

The Development of Self Esteem in Children: Systematic Review and Meta-Analysis

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Abstract

Background/Purpose: This study is aimed at providing a comprehensive acknowledgement of various factors that play a significant role in developing, shaping and affecting the self-esteem in children, and identifying relationships among its fundamental factors and their effects on studies conducted on children's self esteem, including social economic status (SES).

Method: A thorough and properly organized research was conducted across (various platforms) to extract and analyze reliable and comparable data on children psychology, their self-esteem needs, underlying characteristics and changes in personality and behaviors in different children. The study resulted in a literature review and meta-analysis (including regression analysis) that investigated fundamental self-esteem factors and importance of their effects on children's personalities.

Results: A total of 20 studies were selected out of which 16 had only general age categorization instead of specific age references (of children). Hence, Children were divided in categories due to lack of this data. They were grouped in preschool, kindergarten and grade 1 according to the availability of respective data and age range.

Literature review and meta-analysis were combined to reach the final conclusion. Limitations to methods and research base were identified. Age of children was found to be the most significant factor in the development of self-esteem needs and its affects impacted children more as their age grew. Different studies found different continuous variables to be affecting esteem differently, however, certain factors including age factor produced similar results.

Conclusion: All selected studies on children's self esteem showed positive correlation and similar relationship to effects of different underlying factors, age, SES, sample sizes and methods for data collection. Studies also happened to be most affected by age and sample sizes and showed dramatic effects on overall results with even slight changes in their respective values.

Background

Self-esteem has been one of the fundamental topics of psychological studies since Maslow categorized it as the fourth basic necessity of human nature for needs and motivation following physiological, safety and love. He described self-esteem of an individual as his/her desire to get respect and recognition [1]. Since its introduction many scholars and psychologists have debated its importance, worth and practical meaning and to this day it remains one of the most debated topics of human psychology [2]. Gough, Fadden and McDonald while laying down the basic research grounds for self-esteem state that due to the fact that self-esteem of a person is influenced by education and allied social sciences, the research on the most influential esteem factors starts in the early childhood and because a lot of scholars agree to this theory, most of the studies conducted so far concentrate on the development of social needs and psychology at a very young age [3]. However, no practical study has so far proven school environment and formal educational curriculum to be a radical factor in self-esteem development and cognitive structure.

Validating the findings discussed above, Thoits debates that self-esteem when properly nurtured in the young children can help them cope with stressful situations and respond positively to mentally challenging and distress events [4]. He states that self-esteem protects children and adolescents from negative consequences of tough and mentally stretching affairs. Findings show that self-esteem, social self-concept, and self-concept are inter-related as far as the child's academic life and performance are concerned [5,6]. Research has also been done on gifted children regarding fluctuations of self-esteem and

its different effects [7]. The results show positive relation with other studies. A child's self-concept of his own worth and competence has been revealed to significantly relate to social coping and is found to be effective for the child's achievement levels in school [8,9].

Background

Defining Self-Esteem

Although Maslow defined self-esteem to be a person's desire for respect, recognition and attention, there is still no universally accepted definition of this psychological phenomenon. Almost all the researchers and scholars agree on its importance and different factors constituting it, however, many still differ on the underlying definition of self esteem and influence of different components [10,11]. Even though there exists an enormous ambiguity regarding a common self-esteem definition, the most accepted theory regarding it is given by Hewitt in which he states that self-esteem is a belief of an individual

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which encompasses self evaluation and self realization of his/her own true worth [12]. He goes on further to demonstrate the differences found in his study suggesting that people with high self-esteem incline to be self-evaluative whereas those with low self-esteem tend to endorse an external evaluation.

Children

Self-esteem of children is rather difficult to define, but a skeleton definition of it relates to the level of satisfaction or dissatisfaction that a kid has about himself/herself [13,14]. Children with extremities of talents who are perceived as either “smart” or “not smart” often have high levels of self-esteem [15,16]. Indeed, the relationship between academic achievement and self-esteem has also been established to be positive [17,18]. Self-esteem also plays a significant role in students' participation in schools and formal activities as those with high self-esteem appear to be more active and enthusiastic than those with low self-esteem [19,20].

Even though self-esteem is not directly related to classroom performance, it is still very influential as classroom participation is largely based on a child's view of his own worth. Patrick argues that students who perceive themselves as efficient and competent often participate more in the classroom than those who don't see themselves with the same efficiency [21]. According to him children with high self-esteem tend to be extrovert, confident and risk takers whereas those with low self-esteem are likely to be introvert, shy and limited to their own boundaries and spaces. It also affects their voluntary participation.

Critical Review of Literature

Literature review was a fundamental part of this study as the standards adopted during this stage were to decide the quality, quantity and subject criteria of resources for this thesis. Hence an open mind was kept during the extraction and analysis of data collection.

As discussed time and again throughout this text the importance of children psychology and their self-esteem, the major keywords of literature research were children's psychology, self-esteem and development factors, and only those works were reviewed which dealt with children's self-esteem exclusively. For this purpose different database, indexes and peer reviewed journals were assessed. During the assessment it was found that almost all the study results accept the importance of positive self-esteem in children and link it to their overall wellbeing, confidence, intelligence, activity and positive role in the society whereas negative self-esteem was found to be the root cause, or as in some studies a major factor in introverts, children with inferiority complex, unconfident children, those exhibiting signs of low activity and intelligence and those with impracticable social roles [4-9].

The effects of these findings in the existing studies were crucial to decide the variables for this study. Meta-analysis was to be used to make conclusions on key factors affecting children's self-esteem, and for this reason it was important to have the right studies in place so they can be compared on the same scale. Although the results of these studies described similar effects on children self-esteem, the factors and the reasons defined for those effects were pretty much different. Therefore it was important to select compatible studies with right variables and proper scale to analyze and deduce our conclusion regarding fundamental factors.

Some authors pointed out parental issues to be the root causes of positive or negative self-esteem [22]. Children who did not get enough attention and care from their parents were likely to grow up to be the outcasts of the society and imperfect in social communities [23]. Other scholars stated emotional connection to be a major concern as those children who were not easy to assess due to lack of emotional connection exhibited negative self-esteem's growth. They mostly blamed parenting, genetics or underlying medical causes for this issue [24]. Another reason given by some scholars was the community and peer effect on cognitive brain. They stated that lack of natural ability in some kids to make and maintain friends, communicate positively and constructively with others and indulge in team work resulted in the development of negative self-esteem [25]. They attributed community and social environment as the cause for such problems.

Due to the presence of such diverse arguments and various reasoning, only those studies were selected for meta-analysis that were consistent in objectives, methods, analysis mechanism and fundamental factors with each other and suitable for meta-analysis.

Controversial Theories

Development process of self-esteem, as argued by a lot of scholars is somewhat controversial in its essence. It goes by saying that self-esteem of children remains constant throughout their life [26]. This theory suggests that self-esteem that is developed in the early childhood is likely to remain the same and constant throughout an individual's life and is contributed to primarily by parents, and assisted by peers and teachers [27,28]. Research studies based on this theory also suggest that early childhood experiences shape the self-esteem of children and the beliefs developed at this stage are likely to stay the same even in the later stages of life [29].

Differing from the above discussed theory and studies, many scholars and researchers found in their studies that self-esteem remains subjective throughout human lifecycle and can change anytime, where transition can take place either in days or years depending on the subject (individual), his surroundings and circumstances [30-32]. This highlights another important aspect in self-esteem debate according to which self-esteem can vary greatly among children who are brought up in the same environment and in almost identical ways with only natural or unforeseeable differences. Their underlying causes can be the very nature of human beings which differ naturally or those small differences that exist due to the social-economic placement in family and society. Other factors include differences in intensity and complexity of interactions with others. There can be a lot of different or even unlimited factors that might influence a child's esteem development but the idea remains debatable with studies varying in results and findings.

Development Factors in Children

Over the course of human psychology self-esteem has remained an elementary part of every study and experiment. However, since Maslow's theory of human psychology and motivation, researchers have directed their studies solely concentrating on radical factors of self-esteem and their implications [33]. Only then it was discovered that our mind starts developing our esteem infrastructure and maturity level from a very young age, and then some scholars started to argue that it was the very young age when mind develops a proper self-esteem and finishes the phenomena after a certain age,

making it the only development phase, however this concept remains controversial and debatable [34].

A child's brain is home to various activities and development processes that are likely to lay down the fundamentals of who he is going to be once he grows up [35]. One of these processes is cognitive phenomena of self-esteem during which a child develops his/her self perception and values that he believes to be his worth in society [36].

Orth and Robins argue that esteem development processes happen in phases and once the first phase is complete, the rest will follow accordingly [14]. Arguing their case on account of their studies, they establish that the initial self-evaluation of a child can be positive and negative and correspondingly would affect all future evaluations in the light of the first one. Hence it is essential to provide all resources and assistance to kids so their first self impression can be positive as it is essential for their mental wellbeing as well as confident personality, whereas first negative evaluation is likely to result in mental distort, social boycott and nervous personality.

Positive self-esteem acts as a protective shield against the negative experiences that a child goes through across his/her lifespan [37]. Even in situations that require high resiliency, a child's positive self-esteem is an advantage [38]. Many psychological health problems at their root are connected to a damaged or negative self-esteem. Disorders like Anorexia Nervosa, or the onset of addictive behaviors are a result of insecure self-esteem, which does not only effect these individuals but also people surrounding them and the environment surrounding them [39].

Fundamental Factors

As described above, self-esteem of kids can be developed, affected and shaped due to various or may be unlimited factors. Hence it is only practicable to identify and investigate the most important fundamental and effective factors. Since Maslow's theory of motivation many researchers have studied a list of factors to find evidence on radicals of esteem development, however all studies' findings remain subjective and vague. It can be justified that due to a huge amount of factors there is no standard or universal solution to this problem [39], but still with correct estimations, evaluations and proper methodology, many major aspects of esteem development process can be assessed in order to craft a framework for positive esteem development of children [40].

Significant Factors: Surroundings play one of the most significant part in the development of a child's esteem. Home, members of family, peers and school all make an important part of children's surroundings and it is obvious that all these factors play a significant role in their self-esteem development [41]. Moreover, a kid's esteem is likely to be affected by almost all events and incidents he/she goes through in their home and school, and from interactions with their peers and family members. Eventually all these events result in affecting their esteem and end up making themselves believe about their value what they see others believing rather than what their true potential and worth is. This can have devastating effects on mental health of children and can prove to be catastrophic as they grow old.

As a child's time which corresponds with the initial esteem development phase completely revolves around their parents, parenting is the most influential of all surrounding elements as compared to peers and community. Particulars of a child's esteem are greatly influenced by the parenting style that a child experiences [42]. The four styles of parenting are authoritative, authoritarian, permissive

and neglectful. The children of permissive parents are found to have the highest levels of self-esteem, whereas children of authoritarian and neglectful parents have lowest levels [43]. The results of these studies however are unclear as authoritative and neglectful behaviors are completely different to each other with similar end results on children esteem. Hence it is still unbound which parenting style is favorable for the development of positive self-esteem.

Effects of all the discussed esteem factors can be realized by studying the effects on children and their mental competence. A child's social competency is determined by a number of factors such as decreased alternative thinking, increased impulsivity, lesser empathy and heightened emotionality [44]. In the long run, it is crucial to analyze the strengths and weaknesses of the child's behavioral cognitive aspects. Weight has been given to the child's cognitive aspect because it is associated with the child's attribution style [45]. Cognitive development also influences the child's socio-emotional development which is responsible for self-control and conflict management. Most children with cognitive dysfunctions have adjustment problems, especially in the social domain and show diminished resilience. In addition to adjustment problems, these children also display ineffective problem-solving skills and inability to deal with negative events [46].

Earlier, it was hypothesized that there is a positive correlation between the creativity and behavioral problems in children, however, our results found both positive and negative correlations. On the other hand, though, recent studies show that positive self-esteem acts as a protective shield against behavioral problems [33]. High self-esteem is positively correlated with enriched mental health, good adjustment, and overall life happiness. Children who have high self-esteem tend to internalize their problems whereas children who have low self-esteem tend to externalize them [47]. Self-esteem levels also determine the depression and anxiety levels in the children [47].

Method

This meta-analysis is based on the data and study methodologies established by renowned scholars and scientists on children's self-esteem factors, following the guidelines of International Journal standards.

Meta analysis offers a lot of benefits with a few disadvantages. As it gives skew-free results and samples can be tested and projected to estimate the effects of findings on the whole population to be valid or not, hence providing a time saving and cost effective method of analyzing data from various sources [48]. It also enables usage of both clinical and experimental information. Keeping this in mind, a number of versatile and diverse sources and research components were used to aid this research project.

On the other hand, retrieved data and sources for practical examination can be publication biased due to the inclination of the researcher and their methodology. Apart from this, there is also a possibility that the selected data can be outdated or representative of biased arguments making it incompatible with a neutral research. Thus, leaving the research vulnerable to highly skewed results which mean some of the advantages offered by meta-analysis would be lost.

Search Strategy

Objective: The study revolved around defining self-esteem factors, aspects and prospects in children, how different underlying factors

influence results of unanimous factors. Main objectives include fundamental factors affecting child's self esteem, relationship among different factors and reliability of established studies and experiments.

The main objective of the study is to investigate the relationship between convergent validity and discriminant validity both of which are reviewed. The study also focuses on the interaction between the characteristics of the participants and the influence of factors on the reliability of the scale. The final question of this study is whether the method of data collection has an impact on the reliability of the scales or not?

Keywords: Various sources were researched for reliable, compatible and diverse data resources. Keywords used to obtain relevant information were self-esteem, children(s) self-esteem and Children psychology. Other related sources were also investigated relating to self-concept, self- image and self perception of children, which were common research factors of all researched data.

Sources: The primary sources for the literature review were online psychological journal databases, Social Science Citation Index and other peer reviewed journals. Other inputs included bibliographical sources from the included articles and books. All reviewed articles were tested for required variables and compatibility with objectives in question and only qualifying articles, journals and datasheets were selected for analysis. Following were the main databases that were searched for data/resource extraction.

- PsychINFO
- EBSCOhost
- Proquest Psychology Journals
- SGE Journals
- PsycTESTS

Filters: In order to condense the database search to only relevant and appropriate data extraction, filters were deployed to make research stage economic, efficient and effective. Following filters were used.

- Children
- Children Psychology
- Children Cognitive behavior
- Children Self-esteem, self image, self perception
- Esteem development in children

To make the research diverse and free from geographical bias, only those studies were selected which appeared to have geographically wide data subjects (not constrained to a small area sample) with children under study belonging to different norms, environments, social classes and locations. The only thing constant was children, any studies containing adolescents subjects were discarded.

Inclusion and Exclusion Criteria for the Study

Inclusion criteria for the study

1. The study accommodates at least one aspect of the self. The scale includes items that could question the evaluation of the self as either desirable or undesirable.

20. The scale is an exclusively children-only scale conducted on children aged between four and seven.
21. The scale is tested for the case of internal reliability which is inclusive of Cronbach's Alpha reliability, Split-half reliability, and Kuder-Richardson reliability.
22. The sample size is reported in the text of the study.

Exclusion Criteria for the study

1. Twenty studies didn't adhere to the definition of self-esteem and were not included.
2. Eighteen studies were discarded because the age criteria were not met.
3. Two studies did not have reliable data and were discarded. The studies for which the psychometric properties of the tools could not be collected were also discarded.
4. Studies constituting any research factor other than children like adolescents or adults were also discarded.

The final phase of the literature review was crucial as it gathered the psychometric properties. The name of the scale, study, and the author were used as the keywords during the search. If the psychometric properties were unavailable, the data from the original study was used. Out of the 20 studies used, 8 provided adequate information about the psychometric properties and data from the original study was used for the other studies.

Methodology Quality

In order to ensure that the quality of all 20 selected articles met the requirements of agenda, a proper coding system was adopted. An experienced coder was designated to validate the authenticity and reliability of the selected items by using a 36 items code sheet, mainly categorizing the items according to different qualitative factors. In order to facilitate the compatibility for the coded sheet, an initial rater was used who rated the agreeableness of data at 84%.

In order to establish a proper structure to this approach, variable factors were categorized as dichotomous and variability coefficient was used as a discriminant factor. In the absence of convergent validity, reliability was analyzed in depth including that of internal consistency, which is a measure of correlation between scale and components.

Measurement Criteria

In order to measure the specifics of selected study for reliability, statistical analysis was used. Reliability refers to the consistency of the results yielded by the instruments in the study [49].

To measure the reliability of data and its interaction with the proposed scale, selected data sets were divided into two halves, correlated accordingly and covariance calculated. The covariance was calculated in two different ways, namely by calculating split-half reliability and alpha coefficient. Analyses were conducted twice to see if the split-half reliability varied from the coefficient alpha value which suggested that the correlation value was 0.86. A t-test was performed comparing the means of both the alpha coefficient and the split-half reliability and they were not found to be significantly different from one another and the difference was negligible. However, as the alpha coefficient is a better measure of accurate reliability [50], it was taken into account.

Variables	Sample	Mean	Standard Deviation	Kurtosis	Skewness	In-between Range	Variables	Sample	Mean	Standard Deviation	Kurtosis	Skewness	In-between Range
Reliability*	20	0.79	0.13	2.31	-1.31	0.36-0.94	Reliability*	30	0.77	0.14	1.31	-1.09	0.36-0.94
Age	20	5.59	0.68	-0.68	-0.29	4.5-6.5	Age	30	5.37	0.78	-0.81	-0.18	3.8-6.5
Measure Design	20	1.36	1.36	0.22	.99	0-4	Measure Design	30	1.46	1.38	-0.45	0.74	0-4
Number of Items	20	26.32	16.1	0.20	0.78	4-64	Number of Items	30	26.9	15.5	0.41	0.97	4-64
Publication Year	20	1996	8.9	-1.09	0.32	1975-1998	Publication Year	30	1981	8.2	-1.15	0.16	1972-1998

Table 1(a): showing the Initial Analysis of Calculated Mean, Standard Deviation, Kurtosis, Skewness and Ranges for the Continuous Variables

Table 1(b): showing the Alternate Analysis of Calculated Mean, Standard Deviation, Kurtosis, Skewness and Ranges for the Continuous Variables.

The initial and alternate meta-analysis constituted samples of 20 and 30 elements respectively, representing the population (statistical sampling) and were subjected to measurement of means, standard deviation, kurtosis, skewness and the range of values utilizing alpha co-efficient and split half reliability, reliability being the most critical assessment variable.

The reliability coefficients were obtained in three different ways, Cronbach's method, Kuder-Richardson method, and Hoyt's method. However, the methods yielded more or less similar results. Out of the scales measured, the Eder and Eccles scales did not have a significant alpha coefficient. Therefore, the mean reliability represented in the means of the subscales and its items did not bias the study.

Following the statistical analysis of initially defined variables including, reliability, age, publication, measure design and number of data items, the same procedures were applied on dichotomous variables to measure the correlation among test items. The difference in results was also negligible and is presented in the tables 2 (a) and (b).

Variables	Frequency	Percentage	Kurtosis	Skewness
Setting School (1)	27	90	6.32	-2.81
Non School (0)	3	10		
SES Middle Class (0)	17	77	0.56	1.4
Low Income (1)	6	20		
Scale Type Likert/Rating (0)	11	37	-1.78	-0.85
Dichotomous (1)	19	63		
Methodology Pictures (0)	24	80	0.53	1.59
Questionnaires (1)	6	20		

Table 2 (b): showing the Values of Alternate Analysis showing the Frequencies, Percentage, Kurtosis and Skewness for Dichotomous Variables.

Variables	Frequency	Percentage	Kurtosis	Skewness
Setting School (1)	20	21	8.09	-3.06
Non School (0)	2	19		
SES Middle Class (0)	17	77	056	1.4
Low Income (1)	5	23		
Scale Type Likert/Rating (0)	7	32	-1.44	-0.85
Dichotomous (1)	15	67		
Methodology Pictures (0)	18	82	-1.25	1.77
Questionnaires (1)	4	18		

Table 2 (a): showing the Values of Alternate Analysis showing the Frequencies, Percentage, Kurtosis and Skewness for Dichotomous Variables.

Characteristics of Selected Study

Study: Study was analyzed in depth according the publication year and researched database and any biasness or incompetency found during the analyses was projected on the whole population of items to evaluate its significance. The results of projections were dealt accordingly.

Method: As it was established above that the main objective of this study was to study children, age was one of the most significant aspects of this study. However, it was challenging to perform this task, as 16 studies out of the 20, which were coded, contained categorized age ranges instead of specific ages of every children under study. Hence, to adequately establish age, the participants were grouped in three domains, Preschool, Kindergarten and Grade 1. This allowed the study to avoid the missing any data as all the participants fitted into one of these categories. A correlation analysis was conducted in order to establish a significant correlation of age which was found to be 0.94, and which showed p was less than 0.01. The difference between the actual age and the continuous age variable was found to be 0.50.

Measurement: The nature of the measures such as the number of items and the method used to collect data were analyzed in the measure characteristics. The primary scales used were Likert and Dichotomous scales. The study concluded that the number of response categories did not impact on the study objectives or methods of analyses, but the sample size was small. The data collection was based on methods understandable by the subjective kids, including cartoons and pictures.

Participants: The characteristics of the participants were listed in the selected studies, such as their SES (Socio Economic Status) and ethnic backgrounds. The main differentiation of the measure was self-reported or inferred. The main coding for the study was only for the studies in which children were the primary respondents.

Results

Meta analysis was conducted in SPSS by measuring correlation, regression analysis and alternate regression analysis on the data gathered throughout the project. The variables used have already been described above including reliability coefficient and other qualitative factors. As can be seen in table 1 (a) and 1 (b) the skewness of continuous variables is negative and reliability is on a high end of scale. Dichotomous variables in the meta analysis are also skewed which also exhibit skewness of predictor variables, which can be seen in Table 2 (a) and (b). Summary of findings are shown in Table 3 (a) and (b).

Type of Summary	Initial Analysis
No of studies	20
Weighed mean effect size	1.13
Weighed SD	0.26
95% CI	1.10-1.15
Min-Max	0.38-1.74
Homogeneity Q	499.26, p<0.05

Table 3 (a): showing the Summary of the Transformed and Weighed Effect size in Initial Analysis using Meta-Analysis.

Type of Summary	Initial Analysis
No of studies	30
Weighed mean effect size	1.06
Weighed SD	0.26
95% CI	1.05-1.09
Min-Max	0.38-1.74
Homogeneity Q	637.38, p<.001

Table 3 (b): showing the summary of the Transformed and Weighed Effect size in Alternate Analysis using Meta-Analysis.

During the analysis and alternate analysis sample sizes were found to be of great significance as they affected the results of meta analysis to a great extent, unlike esteem development factors. This fact made it important to select the most suitable sample having properties with the highest resemblance to that of subjective population. This was done using correlation technique.

Correlation

In order to establish the common grounds among different sets of data with respect to continuous variables, statistical analysis was conducted to determine correlation, which was then used as descriptors in the meta analysis. There was a positive correlation between different continuous variables. The age showed positive correlation to SES and number of items whereas the other three variables showed positive correlation to each other as well.

Regression analysis

In order to obtain insights regarding different aspects and variables of data, and to minimize the errors in quantitative assessments present in the subject data, regression analysis was used. As it is the mostly widely used method for error minimization, favored by analysts and is able to minimize errors to a great extent. It is the most appropriate

statistical technique to analyze data and remove estimated errors so the findings of the studies can be related to the underlying objectives without any hesitation.

The uniqueness of using regression analysis is that it can predict the research outcomes well in advance. The data is analyzed so as to foresee the outcomes which in turn help in research decision-making process. It also improves the objectivity of the results as it converts the raw data into more comprehensible data and also improves the quality of the results [51].

Initial Regression Analysis

Initial regression analysis was used to evaluate the reliability of variables and factors quantitatively which were used before to establish qualitative reliability. It was used to assess the reliability between predictor variables and criterion variables, showing a correlation, which established an association between those two variables. In case of more than two variables and for the assessment between categorical, continuous and criterion variables, multiple regression analysis was used. This process allowed to remove any errors in the data and deviations above standard deviations. All these analysis were conducted in a macro program of SPSS, version 16.

As a result it was found that the continuous variables with the positive correlation were the main factors determining the quality of data sets. These were age categories of children under study, Social Economic Status (SES), sample size/data items and method used to obtain information (reliability of this process has already been established above). After establishing major reliability variables for the analysis, inter correlation and relations of continuous variables with each other were then studied in detail to ascertain the lowest common variable with respect to reliability of data. It was found that age groups of students established in the start of data structuring exhibited positive correlation with two other variables, the most with sample sizes of data subjects and lower with SES. Study was unable to determine any correlation between age and method of data collection.

The reliability factor increased with the number of children. Even though the older age group's reliability remained constant, younger group's reliability increased with sample size increase, suggesting that overall study impacts are diverse in younger children. This finding can be linked to the initial development phase of self esteem where they are still only developing their self perception and hence show different results to different esteem factors.

Other variables also showed correlation with each other. Method of data extraction and SES showed positive correlation as well. Hence providing an insight that the selected data values tended to be more reliable with respect to the method of obtaining data used. It also pointed out that the method of research was proportionate to the selected studies being representative of higher SES values, making data representative of only higher social class children rather than of all classes including under privileged.

Alternate Regression Analysis

Initial analysis found a huge impact of the age on the other variables, so to avoid multi-co linearity problem or biased results, alternative regression analysis was also used for the children of all age groups. The use of covariance was not possible due to the lack of data. It was noted that the magnitude of the difference between middle and low-

income groups varied (SES), and yet there was a significant interaction between the age of the participants and the SES. There was hardly any difference in the results between the initial regression analysis and the alternative regression analysis. The main drawback was that the most studies had employed nonverbal methods for collecting data, so the correlation between the method of data collection and age could not be established. The analysis and its results are shown in Table 4 (a) and (b).

Variables	B	β	Q	95%CI Lower	95% CI Higher
Measure Design	0.04	0.18	1.36	-0.03	0.10
Setting	0.31	0.13	6.73**	0.08	0.55
Method	4.88	6.30	13.98**	2.32	7.43
SES	1.44	2.41	7.47**	0.41	2.48
Publication Year	0.00	0.14	1.00	-0.01	0.01
No of items	-0.06	-3.02	8.87**	-0.09	-0.02
Scale Type	0.01	0.02	0.13	-0.06	0.09
Age	0.16	0.30	3.69*	-0.00	0.33
SES x Age	-0.25	-2.43	6.54**	-0.45	-0.06
Method x Age	-0.83	-6.66	17.19**	-1.22	-0.44
Number of items x Age	0.01	3.56	11.00**	0.00	0.02

Table 4 (a): predicting the Reliability in the Initial Analyses with the Square Regression.

Variables	B	β	Q	95%CI Lower	95% CI Higher
Measure Design	-0.02	-0.13	1.79	-0.06	0.01
Setting	0.19	0.09	4.11*	0.01	0.37
Method	0.40	0.47	13.45**	0.18	0.60
SES	-0.10	-0.19	3.97**	-0.19	-0.00
Publication Year	-0.00	-0.01	0.00	-0.01	0.01
No of items	0.01	0.32	20.97**	0.00	0.01
Scale Type	-0.01	-0.02	0.10	0.00	0.06
Age	0.08	0.21	0.10	-0.09	0.06
SES x Age	-0.07	-0.24	16.49***	-0.11	-0.04
Method x Age	-0.16	-0.49	51.38**	-0.21	-0.12
Number of items x Age	0.01	0.03	0.26	-0.03	0.06

Table 4 (b): predicting the Reliability in the Alternate Analyses with the Square Regression.

Discussion

In the start of this study three main objectives were defined, namely fundamental factors affecting child's self esteem, relationship among different factors and reliability of established studies and experiments. To complete these objectives the meta analysis was used on a total of 20 selected studies to evaluate, quantify and construct relationships among defined factors. It was found that the basic continuous variables, children's age group, SES, number of participants and methods of analysis, all held correlation to each other either directly or indirectly (age and methods did not show correlation directly). Hence it was established that all the selected studies conducted by

different scholars showed that the results achieved were related to these continuous variables to some extent.

Linear relationship was found between age and number of participants which increased the reliability in studies with higher number of participants. Further investigation showed that number of participants held a positive relationship with methods of studies used by different scholars. This provided evidence to conclude that methods of studies' reliability increased with increase in sample sizes, making size second major continuous variable after age groups of children.

Overall it was found that the defined continuous variables played a significant role in all selected studies and meta analysis quantified their relationship in all selected studies.

Conclusion

Meta analysis and literature review allow us to conclude that whether the selected studies show promising and positive relationship with each other or not. Although all the studies selected for this analysis were conducted in a formal school setting, it is clear from the results that all studies hold true for common variables used to determine their results. Age of children, social economic status (SES), number of children participants and different methods used to assign and assess values give similar results at the end of every analysis and prove to be the most fundamental factors of evaluation of self esteem determinant factors.

On account of review and analysis it can be concluded that although different selected studies suggest different esteem factors for effects on children's self perception, including parenting, social anxiety, social life patterns and peer interaction (Zeigler-Dendy, 1995; Roe, 1998), the common fundamental factors are the same continuous variables that were established in our meta analysis. Findings include that young children are more likely to be affected by esteem factors than older ones, different age groups show similar results to different analysis mechanisms when similar information extraction methods are used and with more number of participants in each study their results grow in reliability and also show a positive relation with other studies with similar increase in numbers. Studies constituting of similar SES factors across different studies also show related effects to different esteem factors even though other continuous variables may differ to a certain amount.

Limitations

Just like every statistical analysis, meta analysis has their own limitations and restrictions. These include variations present in the data selected, used and combined with other data sets to produce results. There is also uncertainty present in every calculation due to lack of absolute correctness in data extraction and data collection procedures operated by each respective scholar during their researches.

Apart from these inherent limitations of selected statistical process, there were also some specific limitations with respect to this study. The selected studies were all conducted in the atmosphere of school setting which was a formal learning environment. This highly limited the assessment of effects of lower SES and other informal social effects. Analysis also relied on reliability coefficient more than

convergent variability and divergent variability due to lack of data, which affected the integrity on biasness of the study with respect to similar other studies. There were also some psychometric limitations in the extraction of data and specific ages of all participants were not available, hence age groups were used. Other than that correlation between method of data collection and age groups could not be estimated due to the fact that nonverbal collection methods were used in most of the selected studies. All these factors limited the findings of this study and their projection on diverse population.

Competing Interests

The authors declare that they have no competing interests.

References

- Maslow AH (1943) A theory of Human Motivation. *Psychological Review* 50: 370-396.
- Moore E, Bredekamp S (1995) Considering children's early development and learning: Towards common views and vocabulary (Report No. 95-03). Washington DC: National Education Goals Panel.
- Gough B, Fadden M, McDonald M (2013) *Critical social psychology: An introduction*. London: Palgrave MacMillan.
- Thoits PA (2013) "Self, Identity, Stress and Mental Health". In Aneshensel et al (eds). *Handbook of the Sociology of Mental Health*, Springer.
- Khan S, Gagné N, Yang L, Shapka JD (2016) Exploring the relationship between adolescents' self-concept and their offline and online social worlds. *Computers in Human Behavior* 55: 940-945.
- Hattie J (2014) *Self-Concept*. New York: Psychology Press
- Wylie RC (1989) *Measures of self-concept*. Lincoln: University of Nebraska Press.
- Jones JE, Blocher JB, Jackson DC, Sung C, Fujikawa M (2014) Social anxiety and self-concept in children with epilepsy: A pilot intervention study. *Seizure* 23: 780-785.
- Yanos PT, Markus DR. and Lysaker PH (2015) Pathways Between Internalized Stigma and Outcomes Related to Recovery in Schizophrenia Spectrum Disorders. *Psychiatric Services* 59: 1437-1442.
- Pinquart M (2012) Self-esteem of children and adolescents with chronic illness: a meta-analysis. *Child: Care Health Dev* 39: 153-161.
- Harris MA, Gruenfelder-Steiger AE, Ferrer E, Donnellan MB, Allemand M, et al. (2015) Do parents foster self-esteem? Testing the prospective impact of parent closeness on adolescent self-esteem. *Child Development* 86: 995-1013.
- Hewitt JP (2009) *Oxford Handbook of Positive Psychology*. Oxford University Press, pp. 217-224
- Kernis MH (2013) *Self-esteem issues and answers*. New York: Psychology Press
- Orth U, Robins RW (2014) The development of self-esteem. *Current Directions in Psychological Science* 23: 381-387.
- MacCann C, Roberts RD (2013) Just as smart but not as successful: obese students obtain lower school grades but equivalent test scores to non obese students. *Int J Obes(Lond)* 37: 40-46.
- Brown JD (2014) *Self-Esteem and Self-Evaluation*. In, Suls, J. (eds) *Psychological Perspectives on the Self*. New York: Psychology Press.
- Guillon MS, Crocq MA (2003) Bailey PE: The relationship between self-esteem and psychiatric disorders in adolescents. *Eur Psychiatry* 18: 59-62.
- Vialle H, Heaven PCL, Ciarrochi J (2015) The relationship between self-esteem and academic achievement in high ability students: Evidence from the Wollongong Youth Study. *Australasian Journal of Gifted Education* 24: 17-23.
- Zuffiano A, Alessandri G, Gerbino M, Kanacri BPL, Giunta LD (2011) Academic achievement: The unique contribution of self-efficacy beliefs in self-regulated learning beyond intelligence, personality traits, and self-esteem. *Learning and Individual Differences* 23: 158-162.
- Stupnisky R, Perry RP, Renaud RD, Hladkyj S (2013) Looking beyond grades: Comparing self-esteem and perceived academic control as predictors of first-year college students' well-being. *Learning and Individual Differences* 23: 151-157.
- Patrick C (2004) *How Stigma Interferes with Mental Health Care*.
- Parker H (1996) *The ADD hyperactivity handbook for schools: Effective strategies for identifying and teaching students with attention deficit disorders in elementary and secondary schools*. Plantation, FL: Specialty Press, Inc.
- Roe D (1998) *Young children with attention difficulties: How can we help?* AECA AECA Research in Practice Series 5: 1-23.
- Boehlke T (1994) *ADD: A resource guide of best practices*. Appleton Area School District.
- Ziegler-Dendy CA (1995) *Teenagers with ADD: A parent's guide*. Bethesda: Woodbine House.
- Stein JA (1988) *Self-esteem among adolescents and young adults*. UCLA
- Komblum W (2011) *Sociology in a Changing World*. London: Cengage Learning
- Alice A (2013) *Teaching a Child to read and write well*. New Delhi: PartridgeIndia.
- Lyons A (2012) *Self-esteem and learning disabilities*.
- Zeigler-Hill V (2013) *Self Esteem*. Psychology Press.
- Mruk CJJ 2006 *Self-Esteem Research, Theory, and Practice: Toward a Positive Psychology of Self-Esteem*. Third Edition. Springer Publishing Company
- City University of New York. *Educational Psychology (CUNY) 2008 A Comparative Analysis of Self-esteem, School Involvement, Family Cohesiveness and Academic Achievement in Seventh and Eighth Graders Dependent Upon Their Relative Age*. ProQuest Publishers.
- Baumeister RF (2013) *Self-esteem*, Springer science & Business Media.
- Teplin SW, Howard JA, O'Connor MJ (1981) Self-concept of young children with cerebral palsy. *Dev Med Child Neurol* 23: 730-738.
- Mischner IH, van Schie HT, Wigboldus DH, van Baaren RB, Engels RC (2013) Thinking Big: The effect of sexually objectifying music videos on bodily self-perception in young women. *Body Image* 10: 26-34.
- Sirgy JM (2015) *Self-Image/Product-Image congruity and advertisement strategy*.
- Velkoff and Huberty (1988) *Thinking Patterns and Motivation*, In, Capuzzi, D. and L.B. *Golden Preventing Adolescent Suicide*. London: Taylor & Francis.
- Abell S and Napoleon JA (2007) *Self-esteem: An Inside Job*. Inside Jobs Coaching Company.
- Spencer MB (2013) *Beginnings*. New York: Psychology Press
- Hirsh GM (1995) *Student Self Esteem: Integrating the Self*. R & L Education.
- Dunlap LL 2004 *What All Children Need: Theory and Application*. University Press of America.
- Cohen and Lotan (2014) *Designing Groupwork*. New York: Teachers College Press.
- Woolfolk AE (2005) *Educational psychology*. (9th ed.). Boston: Allyn 8: Bacon
- Duchesne S, Larose S (2007) Adolescent Parental Attachment and Academic Motivation and Performance in Early Adolescence. *Journal of Applied Social Psychology* 37: 1501-1521.
- Coleman JS, Johnstone JWC, Jonassohn K (1961) *The Adolescent Society: The Social Life of the Teenager and its Impact On Education*. New York: Free Press of Glencoe.
- Franks DD, Marolla J (1976) Efficacious action and social approval as interacting dimensions of self-esteem: A tentative formulation through construct validation. *Sociometry* 39: 324-341.
- Sowislo J, Orth L (2013) Does low self-esteem predict depression and anxiety? A meta-analysis of longitudinal studies. *Psychological Bulletin* 139: 213-240.
- Smithson M (2000) *Statistics with confidence*. London: SAGE
- Scott CG, Murray GC, Mertens C, Dustin ER (1996) Student self-esteem and the school system: Perceptions and implications. *The Journal of Educational Research* 89: 286-293.
- Watson S (1986) *Learning disabilities-definition and support*.