A Closer Look at Factors Influencing Self-Esteem: Associations with Depression, Disordered Eating, and Global Self-Esteem

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Abstract

Low self-esteem is a risk factor for various psychological disorders, including depression and eating disorders (EDs). Many factors (e.g., quality of relationships, personal achievements, physical appearance) may influence an individual's global self-esteem, and these factors, as well as their relative impact on self-esteem, vary from person to person. Those with EDs tend to rely on shape and weight as the primary determinant of their self-esteem. However, there is limited research exploring self-esteem composition for those with non-eating-related psychopathology. Additionally, there is limited literature investigating the effects of basing self-esteem on factors other than shape and weight. To help fill this gap in knowledge, we recruited undergraduate students (N = 537) between the ages of 18-25 from Simon Fraser University, in Burnaby, Canada. Participants completed the SAWBS, alongside questionnaires about their mental health. Findings showed that basing a larger portion of self-esteem on intimate or romantic relationships was related to fewer symptoms of disordered eating. Basing self-esteem on competence at school and work was related to fewer symptoms of disordered eating as well as higher self-esteem. Further, basing a larger portion of self-esteem on personality, friendships, or personal development was related to better mental health. Findings from this study may be used in the development or refinement of self-esteem interventions, allowing clinicians to maximize intervention effects by providing specific areas for interventions to target.

Keywords: *self-esteem, eating disorder, depression, mental health, young adults.*

Introduction

Thoughts and feelings about self-worth are dependent on simultaneously operating factors, including but not limited to the quality of personal relationships, personal achievements, and physical appearance (Serpell et al., 2007). However, disproportionally basing self-esteem on certain factors may be detrimental to mental

health; for example, basing self-esteem largely on shape and weight is related to a higher level of disordered eating symptoms (Geller et al., 2000; 1998; 1997; Serpell et al., 2007). Additionally, preliminary research suggests that basing self-esteem on certain appearance-unrelated factors (e.g., competence at school, work, and other activities) may be related to positive mental health outcomes (Geller et al., 2002).

Global self-esteem refers to an individual's overall cognitive evaluation of themselves and their worth as a person (Orth & Robins, 2014; Shi et al., 2024). In comparison, domain-specific self-esteem refers to an evaluation of oneself in a particular area of life, such as academics or sports (Gong et al., 2023). Both global and domain-specific self-esteem can fluctuate to some degree on a short-term basis, as an individual shifts through emotional states or experiences different life events (Clasen et al., 2015; Van Doeselaar & Reitz, 2022). However, in the long term, self-esteem is a relatively stable trait over an individual's life (Orth & Robins, 2013). The factors that contribute to one's global self-esteem (i.e., physical appearance, quality of relationships) and the amount of influence each factor has varies from person to person (Fairburn, 2008). Low global self-esteem has been identified as a risk factor for various psychological disorders (Guo et al., 2022; Pelc et al., 2023; Steiger et al., 2014); further, a longitudinal study found that low global self-esteem in adolescence predicted depressive symptoms two decades later (Steiger et al., 2014). Additionally, cross-sectional research shows that low self-esteem positively correlates with frequency of binge eating, exercise to influence appearance, and ED treatment (Pelc et al, 2023). Nevertheless, there is little research on the effects of basing self-esteem on appearance-unrelated factors, or self-esteem composition in individuals with non-eating related psychopathology. Thus, the present study investigates whether basing a larger portion of self-esteem on specific factors is related to symptoms of disordered eating, depression, or global self-esteem.

Self-Esteem and Depression

Depression refers to a cluster of symptoms including sadness or irritability, incapacity to experience joy or pleasure (anhedonia), fatigue, and troubles concentrating, that lead to a significant impairment in daily functioning (American Psychiatric Association, 2022; Orth & Robins, 2013). A vast amount of literature has investigated the relationship between depression and low global self-esteem and found that the two are intimately related: low self-esteem predicts depression, and depression predicts low self-esteem (Orth & Robins, 2013). This relationship has emerged in samples of adolescents (Burwell & Shirks, 2006; Orth et al., 2014) and college students (Shi et al., 2024); longitudinally over two decades from adolescence to adulthood (Steiger et al., 2014; Steiger et al., 2015); across individuals born in the US, Mexico, and Hong Kong (Orth et al., 2014; Yang et al., 2018); and in those with severe mental illness (Shahar & Davidson, 2003). The relationship between depression and self-esteem has also been supported for domain specific self-esteem, with negative perceptions of one's own physical appearance and academic competence predicting greater depressive symptoms (Steiger et al., 2014).

Self-Esteem and Eating Disorders

EDs are a group of psychological disorders that involve significant and persistent disturbances in eating and weight control behaviours that lead to an impairment in daily functioning, both physically and mentally (American Psychiatric Association, 2022). The cognitive behavioural model of eating disorders (CBT-ED) proposes that all eating pathologies share one core mechanism: an overvaluation of shape and weight (Trompeter et al., 2021). In other words, the self-esteem of an individual with an ED is largely determined by their current body weight and shape. Although different EDs are characterized by distinctive behaviours, all of these behaviours are underpinned by the same cognitive distortion. This overvaluation of shape and weight maintains disordered eating over time (Dalle Grave, 2010).

It is well established in psychological research that low self-esteem and ED symptoms predict one another reciprocally (Colmsee et al.,

2021; Krauss et al., 2023; Pelc et al., 2023). Furthermore, research investigating the specific mechanisms contributing to the low levels of self-esteem found in individuals with EDs provides support for the CBT-ED model. Some of this research uses the SAWBS, which measures the extent to which shape and weight contribute to one's feelings of self-worth (Geller et al., 1997; Serpell et al., 2007). To complete this inventory, participants (1) choose from a list of personal attributes that contribute to their self-esteem (e.g. their competence at school/work, the quality of their friendships, their body weight), (2) rank order the chosen attributes from most to least influential on their opinion of themselves, and (3) divide a pie chart into sections, with the size of each pie slice representing the significance of one attribute to their overall self-esteem (Serpell et al., 2007). The SAWBS score refers to the angle of the pie slice representing shape and weight, measured in degrees (Geller et al., 1997). It is theorized that the SAWBS pie chart of a healthy individual contains many small pie pieces, meaning that many different factors contribute to their self-esteem (Fairburn, 2008). Thus, if any one factor is negatively affected it has a relatively small impact on their global self-esteem level.

However, individuals with EDs tend to have a disproportionately large pie slice dedicated to weight and shape; thus, if an individual with an ED is not happy with their current weight and shape, it will have a large impact on their global self-esteem (Geller et al., 2000; 1998; 1997; Serpell et al., 2007). One study found the average SAWBS score in a sample of women with EDs was 145 degrees, compared to 60 degrees in the control group (Geller et al., 1997). This in turn limits the area of the pie that other factors can occupy (i.e., other slices are smaller in size, and there may be fewer of them) (Fairburn, 2008). The large SAWBS scores found in individuals with eating disorders corroborates the overvaluation of weight and shape posited in the CBT-ED model and may explain the common occurrence of low self-esteem in individuals with EDs.

Given that the SAWBS was developed specifically for research on EDs, there is limited research exploring the factors that contribute to self-esteem in individuals with other psychological disorders. Cambron and colleagues (2008) provide preliminary research suggesting that basing self-esteem on interpersonal relationships is a risk factor for depression in women, but not men. However, contrasting this, Woodward and colleagues (2014) found that depressed women tended to undervalue interpersonal relationships. They also found that depressed women overvalued outward appearance and undervalued being a good person. These contrasting findings may be due to sample differences between the studies, or the difference in direction of the relationship analyzed (i.e. depression vs. self-esteem as the risk factor). It may be the case that both findings are true at different times: individuals who overvalue personal relationships may be at risk of developing depression if the quality of their relationships does not meet their standards in the area. This is supported with research showing that poor relationship quality predicts a higher risk of depression 10 years later (Teo et al., 2013). In later stages, depressed individuals may compensate by decreasing the importance they put on personal relationships to determine their self-esteem, given their failure to 'succeed' in this area. This would explain Woodward et al.'s (2014) finding. However, this explanation is purely speculative; no further studies have been done to clarify these contrasting results. Regardless, these studies both do suggest that the factors influencing one's self-esteem may play an important role in non-eating-related psychopathology as well as EDs.

Although there has been much research on the weight and shape component of self-esteem, our knowledge of the holistic composition of a SAWBS pie chart, both in healthy and clinical populations, is limited. Some research by Woodward et al. (2014) and Geller et al. (2002) suggests that factors other than shape and weight may be related to ED symptoms. Woodward and colleagues (2014) found that women with EDs significantly undervalued intelligence, academic performance, and their personality. Further, in a cross-sectional sample of female high school students, Geller and colleagues (2002) found that having a larger SAWBS pie slice dedicated to competence at school and other activities was related to lower ED symptomatology. They also found that having a larger SAWBS pie slice dedicated to intimate relationships was related to greater ED

symptomatology and lower self-esteem (body and global); however, these findings are yet to be replicated. Thus, exploring the role of self-esteem composition in psychological disorders other than EDs, as well as investigating all components of the SAWBS rather than focusing solely on shape and weight, could improve our understanding of the foundations of low self-esteem and refine clinicians' ability to prevent or improve it.

Current Study

The present study seeks to address these gaps by exploring the relationship between various factors influencing self-esteem and mental health. More specifically, this study investigates whether variations in the influence of the seven appearance-unrelated SAWBS factors[1] (intimate or romantic relationships, competence at school/work, personality, friendships, personal development, competence at activities other than school/work, and other) on self-esteem are associated with variations in depression, ED symptoms, or global self-esteem levels. Based on preliminary findings in the literature, our hypotheses were as follows:

(1) Basing a larger portion of self-esteem on intimate or romantic relationships will be related to greater symptoms of depression and disordered eating, and lower global self-esteem.
(2) Basing a larger portion of self-esteem on competence at school, work, and other activities will be related to fewer symptoms of depression and disordered eating, and higher global self-esteem.

Methods

Participants

Participants were undergraduate students recruited through Simon Fraser University's (SFU) Research Participation System (RPS) between September 2023 and December 2024. Participants received course credit in compensation for their time. Students were excluded from participation if they were older than 25 or younger than 18, as the study aims to investigate factors contributing to self-esteem specifically in young adults. Young adults were chosen as the population of interest due to the high rates of psychopathology in this age group (Jurewicz, 2015; National Institute of Mental Health, 2024). Additionally, participation was not possible for individuals who did not have access to a laptop or desktop computer and a stable internet connection, as the study took place online and the final portion of the questionnaire was not compatible with a smartphone.

The final sample consisted of 537 participants. A power analysis was conducted using GPower, confirming that this sample size provided more than sufficient power to detect an effect with the planned analyses. Participants ranged from 18-25 years of age (M = 19.2, SD = 1.5). The sample was female-dominated, with 63.5% (n = 341) of participants self-identifying as women, and 35.9% (n = 193) as men. Most participants identified as Asian (South, East, or Southeast; 55.7%, n = 299), White (26.8%, n = 144), Middle Eastern (5.2%, n = 28), or multiracial (5.2%, n = 28). Detailed demographic characteristics of the sample are summarized in Table 1.

[1.] The SAWBS contains 11 factors total. Only seven were chosen for investigation in the current study because they are the only appearance-unrelated factors in the SAWBS. The remaining four appearance-related factors are shape, weight, face, and muscularity.

Table 1. *Participant Demographics*

Characteristic		*n*	%
Gender Identity			
	Woman	341	63.5
	Man	193	35.9
	Nonbinary, Agender, or Genderqueer	2	0.4
	Did not report	1	0.2
Race/Ethnicity			
	Asian	299	55.7
	White	144	26.8
	Multiracial	28	5.2
	Middle Eastern	28	5.2
	Hispanic/Latin American	15	2.8
	Black	7	1.3
	First Peoples/Indigenous	5	0.9
	Other	10	1.9
Sexual Orientation			
	Straight	399	74.3
	Bisexual or Pansexual	67	12.4
	Questioning or Unsure	25	4.7
	Gay or Lesbian	16	3.0
	Asexual	13	2.4
	Queer	8	1.5
	Prefer not to answer or did not respond	7	1.3
Yearly Household Income			
	Unemployed or Disabled	21	3.9
	Under $10,000	36	6.7
	$10,000-30,000	44	8.2
	$31,000-50,000	23	4.3
	$51,000-75,000	27	5.0
	$76,000-100,000	52	9.7
	$101,000-200,000	82	15.3
	Over $200,000	31	5.8
	Don’t know, prefer not to answer, or did not respond	221	41.1

Procedures

The present study was approved by the SFU research ethics board. The study was advertised on SFU’s RPS as a survey about self-esteem, mental health, and eating and exercise behaviours. Participants completed the survey online. When a student signed up for the study, they were given a five-digit participant number (SONA ID) and were instructed to follow a link to a survey in Qualtrics.

After completing an informed consent form, participants completed a demographics questionnaire followed by a series of validated questionnaires in Qualtrics inquiring about their mental health, eating behaviours, and thoughts and feelings about their body.

The current study is part of a larger study investigating the psychometric properties of the SAWBS – Online Version; thus, participants also filled out further questionnaires that were not included in analyses for the present study. Upon completion of the questionnaires, participants were instructed to follow a link to an external website where they filled out one additional interactive measure: The SAWBS-Online (Geller et al., 1997; White et al., 2025).

Finally, participants were given a debriefing form, which included relevant mental health resources.

Materials

Demographics Questionnaire

All participants completed a demographics questionnaire, which collected information about their age, gender identity, sexual orientation, race/ethnicity, country of origin, household income, relationship status, height, weight, and mental health diagnoses. Most questions used multiple choice type responses, with options to choose 'other' or type in a customized response where relevant. Questions about participants' country of origin, height, and weight had open text box responses. All questions had a 'prefer not to answer' option, except for age, to ensure that all participants met inclusion criteria (i.e., were 18-25 years old).

Shape and Weight Based Self-Esteem Inventory

The SAWBS (Geller et al., 1997) is an interactive measure of self-esteem. It was originally developed as a paper-and-pen measure, but the present study used an online adaptation, developed by White and Zaitsoff (forthcoming) to allow participants to take part in the study remotely. The SAWBS measures the extent to which various factors contribute to an individual's global self-esteem level. These factors were chosen based on previous self-esteem measures identifying main dimensions of self-esteem and feedback from female graduate students on the relevance of factors to their own self-esteem (Geller et al., 1997). The output of the SAWBS takes the form of a pie chart, with each pie slice representing a personal attribute that is important to how a participant has felt about themselves in the past four weeks (e.g., competence at school/work, quality of friendships, body weight). In prior research using the SAWBS, the primary outcome of interest has been the SAWBS score: the angle of the pie slice dedicated to shape and weight (e.g., Geller et al., 2000; 1998; 1997; Serpell et al., 2007). However, the current study did not have one specific SAWBS factor that is of primary interest; instead, the study looked at the percentage of the SAWBS pie chart that each appearance-unrelated factor took up. The SAWBS has demonstrated strong psychometric properties in samples of Canadian adults with and without eating disorders (Geller et al., 1997; 1998), female high school students (Geller et al., 2000), and in adolescent British girls (Serpell et al., 2007). However, in each of these studies the SAWBS score was the primary variable of interest. The psychometric properties of the SAWBS as it is used in the current study are yet to be investigated.

Center for Epidemiologic Studies Depression Scale

The Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977) is a 20-item self-report questionnaire to assess symptoms of depression in the general population. Participants respond to items on a 4-point Likert-type scale (1 = "Rarely or none of the time, less than 1 day," 2 = "Some or a little of the time, 1-2 days," 3 = "Occasionally or a moderate amount of the time, 3-4 days," 4 = "Most or all of the time, 5-7 days") about how often they have felt a certain way during the past week (e.g., I was happy). The CES-D is one of the most commonly used screening instruments for depression and has well-established psychometric properties. The CES-D has demonstrated good reliability and validity in both clinical and non-clinical samples, and cross-culturally (Fountoulakis et al., 2001; Radloff, 1977; Ruiz-Grosso et al., 2012; Shafer, 2005). In the present study, the CES-D demonstrated excellent internal consistency (α = .914).

Eating Disorder Examination Questionnaire

The Eating Disorder Examination Questionnaire (EDE-Q; Fairburn & Beglin, 1994) is a widely used 28-item self-report measure of eating disorder symptomatology adapted from the Eating Disorder Examination (Cooper & Fairburn, 1987; Fairburn & Cooper, 1993). Participants are asked about their eating behaviours and body image concerns over the past four weeks (e.g., "Have you felt fat?"; "Have you gone for long periods of time without eating anything in order to influence your shape or weight?"). Question response types include 7-point Likert-type scales and numerical response text boxes to specify frequency of behaviours where relevant (e.g., "How many times have you eaten what other people would regard as an

unusually large amount of food?"). The psychometric properties of the EDE-Q have been thoroughly investigated, and it has been deemed a reliable and valid measure for the assessment of ED symptoms (Aardoom et al., 2012; Berg et al., 2012). In the present study, the EDE-Q demonstrated excellent internal consistency (α = .955).

Rosenberg Self-Esteem Scale

The Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965) is a 10-item measure of self-esteem. Each item consists of a statement to which participants indicate their agreement on a 4-point Likert-type scale (1 = "Strongly Agree," 2 = "Agree," 3 = "Disagree," 4 = "Strongly Disagree"). Five items are positively worded (e.g., "On the whole, I am satisfied with myself"), and five are negatively worded (e.g., "I feel I do not have much to be proud of"). The RSES is a widely recognized measure of self-esteem, and the psychometric properties are well established. The RSES has demonstrated high levels of reliability and validity across diverse samples, including community samples across Canada and the United States, a clinical sample diagnosed with anxiety and/or depression from Buenos Aires, and adults diagnosed with schizophrenia in Indonesia (Gongora & Casullo, 2009; Monteiro et al., 2021; Muslih & Chung, 2024; Ruddell, 2020; Sinclair et al., 2010). In the present study, the RSES demonstrated good internal consistency (α = .869).

Data Analysis

Data Cleaning

After data collection was complete, survey responses were screened to ensure eligibility requirements were met. Responses were omitted from the final analyses if: 1) a SONA ID was not provided, 2) the participant's age was not provided, or their age was less than 18 or more than 25, 3) the participant did not reach the end of the Qualtrics survey, 4) the SAWBS was not completed, or 5) the response had the same SONA ID as another response in the dataset (in this case the participant's first full completion of the survey was retained, and all other responses were removed). 537 responses met eligibility requirements and were retained in the final analyses.

Prior to running analyses, descriptive statistics of all study variables were examined to ensure values were within range, and that means and standard deviations were plausible. The dataset was then screened for missing data, as well as multivariate outliers. Little's Missing Completely at Random test demonstrated that data was indeed missing completely at random X2 (74) = 74.80, p = .45. Thus, pairwise deletion was used to handle missing data. Multivariate outliers were identified using Mahalanobis distances. Nine outliers were identified. However, given that the scores of all outliers fell within a plausible range for all measures, there was no further evidence that these scores were not valid; thus, all outliers were retained in the dataset.

Assumptions and Assumption Checking

Data was analyzed using multiple linear regression. The assumptions for linear regression analyses include: 1) independence of observations, 2) linearity of mean, 3) homoscedasticity, and 4) normality. Assumptions one through three were checked using residual plots and assumption four with Q-Q plots. The dataset satisfied all assumptions.

Results

Descriptive Statistics

Descriptive information about participant's self-esteem pie charts is depicted in Table 2. Participants endorsed between 1-10 factors, with a mean of 7.42 factors. The most often endorsed SAWBS factor was 'competence at school/work', with 90.3% of participants including this factor in their pie. The least endorsed SAWBS factor was 'other', where participants entered their own SAWBS factor in an open response text box. Only 5 participants (0.9%) endorsed this factor. Participant mental health demographics are depicted in Table 3.

Table 2. *Self-Esteem Determinants Using the SAWBS*

SAWBS Factor	Endorsed Piece		Size of Slice[a]	
	n	%	M	SD
Competence (school/work)	485	90.3	21.4%	15.9
Friendships	462	86.0	13.0%	9.6
Personality	461	85.8	13.2%	9.3
Face	428	79.7	11.6%	8.6
Personal Development	403	75.0	13.1%	10.6
Shape	396	73.7	12.2%	9.0
Competence (not school/work)	382	71.1	9.2%	7.1
Weight	337	62.8	12.5%	12.2
Relationships (intimate or romantic)	366	68.3	16.4%	12.9
Muscularity	263	49.0	8.7%	8.5
Other	5	0.9	32.2%	27.8

[a] Average size of the SAWBS slice for those who endorsed this factor on their pie.

Table 3. *Mental Health Demographics*

Construct	Diagnosis (past or present)		Measure	Possible Range	Score	
	n	%			M	SD
Depression	112	20.9	CES-D	0-60	22.0	11.7
Eating Disorder	103	18.7	EDE-Q	0-132	39.6	30.8
Self-Esteem	N/A	N/A	RSES	0-30	14.7	6.1

Hypothesis Testing

Multiple linear regression analyses were used to examine hypotheses. Predictor variables were the seven appearance-unrelated SAWBS factors selected by participants when creating their self-esteem pie charts: intimate or romantic relationships, competence at school/work, personality, friendships, personal development, competence at activities other than school/work, and other (open text box response). These are continuous variables, representing the percentage of each participant's pie chart occupied by the specified factor. Dependent variables were CES-D scores, EDE-Q scores, and RSES scores, respectively. An alpha level of 0.05 was used to determine significance. Results are presented in Table 4.

Depression

The SAWBS factor of personality was predictive of scores on the Center for Epidemiologic Studies Depression Scale (CES-D), with larger slices predicting lower levels of depressive symptoms. The remaining six SAWBS factors did not demonstrate significant relationships with depression ($p > .05$).

Disordered Eating

The SAWBS factors of competence at school/work, personality, friendships, personal development, intimate/romantic relationships, and competence at activities other than school/work were predictive of scores on the Eating Disorder Examination Questionnaire (EDE-Q), with larger SAWBS slices predicting lower levels of disordered eating. The SAWBS factor of 'other' did not demonstrate a significant relationship with disordered eating ($p > .05$).

Table 4. *Multiple Linear Regression Output*

Scale	SAWBS Factor	β	SE	*t*	*p*
Depression (CES-D)					
	Competence (school/work)	-.062	.034	-1.802	.072
	Personality	**-.139**	**.057**	**-2.443**	**.015**
	Friendships	.034	.054	.643	.520
	Personal Development	-.041	.052	-.790	.429
	Relationships (intimate or romantic)	-.037	.042	-.874	.383
	Competence (not school/work)	-.105	.070	-1.498	.135
	Other	-.078	.143	-.542	.588
Eating Disorders (EDE-Q)					
	Competence (school/work)	**-.448**	**.088**	**-5.102**	**<.001**
	Personality	**-.495**	**.143**	**-3.459**	**<.001**
	Friendships	**-.335**	**.139**	**-2.415**	**.016**
	Personal Development	**-.449**	**.129**	**-3.489**	**<.001**
	Relationships (intimate or romantic)	**-.362**	**.110**	**-3.295**	**.001**
	Competence (not school/work)	**-.422**	**.180**	**-2.339**	**.020**
	Other	-.490	.329	-1.492	.136
Self-Esteem (RSES)					
	Competence (school/work)	**.037**	**.018**	**2.062**	**.040**
	Personality	.040	.030	1.365	.173
	Friendships	.045	.028	1.594	.112
	Personal Development	.010	.027	0.376	.707
	Relationships (intimate or romantic)	-.013	.022	-.605	.545
	Competence (not school/work)	.025	.037	.685	.493
	Other	-.017	.068	-.248	.805

Note: Bold text indicates statistical significance at the $\alpha = 0.05$ level. CES-D = Center for Epidemiological Studies Depression Scale, EDE-Q = Eating Disorder Examination Questionnaire, RSES = Rosenberg Self-Esteem Scale.

Global Self-Esteem

The SAWBS factors of competence at school/work was predictive of scores on the Rosenberg Self-Esteem Scale (RSES), with larger slices predicting higher global self-esteem. The remaining six SAWBS factors did not demonstrate significant relationships with self-esteem levels ($p > .05$).

Discussion

Prior research using the SAWBS demonstrates a clear relationship between basing self-esteem disproportionally on shape and weight and the development and maintenance of disordered eating (Geller et al., 2000; 1998; 1997; Serpell et al., 2007). However, limited research has investigated (1) the potential protective nature of basing self-esteem on appearance-unrelated factors, or (2) SAWBS composition in individuals with non-eating-related psychopathology. Furthering our understanding of the mechanisms contributing to global self-esteem levels is essential in refining our ability to prevent or improve low self-esteem. Thus, in the present study, we investigated the relationship between appearance-unrelated factors' influence on self-esteem and levels of depression, disordered

eating, and global self-esteem in a sample of undergraduate students.

Contrary to hypothesis one, findings showed that basing a larger portion of one's self-esteem on intimate or romantic relationships was related to fewer symptoms of disordered eating. Additionally, the proportion of self-esteem dedicated to intimate or romantic relationships was not significantly related to depression or global self-esteem levels. This contrasts findings from Geller and colleagues (2002), who found that basing self-esteem on intimate relationships was related to poorer mental health in adolescent girls. However, the participants in the current study are notably older (18-25 years) than those in Geller's study (13-18 years). Adolescents and adults may have drastically different ideas of, and experiences in, intimate/romantic relationships, leading to a differential effect of basing self-esteem on the same factor in each age group. Intimate relationships in adolescents have been found to act as a sort of 'training ground' for future relationships (Norona et al., 2015). These relationships are typically shorter in duration, less exclusive, less intimate (both emotionally and sexually), and provide less support than adult relationships (Furman & Buhrmester, 1992; Meier & Allen, 2009). In fact, most adolescent intimate relationships do not satisfy the requirements for an attachment relationship (Rubin et al., 2011), contrasting those in young adulthood and beyond. Given these important distinctions, it is plausible that basing a larger portion of self-esteem on intimate relationships is detrimental in one's adolescent years but not in young adulthood. This extends prior research in two ways: first, by suggesting that basing self-esteem on intimate/romantic relationships may be protective against disordered eating symptoms in university students, and second, by suggesting that a 'healthy' self-esteem pie chart may look different in different age groups. Taken further, this suggests that interventions targeting self-esteem composition should be developed and implemented with consideration of the participant's age.

Interestingly, results also showed that basing a larger portion of self-esteem on friendships (the only other relationship-based SAWBS factor), though not included in the hypotheses, was significantly predictive of fewer ED symptoms. This suggests that regardless of the actual quality of one's friendships, having a self-esteem that is largely determined by the quality of one's friendships is related to better mental health. Perhaps basing self-esteem on friendships leads individuals to put more effort into developing and maintaining those relationships, thus resulting in a better-quality support network, acting protectively against ED symptoms. This finding also contradicts Geller and colleagues (2002) who found no significant relationship between basing self-esteem on friendships and ED symptoms. This may too be reflective of the different roles that relationships play in these two age groups. Like romantic relationships, friendships look different in adolescence versus adulthood. In childhood and adolescence, friendships are often based around shared activities and interests. However, in the transition from adolescence to adulthood, friendships begin to revolve around mutual trust, and fulfillment of emotional needs such as support, security, and intimacy (Blieszner & Roberto, 2004). Thus, this suggests that basing self-esteem on friendships plays a protective role only during stages of life when friendships provide a deeper level of reliable support. Future research should further explore differential effects of SAWBS factors across the lifespan.

Further, basing a larger portion of self-esteem on competence at school/work was related to fewer symptoms of disordered eating and higher self-esteem, and basing a larger portion of self-esteem on competence at other activities was related to fewer symptoms of disordered eating. These findings lend partial support to our secondary hypothesis and corroborates Woodward and colleagues' (2014) finding that undergraduate women with disordered eating symptoms tended to undervalue their academic performance. However, it is important to note that sample demographics may play a role in these findings. Both Woodward and colleagues (2014) and the present study used a sample comprised of students who had been successful in their application to a university, and thus who are at least somewhat competent at school. This may contribute to the positive relationship found between basing self-esteem on competence at school and mental health. Interestingly, there was no significant relationship found between

basing self-esteem on competence and levels of depression. Perhaps basing self-esteem on competence is protective against certain disorders, but not others. Further research would be beneficial to explore these differential relationships and determine if basing self-esteem on competence is protective against other forms of non-eating-related psychopathology, or if this relationship is unique to eating disorders.

Two additional factors that were not included in the hypotheses for the present study emerged as predictors of better mental health. First, basing a larger portion of self-esteem on personality was related to fewer symptoms of disordered eating and depression. This finding is in line with Woodward and colleagues (2014) who found that female undergraduate students with disordered eating symptoms tended to undervalue their personality (e.g., their SAWBS pie had only a small slice dedicated to personality, or personality was absent from the pie). Second, basing self-esteem on personal development (i.e., sense of morality, ethics, or spirituality) was related to fewer symptoms of disordered eating. This SAWBS factor has not emerged as a predictor of mental health in prior research, perhaps simply due to the lack of research investigating this relationship.

Taking these findings altogether, it may be the case that basing self-esteem on factors individuals have volitional control over is more desirable than basing self-esteem on unchangeable factors. Prior research has shown that basing self-esteem on appearance-related factors (e.g. weight, shape, face, muscularity) is related to poorer mental health (Geller et al., 2002; 2000; 1998; 1997; Serpell et al., 2007), and these factors are largely determined by genetic influences that are out of our control. However, in the current study we found that basing self-esteem on six different appearance-unrelated factors was related to better mental health. These factors are all somewhat influenceable by our volitional choices (e.g., practice or rehearsal can increase competence, intentional effort can improve relationship quality). This hypothesis is consistent with prior research showing that a high sense of control is related to positive psychological outcomes, and an impairment of control is associated with poorer mental health (Davis & Burrow, 2024; He et al., 2024; Keeton et al., 2008). However, further research should be carried out to assess the accuracy of this explanation.

Strengths, Limitations, and Future Directions

A strength of the present study was the ethnic composition of the sample, with most participants identifying as Asian (South, East, or Southeast; 55.7%) and a minority as white (26.8%). This deviates from the norm in psychological research, where white individuals are typically vastly overrepresented (Roberts & Mortenson, 2022). However, there are also limitations to the study and the generalizability of results. First, the sample consisted of only undergraduate psychology students, who are not representative of the entire population of young adults in Canada. Most participants were female (63.5%), and all were more educated than the average 18–25-year-old, given their university student status. Thus, it would be beneficial to replicate the study with a non-university sample to substantiate findings. Secondly, data was collected via self-report which introduces the risk of response bias. Participants may not have answered questionnaires entirely honestly or accurately, especially given the personal nature of many of the questions. It would be beneficial to run a study in which participants receive formal diagnostic interviews to confirm their diagnoses or lack thereof, to ensure accurate diagnostic categorization and symptom profiles. Third, the study has a cross-sectional design, meaning causal attributions cannot be made. Further insights about how SAWBS composition and mental health influence one another could be gained by running longitudinal studies in this area. A further valuable extension of this research, with more direct clinical implications, could be investigating the effects of a self-esteem intervention on SAWBS pie chart composition and global self-esteem. Finally, the present study uses the SAWBS scale in a manner that has not yet been psychometrically validated. Previous psychometric studies on the SAWBS have investigated its use as a measure to assess the importance of specifically shape and weight in determining one's global self-esteem (Geller et al., 1997; 1998; 2000; Serpell et al., 2007).

However, the present study uses the SAWBS to assess the importance of seven appearance-unrelated factors in determining self-esteem. Additionally, this study uses an online format for the SAWBS (White et al., 2025), rather than the original paper and pen version. The psychometric properties of the SAWBS when utilized in this manner should be investigated in future research.

Implications

The results of the present study have important clinical implications, specifically for interventions targeting global self-esteem. Insights gained may aid in the development or refinement of self-esteem interventions, with the goal of increasing a patient's dependence on SAWBS factors associated with lower levels of mental health symptomatology. This technique is already a common practice within the cognitive behavioural treatment of eating disorders; clinicians guide their patients through the creation of a self-esteem pie chart and discuss the potential implications of the chart's composition (Fairburn, 2008). Often, this includes recognition of the patient's overvaluation of weight and shape, which is associated with ED symptomatology (Geller et al., 2000; 1998; 1997; Serpell et al., 2007). From here, patients work to decrease their dependence on weight and shape to determine their self-esteem by decreasing behaviours such as shape checking and frequent weighing, as well as increasing their dependence on other factors by engaging in new activities (Fairburn, 2008). The goal is to help patients develop a self-esteem pie chart that more closely resembles a healthy individual. The present study contributes to the evidence base for this treatment, suggesting that basing self-esteem on appearance-unrelated factors is related to better mental health outcomes. Additionally, results suggest that helping patients increase dependence on certain non-appearance-related factors may be more beneficial than others, depending on what the intervention is targeting. For instance, it may yield more desirable results to focus on increasing reliance on personality for those with depressive symptoms, but on competence at school/work for those with low global self-esteem. However, longitudinal research should be carried out to confirm a causal relationship between these variables before therapies are altered or implemented.

If a causal relationship is indeed found, the information learned about factors influencing self-esteem and mental health could be further used to inform the development of preventative interventions. Programming that teaches strategies to develop a 'healthy' self-esteem pie chart and increase reliance on the three areas that emerged as predictive of better mental health could be disseminated to individuals at a young age in the hopes of increasing children/adolescents' resilience and decreasing the development of psychopathology in the population.

In summary, the present study extends research by suggesting that appearance-unrelated factors are relevant to the treatment of eating disorders, and that the factors we base self-esteem on may be relevant to non-eating-related disorders, such as depression. These findings highlight important areas for future research to expand on, perhaps eventually leading to the development of new interventions to increase global self-esteem levels in individuals with a diverse array of mental health concerns.

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