Factors Influencing Education Students' Perception of Aggression at a University in South Africa

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Abstract

Short description: A multivariate approach was applied focussing on perceptions of students' self, relationships and aggression. Long description: The dynamics of learning at a university from undergraduate to post-graduate is complex. Aggression is part and parcel of everyday life and learning. Knowledge management within such a context poses challenges to those involved, i.e. for student-learners, professors and management. In this paper we address students' perceptions of self, relationships and aggression. Objectives: To explore and describe the significance of differences between the perceptions of students of aggression of various groups perceiving higher versus lower intra- or interpersonal relationships and to formulate guidelines to manage perceived aggression. Method: A quantitative, exploratory and empirical research design that is multivariate inferential and descriptive was followed. A questionnaire was electronically distributed to all students in a faculty of education. It consisted of biographic, personality and aggression question items. Cronbach alpha, factor analyses, and multivariate comparisons (Hotelling T-square followed by t-tests) were used to investigate differences between groups concerning factors of aggression. The independent variables were self- love, interpersonal relationships and disconnectedness. Ethical clearance was obtained. Results: The findings reflected that when a person exhibits self-love there is a significant difference with respect to aggression. A student with self-love is less aggressive towards self and others compared to persons perceiving themselves as having less self-love. Conclusion: The challenge is to assist students to understand and manage their own perceptions of self, relationships and aggression to facilitate dynamic adult education.

Keywords: Students' perceptions, aggression, college, factors influencing

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Introduction

When one approaches a researcher-academic with a request to define the concept "aggression", one is immediately confronted with the evasiveness and complexity of defining this specific concept. In spite of this it is often obvious when looking at even a toddler in role play that it is not difficult to identify the manifestations of aggression. The difficulty to define aggression can be amongst others ascribed to the often subtle manifestations, the multi-facet-ness, and the almost dubious presentation of variability and often indirectness of approaches. Nevertheless persons are usually able to identify when aggression is presenting. In the instance of making a distinction between aggression and assertiveness we observed that persons find it troublesome, confusing and difficult to separate these two concepts from each other.

We also observed that aggression is part and parcel of everyday life. It is difficult to consider any day without aggression. Aggression is experienced daily ranging from subtle manifestations of aggression to extreme acts of contravening own or another person's human rights. If this is coupled to the fact that no person (man) according to Buber 1957 (Stanford Encyclopedia of Philosophy, 2014) is an island and that all behaviour is motivated (Cherry, 2015) one is confronted directly with the reality that to be alive is to experience aggression. One is distinctly brought to the realization that aggression can manifest in a positive manner when for example survival is at stake, but more than often in a negative and destructive manner when a person's mental health is challenged on a wide front.

Education students at a university are not isolated from the reality of the experiencing of aggression. Further, these students are preparing themselves for a career in which they will most probably be confronted daily with aggression. They will and are also experiencing their own aggression and that it can be turned on themselves or on others. Education students are and also will be in future subjected to aggression from others, such as learners in their classes, or colleagues or management and even their own friends and family members.

Aggression in the context of intra- and interpersonal relationships

Aggression manifest through relationships, whether intrapersonal or interpersonal. It is human beings within relationships that can exert or experience aggression (Mayer, 1997; Kaukiainen, Salmivalli, Bjorkqvist, Osterman, Lahtinen, Kostamo & Lagerspetz 2001). Human aggression is dependent and tapered within the context of morals, values, previous experiences, social and family contexts, traditions, religious orientation, spirituality and many more indicators that are at play where human beings interact. Thus in this regard the self and value placed on the self by an individual is central. Aspects such as self-respect, caring for oneself, having passion for oneself, and self-value is crucial (Pietersma & Dijkstra, 2012; MacDonald, 2015; Santilli, 2015). Aligned with this and in line with Buber's (1957) statement that no person can live in isolation, are relationships with others. The question of how persons perceive themselves is pivotal. Are they on the one hand perceiving themselves as approachable by others, are they perceived as being friendly, caring and supportive towards others? Or on the other hand, how do other persons perceive them? Aggression is a fact of life where interaction is taking place between human beings. All interactions, whether intra- or interpersonal, do not always develop smoothly. In

this regard interaction and the quality of interaction with others can be perceived as challenging and less constructive when they view themselves as "loners", or as being over submissive and complaisant.

Demarcation of aggression

Although it is difficult to define the concept aggression, we pose some working definitions to place aggression within the context of this paper.

Aggression is viewed as behaviour, including hostile, injurious or destructive behaviour, directed to another individual or the self, with the intent to harm (Mayer, 1997; Anderson & Huesmann, 2003). Aggression can be classified into different types of aggression: active overt aggression, verbal aggression, direct and physical aggression, and argumentative aggression.

Active overt aggression refers to the behaviour of a person intended to harm another person physically, psychologically or to damage or destroy or to take a person's property (Kaukiainen, et al, 2001; Kumar & Mittel, 2014); Oade, 2015). Verbal aggression refers to attacking the self-concepts of other persons rather than their positions and include name-calling, threats, ultimatums, negativity, resentment and suspicion (Bjorkqvist, Lagerspetz & Osterman, 1992; Kaukiainen, et al, 2001; Infante & Rancer, 2012; Academy of Pediatrics, 2010). Direct and physical aggression refers to a direct means of aggression taking place in in face-to-face situations and include menacing gestures, swings at people, grabbing at clothing, striking, pushing, scratching, pulling hair, attacking, hitting, kicking, tripping, shoving and taking things (Bjorkqvist, Lagerspetz & Osterman, 1992, Kaukiainen, et al, 2001). Argumentative aggression involves attacking the positions other persons take on given issues and include a predisposition to recognize controversial issues, advocate positions and refute opposing positions (Infante & Rancer, 2012).

As can be seen from the above, aggression can manifest as verbal and physical; it can be direct or indirect; it can be covert or overt; or it can be explicit or evasive. Nevertheless all manifestations are within the context of intra- or interpersonal relationships. Aggression can manifest through bad mouthing someone else, spreading rumours, and telling secrets of a person to others, criticising others, giving negative names to another person, being seen as a hothead, influencing someone to dislike another person and teasing. Further there can be a willingness to get into arguments, a tendency to yell at others and to shut others out of a group. Aggression can also manifest through the taking of others' property without permission, the telling of false stories, the writing of notes about others, and the planning to bother another person. On the physical side aggression can be that one is seen as getting into fights more frequently as compared to others, threatening others, the kicking of another person, being viewed by others as aggressive and pushing others to the ground.

It stands for reason that intra- and interpersonal relationships within the context of this paper are viewed as influencing, demarcating and even determining the manifestations of aggression. Aggression in our view is dependent on the level refinement, sophistication and elegance of intra- and interpersonal relationships. When a person on the one hand is experiencing a mentally healthy and fulfilling life

and is at ease with themselves and others it is expected that it will influence the perceptions of aggression exerted on others and the perception of experiences of aggression from others. On the other hand if intra- and interpersonal relationships are challenged or even at risk, this will influence perceptions of experienced and exerted aggression.

Problem statement

Within the university context it seems as if the involved persons are often ignoring the phenomenon of aggression on campus, in lecture halls, and especially in learning situations. These perceptions have recently changed somewhat as a result of student riots on most campuses in South Africa. However, lecturers in the past were definitely aware of aggression and the way in which it sometimes rampantly causes almost unmanageable situations (Toerien, Myburgh & Poggenpoel, 2014). It often seems as if the quest is: "there are only a few lecturers left before the end of the semester, and then aggression can be ignored for sometimes another semester before a repetition of the situation develops with a new group of students". Then often it is business as usual where the cycle repeat itself where after aggression is again ignored. This is quite often also true for students in a faculty of education.

Very little research about these challenging situations is reported in the literature. This guided us to pose the question as to what are the perceptions of students of specific aspects involved in aggression in a faculty of education. Perceptions in this paper refer to comprehension resulting from awareness by persons through their senses (Oxford Advanced Learner's Dictionary, 2015). Further, we started to become interested as to whether different groups of students perceive aggression differently, and finally what are the levels of perceived aggression by students in a faculty of education. In view of this the following aims were formulated.

Aims

In view of the above explication, we formulated the aims for this research as:

- To explore and describe the significance of differences between the perceptions of students of aggression of various groups perceiving higher versus lower intra- or interpersonal relationships.
- To describe guidelines concerning intra- and interpersonal relationships to assist students in a faculty of education to manage their own levels of aggression.

Research design and method

An inferential quantitative descriptive empirical research strategy was followed (Burns & Grove, 2011:256). In this regard validity and reliability formed the basis of this strategy. Principles concerning validity were implemented through conducting various and diverse consecutive factor analyses. Thereafter reliability was investigated. This was followed by multi- and univariate hypotheses testing between various groups. The overall approach to the data analysis was exploratory in nature. In the following sections the questionnaire, ethical measures, sample, validity, and the inferential statistical analyses are described.

Questionnaire

A questionnaire (Burns & Grove, 2011:353; Morgan, 2014: 55) was distributed electronically via e-mails too all students in the faculty of education at a specific university in South Africa. The filled in questionnaires were also received back electronically from the participants that elected to participate in the investigation. The completed questionnaires from the students who responded formed the data for this investigation and were used in the statistical analyses. The exploratory nature of this investigation demanded that derivations are trends observed in the data which could eventually lead to further findings in envisaged follow-up investigations. The utilised questionnaire is available on request. However, the formulation of the final number of the selected items used in this paper is presented in table 1. This questionnaire is the culmination of a large number of qualitative, quantitative studies, meta-syntheses and the literature.

The sections that formed part of the questionnaire were a biographic section, items on aspects of personality such as individual traits and relationships with other persons and perceptions of aggression as possible factors of aggression. In the biographic section items on aspects such gender, age, home language and year of study were asked. In this paper little attention is paid to these aspects. A total 85 questions on various other aspects formed part of the questionnaire. Each question item were assessed by the participants on a five-point Likert scale (Burns & Grove, 2011:357-358) that range from "Extremely uncharacteristic of me" marked as "1" through "Extremely characteristic of me" marked with a "5".

The focus of this paper is to investigate own perceptions with respect to intra- and interpersonal relationships as independent variables with regard to perceptions on aggression; and aggression as the dependent variable(s). Only those items describing these aspects were identified and selected. Initially 41 question items with regard to intra- and interpersonal aspects and aggression were identified from the available 85 items.

Ethical measures

Ethical measures discussed by Dhai and McQuoid-Mason (2011:14-15) such as autonomy, non-maleficence, beneficence and justice were consistently adhered to. Prospective participants were invited to participate by filling in the questionnaires. There were no identifying questions in the questionnaire. This project was given clearance by the Faculty Ethics Committee (Ethics clearance number 213-017). This committee is registered with the National Health Research Committee of South Africa (NHREC). The designated research official of the university gave clearance to the researchers that the questionnaire could be electronically forwarded to the specific targeted students. This person also managed the data collection to protect the participants from being identified. The possible benefit to the participants could be that they had the opportunity to reflect on their own behaviour, own experiences and the behaviour of other persons (UNESCO, 2006).

Population and Sample

Three hundred and thirty two (332) questionnaires were returned. This data were cleaned up and 266 participants' questionnaire data remained and were used in the analyses described in this paper. The demographics of the participants in the data of the 266 questionnaires are: 177 females, and 82 post-graduate students, i.e. honours, masters and doctorate students.

Operationalisation of the independent and dependent variables for the empirical investigation

The selected 41 items relating to intra-, interpersonal aspects and aggression at large were gauged against the literature to assess concept validity in iterative processes with the involved researchers. Aligned with the research theory utilised to formulate the above conceptual framework for this investigation, two aspects were used to identify the independent variables for this investigation, namely intra- and interpersonal aspects. In this regard 13 items were identified that represent these two aspects. Further, 28 items that describe aspects of aggression were included in the initial group of items used to operationalise aggression. These items formed the basis for further analyses described in the following sections of the paper.

After this process of assessing content validity we embarked on an exploratory process of subjecting the data to various factor analyses and reliability assessments.

Validity and reliability

Even though the concept "aggression" is commonly used and almost everyone knows when aggression manifests, whether intra- or interpersonally, the demarcation of the concept is fuzzy and difficult to demarcate. This is true even after numerous empirical investigations concretised in papers and theses whether qualitative or quantitative. The precise demarcation and clarification in our experience remains evasive. This has a real influence on assessing the validity of investigations such as the one described in this paper.

Nevertheless, in spite of this, validity and reliability (Walker, 2010:52; Burns & Grove, 2011:332-335) remain imperative. In this regard extensive qualitative empirical research was conducted over more than a decade and published in a large number of research papers and theses. As stated above participants in various projects were aware that aggression is part and parcel of life, whether intra- or interpersonally. These basic researches were followed by meta-syntheses and literature controls. In spite of all the projects and literature searches, the concept of aggression in itself remained fuzzy and blurred. The indicators of the concept nevertheless can be used to demarcate the various dimensions of aggression as will be demonstrated in this paper further down, but uneasiness about a clear and precise definition still remains. The findings from the various research projects and literature controls were built into the questionnaire that was used in this research.

The result of the initial selection and identification process were the selection of the 41 items. These items were subjected to consecutive principle component factor analyses using varimax rotation and also reliability assessments using Cronbach alpha coefficients.

The first factor analysis indicated 11 factors with eigenvalues larger than one. However, 3 items had factor loadings of less than 0.40 and were deleted from further analyses. Gauging the consecutive solutions for convergence, sizes of eigenvalues, scree plots, variance explained and loadings on more than one factor, we ended up with the solution presented in table 1. This solution consisted of 7 factors for the remaining 38 items and each item loading on only one factor. Further, when the factor loading of an item was negative, the item was transposed and the factor analysis was rerun. The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy of the factor analysis is 0.860 (see table 1; see Field, 2005: 649-650). The Bartlett's coefficient to assess sphericity is significant (P-value of 0.000; Field, 2005: 652). As the KMO value is above 0.5 and the Barlett's test is significant (Field, 2005) this factor solution with 7 factors described intra- and interpersonal aspects, as well as aggression as perceived by the participants. This solution is accepted as basis for the further investigation.
 (table 1 more or less here)

The focus of this paper is to investigate the participants' perceptions with respect to intra- and interpersonal relationships as independent variables (see factors 4, 5 and 7) with regard to perceptions on aggression. Aggression in this paper is operationalised in terms of the 4 factors (see table 1: factor 1, 2, 3 and 6) as the dependent variable(s). These factors described intra- and interpersonal aspects and aggression are given in the tables that follow.

Factors describing independent variables: intra- and interpersonal dimensions

The three factors describing the intra- and interpersonal relationships are demarcated and presented in the following section:

Factor 4 (5 items): From table 1 it is clear that factor 4 describes the intrapersonal dimension of the participants. This factor was identified as **Self-love** in view of the fact that items loading on this factor this reflect that participants love themselves, care for themselves, understand themselves, are not harsh towards themselves and do not take their anger out on someone else (Pietersma & Dijkstra, 2012; MacDonald, 2015; Psychlopedia, 2015; Santilli, 2015) .

Factor 5 (5 items): was identified as **Constructive interpersonal relationships** as items loading on this factor describe that this person is perceived as approachable, friendly, sociable, caring and supportive towards others (Curve Agency, 2015; Oxford Dictionary, 2015; Scott, 2015).

Factor 7 (3 items): From table 1 it follows that items loading on this factor describe perceptions of being submissive, being a "loner" and being complaisant. In view of these items this factor was identified as **Disconnected interpersonal relationships**. It can be very difficult to communicate effectively when a person feels disconnected. Disconnection and experiencing challenges can go hand in hand, as an individual

might feel frustrated or threatened. This can cause an individual to be defensive (Jordan, 1995; Curve Agency, 2015).

Factors describing dimensions of aggression

In the following section, factors from table 1 describing perceptions of aggression are being identified. A total number of 25 items describe aggression. These are described by 4 factors:

Factor 1 (7 items): Was identified as **Active overt aggression** in view of the fact that items loading on this factor describe perceptions of a tendency to push other persons to the ground, taking things without permission, writing small notes criticising other people, kicking other persons, telling false stories and planning secretly to bother other persons.

Factor 2 (items): was identified as **Verbal aggression** because items loading on this factor describe perceptions of a tendency to say bad things behind someone else's back, telling secrets of other to other persons, give negative names to others, criticise other's appearance, influence others to dislike someone else and tease another person.

Factor 3 (7 items): was identified as **Direct and physical aggression**. Items loading on this factor describe perceptions of being seen as a hothead, having threatened others in the past, being aggressive towards oneself, getting into fights more than the average person and when annoyed by someone a willingness to tell them off it.

Factor 6 (4 items): was identified as **Argumentative aggression**. The items loading on this factor indicate that participants perceive themselves as getting into arguments with other when they disagree, a tendency to shut other people out of the group, a tendency yell at others without a good reason and disagreeing with others.

Hypotheses to assess the significance of differences between groups on aggression

In the following section the independent variables of intra- and interpersonal relationships are used to assess aggression amongst education students at a university. The median count of each factor with respect to intra- and interpersonal relationships was used to divide the group into two, thus obtaining a group with a high count versus a group with a low count for each of the three factors describing intra- and interpersonal relationships. In each the group with a higher mean on for ex. Self-love (factor 4), Constructive interpersonal relationships (factor 5) or Disconnected interpersonal relationships (factor 7) was compared to the group with the low mean on the factors describing aggression, i.e. aggression total (all 25 items) and thereafter the four factors. The four factors (1, 2, 3 and 6) describing aggression were together formed the vectors of aggression.

Hypotheses on multivariate and univariate levels are formulated below. The following general hypotheses were all tested on the 1% or 5% level of significance.
General multivariate hypothesis:

> *HoT: There is no significant difference between vectors of aggression of students perceiving themselves as having a low value on intra- or interpersonal*

relationships as compared to the vectors of aggression of students perceiving themselves as having high value on intra- or interpersonal relationships.

HaT: There is a significant difference between vectors of aggression of students perceiving themselves as having a low value on intra- or interpersonal relationships as compared to the vectors of aggression of students perceiving themselves as having high value on intra- or interpersonal relationships.

In this research this general multivariate hypothesis was tested with a Hotelling's T-square test consecutively for the significance of differences between groups with high versus low means on Self-love (factor 4), Constructive interpersonal relationships (factor 5) and Disconnected interpersonal relationships (factor 7). In each case the groups were compared on the vectors of means with respect to aggression. The vectors of factors were composed of the four factors describing aggression, i.e. factor 1, 2, 3 and 6. If significant multivariate difference was observed, this hypothesis testing was followed with univariate hypotheses testing with a Student t-test in each case. In this case the following general one-sided univariate hypothesis was tested for each of: aggression total (all 25 items), factor 1, 2, 3 and 6. It stands for reason that in such a case two-sided t-test P-values is divided by two to obtain a one-sided P-value. These one-sided values are reported in the tables. The following general univariate hypotheses will be tested:

Hot: There is no significant difference between the value obtained on a specific factor of aggression (i.e. factor 1, 2, 3 and total) of students perceiving themselves as having a low value on intra- or interpersonal relationships as compared to the value obtained on a specific factor of aggression of students perceiving themselves as having high value on intra- or interpersonal relationships.

Hat: The perceived value obtained on a specific factor of aggression of students perceiving themselves as having a low value on intra- or interpersonal relationships as compared students perceiving themselves as having high value on intra- or interpersonal relationships is significantly higher.

The above stated hypotheses are tested consecutively and are reported in each of the tables in this paper (See table 2, 3 and 4).

(Table 2, 3 and 4 more or less here)

Differential analysis of aggression

The means for the 266 participants on a five-point scale are: Aggression total =1.75, Active overt aggression (Factor 1) = 1.31, Verbal aggression (Factor 2) = 1.82, Direct and physical aggression (Factor 3) = 1.93 and Argumentative aggression (Factor 6) = 2.07. These means on a five-point scale indicates that aggression in total and on each of the four factors describing a different aspect of Aggression is generally sided towards "Extremely uncharacteristic of me" rather than "Extremely characteristic of me". This is indicative thereof that the perception of the participants is that they are less inclined to be aggressive rather than being aggressive. Further reference to the sizes of means and the implications thereof will be made below.

Self-love: From table 2 it is clear that HoT is rejected in favour of HaT on the 1% level of significance (P-value=0.000). This indicates that the multivariate hypothesis for Self-love of a significant difference between the vectors of means for the two groups is significant. Therefore the multivariate hypothesis testing is followed by the univariate testing of hypotheses with the Student t-test. From table 2 it is clear that Hot is rejected in favour of Hat on the 1% level of significance in the case of the Aggression total, Active overt aggression (Factor 1), Verbal aggression (Factor 2), Direct and physical aggression (Factor 3) and Argumentative aggression (Factor 6). This indicates that the more persons perceive that they exhibit self-love the less aggressiveness they perceive they demonstrate (Psychlopedia, 2015; Santilli, 2015).

Inspecting the means of the responses on the various factors describing perceptions of aggression, the following picture comes to the fore: The mean for the 266 participants are on Aggression total (=1.75), Active overt aggression (Factor 1 = 1.31), Verbal aggression (Factor 2 = 1.82), Direct and physical aggression (Factor 3 = 1.93) and Argumentative aggression (Factor 6 = 2.07) (See above). Within the context of Self-love (table 2) this sample of students perceived that on a 5-point scale the highest mean of any group is 2.26, but more importantly the group with the highest count on Self-love gave themselves only a maximum of 1.89 on a five-point scale for Argumentative aggression.

In view of these observations we concluded that for this sample of students the higher their Self-love, the significantly lesser their tendency towards aggression as compared to the group of students that perceive themselves as having a lower self-love. Further, the means for both groups are low, but even much lower for the group perceiving themselves to have a higher Self-love. This overall indicates that perceptions of high Self-love seemingly plays a pertinent role in counteracting perceptions of high aggressiveness.

Constructive interpersonal relationships: From table 3 it follows that HoT is rejected in favour of HaT on the 1% level of significance (P-value= 0.000, table 3). Further, Hot is rejected in favour of Hat for Aggression total on the 1% level, Verbal aggression on the 5% level (Factor 2), Direct and physical aggression on the 5% level (Factor 3) and Argumentative aggression on the 1% level of significance (Factor 6). Further, again the means on the different factors are indicating that the participants perceive themselves as being less aggressive by marking choices closer to "Extremely uncharacteristic of me". What is observable is that the differences in this case are closer to each other for high versus low counts on **Constructive Interpersonal relationships,** i.e. the largest difference is 0.26 (factor 6) and the smallest difference is 0.12 (factor 1). Compared to this, the largest difference for self-love is 0.62 (factor 3) and the smallest is 0.34 (factor 1).

Disconnected interpersonal relationships: In this case again HoT is rejected in favour of HaT (P-value=0.000). Further significant differences are observed for factor 1 (5%-level) and factor 3 (on the 5%-level). Further the differences between the high and lower disconnected groups are relatively small as the largest difference is 0.16 (factor 3).and the smallest difference is 0.05 (factor 6). This observation led to the conclusion that although some differences in this case are significant, it cannot be substantial as differences are small on five-point scale. (NOTE: Take note that in the

case of Disconnected interpersonal relationships interpretation should be in the opposite direction, i.e. a higher mean value on Disconnected interpersonal relationships indicate a less constructive perception as compared to persons perceiving themselves as having a lower mean value).

Overarching findings and implications

When the findings based on the three factors from the empirical investigation are inspected and one reflects on the implications thereof it clear that in essence the focus is on intra- and interpersonal relationships. This group of students perceive themselves as being not over aggressive. This is in spite of lectures/professors often are of a different perception (Toerien, Myburgh & Poggenpoel, 2014). Further, it seems that Self-love (factor 4- reflective of constructive intrapersonal relationships) as compared to Constructive (factor 5) or Disconnected interpersonal relationships (factor 7) indicates that it is more sensitive with regards to indicating or reflecting significant differences between the groups concerning aggression. This is indicative that the individual's perceptions of self and internal life play a pivotal role concerning perceptions of aggression. In line with existing research and theory it seems that when the mental health of an individual is well, then most other aspects concerning intra- and interpersonal relationships is well. Thus in addressing the mental health of students the focus should be on the individual's mental health and thereafter Constructive intrapersonal and finally Disconnected interpersonal relationships. This is in accordance with positive psychology that claims that the focus should be on constructive and positive intra- and interpersonal relationships. Often the negative aspects of relationships will then solved without unnecessary focussing on less constructive aspects.

Final reflection and a word of caution

The findings from this research should be viewed against the back ground that very few persons would state that they perceive themselves as aggressive. Further, a close friend might perceive one as more aggressive than the individual him- or herself would like to acknowledge. In this case lecturers/ professors often perceive students as aggressive when for example the handing in of late assignments or missed exams are discussed. In the case of this specific research project we are aware that electronic surveys are completed by small numbers of students and it might just be that the group of students that completed this survey were the less aggressive group of students. It could be that students, who did not complete the survey, differ substantially from this group of students.

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Table 1: Results of factor analysis and item analyses (Cronbach's Alpha) on the responses of the students on their perceptions of their aggression[a,b,c]

	Factor						
	1	2	3	4	5	6	7
Cronbach alpha	.846	.816	.773	.753	.753	.682	.241
B45: Given enough provocation, I may hit another person			.524				
B46: I sometimes tend to shut other people out of our group						.615	
B47: I usually get into arguments when people disagree with me						.703	
B48: I sometimes yell at people for no good reason at all						.480	
B49: I sometimes tend to kick other people when I am upset	.669						
B50: I sometimes ignore other people when they disagree with me on certain issues		.434					
B51: When people annoy me, I am may tell them what I think of them			.481				
B52: When people annoy me, I may tell them what I think of them	.532						
B53: I sometimes tell false stories about people	.558						
B54transp: When angry, I usually take it out on people close to me				.469			
B55: I sometimes plan secretly to bother other people	.550						
B56: I sometimes tend to shove (push) people when I am upset			.504				
B57: I sometimes tend to say bad things about people behind their backs		.666					
B58: I sometimes call people negative names		.644					
B59: I sometimes tend to take things from other people without their permission	.720						
B60: I sometimes tell peoples' secrets to other people		.656					
B61: I sometimes tease other people		.516					
B62: I sometimes write small notes criticizing other people	.709						
B63: I sometimes push other people to the ground	.738						
B64: I sometimes criticize peoples' appearance (i.e. their hair styles, clothes, etc.)		.587					
B65: I sometimes try to influence people to dislike a specific person with whom I am angry		.526					
B66: I view myself as sociable toward others					.604		
B67: I view myself as a "loner"							.546
B69: I view myself as submissive towards other persons							.614
B71: I am always approachable by other persons					.783		
B72: I am always seen as being friendly towards others					.767		

Item						
B73: I get into fights a little more than the average person does			.489			
B74: I have threatened people I know			.609			
B75: I view myself as usually being supportive towards other persons					.516	
B76: I view myself as usually being complaisant towards other persons						.406
B77: I sometimes view myself as aggressive towards myself			.518			
B79transp: I sometimes see myself as being harsh towards myself				.525		
B80: I view myself as being understanding towards myself				.713		
B81: I view myself as loving myself				.755		
B82: Some of my friends think I am a hothead			.669			
B83: I view myself as caring towards other persons					.599	
B84: I view myself as caring towards myself				.722		
B85: I often find myself disagreeing with people						.470

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 14 iterations.
b. Overall Cronbach alpha: 0.812 (38 items)
c. Cronbach alpha for only aggression items: 0.912 (25 items)

Table 2: Significance of differences between groups of students perceiving themselves as having higher versus lesser **Self-love** by aggression[a,b,c]

Factors of aggression	Cutpoint=20	N	Mean	Std.Deviation	P-value
Factor 1: Active overt aggression	higher	136	1.14	.26	
	lesser	130	1.48	.72	.000**
Factor 2: Verbal aggression	higher	136	1.60	.58	
	lesser	130	2.06	.81	.000**
Factor 3: Direct and physical aggression	higher	136	1.63	.51	.000**
	lesser	130	2.25	.86	
Factor 6: Argumentative aggression	higher	136	1.89	.69	.000**
	lesser	130	2.26	.84	
Aggression (total – 25 items)	higher	136	1.53	.35	
	lesser	130	1.98	.66	.000**

a. ** Significant difference on the 1% level of significance. Two-sided P-value divided to obtain the reported one-sided P-value.
b. Wilk's Lambda P-value = 0.000: indicating a significant multivariate difference between higher versus lesser **Selflove** for the vectors composed of factor 1, 2, 3 and 6. Aggression total was excluded for this comparison
c. Cutpoint on **Selflove** was 20. The "higher" group was greater than and the "lesser" group less than 20. The minimum = 5 and a maximum = 25 for the 5 items

Table 3: Significance of differences between groups of students perceiving themselves as having higher versus lesser **Constructive interpersonal relationships** by aggression[a,b,c]

Factors of aggression	Cutpoint=21	N	Mean	Std. Deviation	P-value
Factor 1: Active overt aggression	higher	140	1.25	.58	
	lesser	126	1.37	.55	.251
Factor 2: Verbal aggression	higher	140	1.74	.74	
	lesser	126	1.92	.71	.010*
Factor 3: Direct and physical aggression	higher	140	1.85	.79	.018*
	lesser	126	2.02	.74	
Factor 6: Argumentative aggression	higher	140	1.94	.82	.001**
	lesser	126	2.22	.73	
Aggression (total – 25 items)	higher	140	1.67	.60	
	lesser	126	1.84	.53	.003**

a. Two-sided P-value divided to obtain the reported one-sided P-value. ** Significant difference on the 1% level of significance. * Significant difference on the 5% level of significance
b. Wilk's Lambda P-value = 0.000: Wilk's Lambda P-value = 0.000: indicating a significant multivariate difference between higher versus lesser **Constructive interpersonal relationships** for the vectors composed of factor 1, 2, 3 and 6. Aggression total was excluded for this comparison
c. Cutpoint on **Constructive interpersonal relationships** was 21. The "higher" group was greater than and the "lesser" group less than 21. The minimum = 5 and a maximum= 25 for the 5 items

Table 4: Significance of differences between groups of students perceiving themselves as having higher versus lesser **Disconnected interpersonal relationships** by aggression[a,b,c]

Factors of aggression	Cutpoint= 8	N	Mean	Std. Deviation	P-value
Factor 1: Active overt aggression	higher	140	1.35	.62	.042*
	lesser	126	1.26	.49	
Factor 2: Verbal aggression	higher	140	1.86	.76	.091
	lesser	126	1.78	.70	
Factor 3: Direct and physical aggression	higher	140	2.01	.81	
	lesser	126	1.85	.71	.023*
Factor 6: Argumentative aggression	higher	140	2.05	.85	
	lesser	126	2.10	.72	.154
Aggression (total – 25 items)	higher	140	1.79	.63	
	lesser	126	1.70	.51	.056

a. Two-sided P-value divided to obtain the reported one-sided P-value. ** Significant difference on the 1% level of significance. * Significant difference on the 5% level of significance

b. Wilk's Lambda P-value = 0.000: Wilk's Lambda P-value = 0.000: indicating a significant multivariate difference between higher versus lesser **Disconnected interpersonal relationships** for the vectors composed of factor 1, 2, 3 and 6. Aggression total was excluded for this comparison

c. Cutpoint on **Disconnected interpersonal relationships** was 8. The "higher" group was greater than and the "lesser" group less than 8. The minimum = 3 and a maximum= 15 for the 3 items