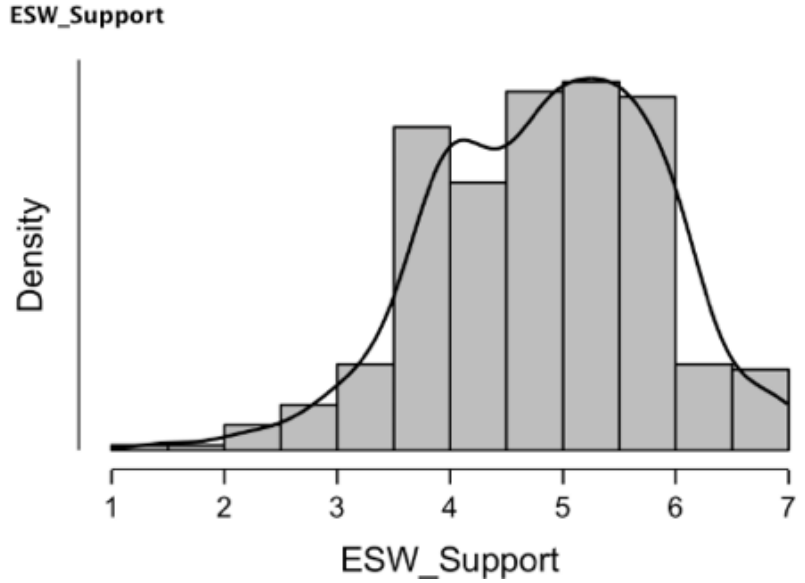

Figure 11

Density Distribution of the Average Scores for Stressor Items in the School and/or Work Environment Subscale

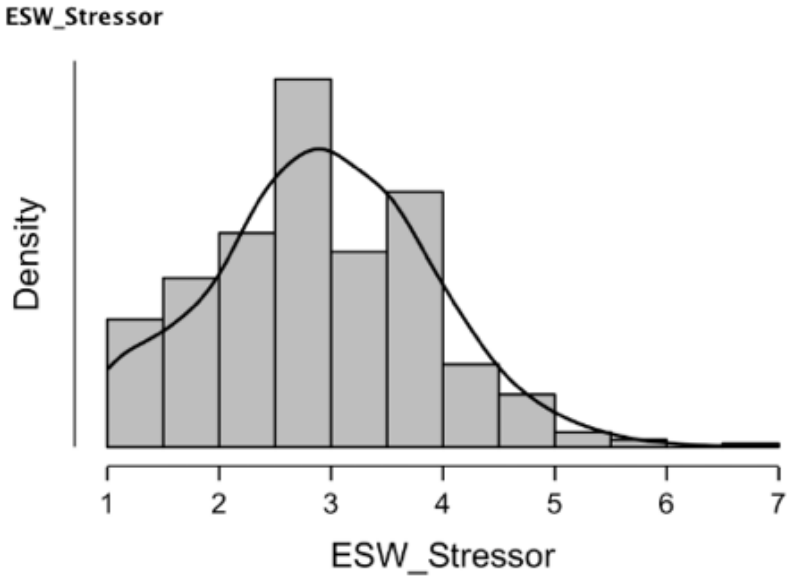

Figure 12

Density Distribution of the Average Scores for Support Items in the Health Subscale

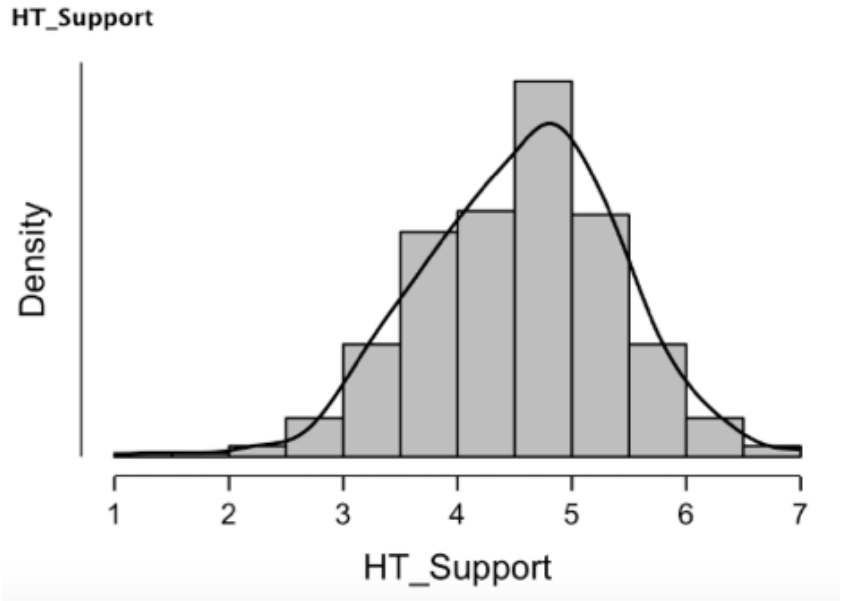

Figure 13

Density Distribution of the Average Scores for Stressor Items in the Health Subscale

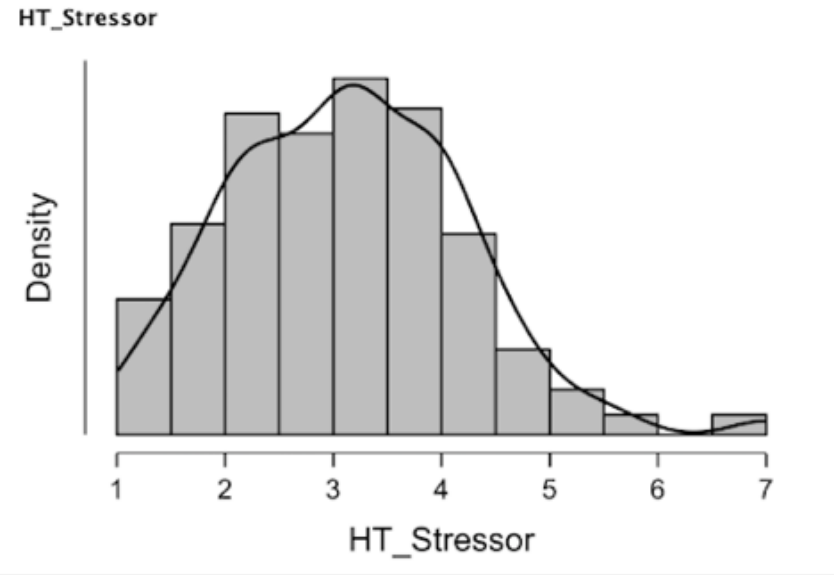

Figure 14

Density Distribution of the Average Scores for Support Items in the Spirituality Subscale

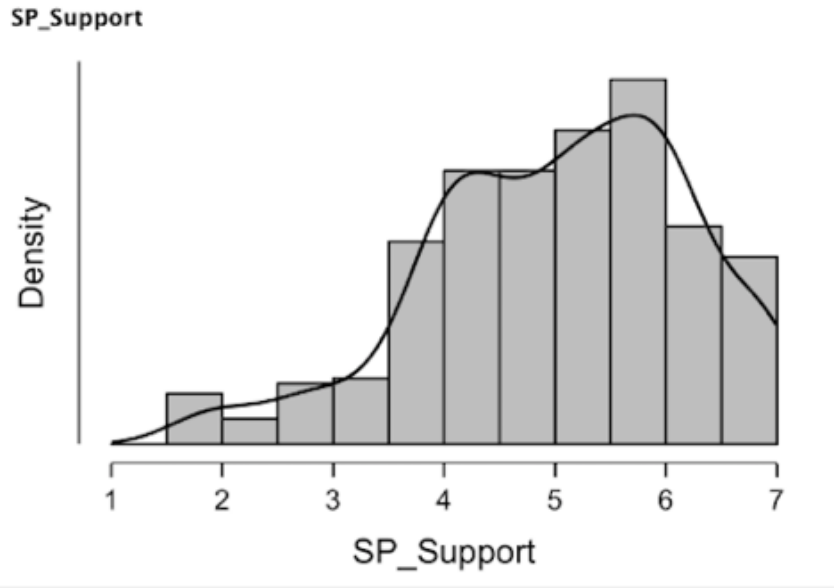

Figure 15

Density Distribution of the Average Scores for Stressor Items in the Spirituality Subscale