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RESEARCH ARTICLE

Interpersonal skills and emotion management: Impact of social leadership on job satisfaction of workers

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Abstract: Psychological cognition is an important aspect in human psychology and management. This article is aimed to look at interpersonal emotional management interpersonal emotion management as a theoretical important indicator of job satisfaction. The main discussion is on how to predict employees' job satisfaction through the implementation of interpersonal emotion management strategies and the main source of research is review of existing literature. This review addresses the gap in the literature by reviewing the role of interpersonal emotional management on followers' job performance. This review finds the relationship between interpersonal emotional management which consists of four dimensions: circumstance adjustment, attentional placement, cognitive change, modulation of emotional response and job satisfaction. Overall, this literature review contributes to the interpersonal emotion management and job satisfaction literatures by providing meaningful management implications to the organizations.

Keywords: circumstance adjustment, attentional placement, cognitive change, modulation of emotional response and job satisfaction

1 Introduction

Interactions are inevitable in daily life. This needs people's aptitude towards psychological understanding not only in at social life but also at workplace. Work embodies emotional experience. It is a wellspring of annoyance, misery, dissatisfaction, and humiliation, yet in addition a spring of pride, belongingness, satisfaction, and energy.[1]

These emotions get both from business related occasions and cooperation[2,3] and from the non-work sentiments that employees convey with them to the job. The results of these emotions are sweeping, affecting prosperity, as well as individual, gathering organizational performance and job satisfaction.

To be specific interpersonal emotion management is an arrangement plan of complex capacities which is fundamental for powerful alteration and productive social exchange in an ordinary everyday presence. In present age social responsibility has attained high importance due to our communication structures.[4] Communication can influence on emotional regulation. Durlak, Domitrovich[5] exhibited that the point of confinement concerning emotional management generally impacts especially emotional regulation. The emotional regulation is a key portion of adaptability. In foundation environment, employees comments and proposals designated to better organizational execution are fundamental to execution since, it is "fair not possible to 'make sense of it' from the best".[6]

The purpose of this review is to ascertain the relationship impact between interpersonal emotion management strategies and job satisfaction of a follower in an organization.[7] However, when the emotional regulation techniques are mitigated by the leaders on the follower or employee decidedly influences the worker's organizational responsibility and job satisfaction. Specifically, the degree to which the leader gives consolation and support to the worker concerning their emotions is a solid determinant of the follower's state of mind towards his or her job.[8]

In the present investigation we apply the interpersonal emotional management as a theoretical framework to understanding the ramifications of each methodology on the employees job satisfaction in an organization. We broaden the current theoretical model of interpersonal emotional management by exploring the job satisfaction

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of the follower in each technique to moderate the followers' negative emotions by the leader, which additionally presents the effect of situation modification, attentional placement, cognitive change and modulation of emotional response. The review articulates the significant of the theoretical explanations through seeing how every one of interpersonal emotional management strategies implored by the leader to the follower has an effect on the followers. Various examinations research this relationship in different occupation settings.[9] Underline the significance of advancing a supportive workplace and sufficient supervision bolster, as these elements influence employees' work related performances and discernments.[10,11]

2 Theory: interpersonal emotional management theory and job satisfaction

This work is inspired from social exchange theory. At the same time, study is important in terms of job satisfaction has which remained an intriguing point in the managerial consciousness research and supervision. Locke[12] characterized job satisfaction as "the pleasurable emotional state coming about because of the evaluation of one's job as accomplishing or encouraging the accomplishment of one's job values". As indicated by Spector[13] job satisfaction alludes how much people like or repugnance their jobs all things considered and particular parts of their jobs.

Job satisfaction incorporates outside angles, for example, working conditions and inside perspectives, for example, person's desires. Interpersonal emotion management has been appeared to impact job satisfaction. Past examinations demonstrated that interpersonal emotion management was decidedly identified with job satisfaction of the employee in different work environment.[14,15] At the point when workers see more prominent emotional regulation management, they will probably have expanded job satisfaction; nonetheless, the connection among interpersonal emotion management and job satisfaction may vary as indicated by the particular part of emotional regulation procedure that research accentuated.[16]

Interpersonal emotion management theoretical tactics from Gross[17] take a shot at emotion management of oneself and the thought that people deal with others' emotions at work utilizing similar strategies that they use to deal with their very own emotions. The interpersonal emotion management approaches used to regulate emotions are namely: circumstance adjustment, attentional placement, cognitive change, modulation of emotional reaction.[18,19]

Circumstance adjustment comprises of dynamic endeavors to straightforwardly adjust or alteration of a situation to change its emotional effect.[18] In circumstance adjustment, a leader will expel, adjust, or change the parts of the condition or issue causing an undesired emotion in the supporter. All things considered, circumstance adjustment is issue centered. This will allow the follower to be satisfied with their work and job.[18]

Firms want to achieve and maintain the leading position in the industry and research has highlighted the importance of political capital ties in this aspect.[20] For organizational leadership, individual leadership and cognition is palpable. Cognitive change involves the leader showing actions towards the circumstances in the context of the follower, by assisting the employee embrace the circumstance in a more affirmative manner. Consequently, subjective change is additionally issue centered. The undesired emotional effect of the follower is moderated by altering the manner in which the employee considers the issue. A superior or supervisor is endeavoring to diminish emotion-inciting parts of the follower. The study pursue that the battle and end goal is to reinterpret an issue in a more positive light for other people, one must comprehend and spotlight on the issue. Cognitive change is able to change the circumstance of the follower and lead the employee to be satisfied with their work.[21,22]

Attentional placement includes diverting consideration far from the components of situation that can hinder the objectives, concerns, or prosperity, completely.[18] In attentional arrangement, a leader coordinates the employees behavior at diverting the follower with the end goal to motivate desirable emotions. The leader can employ humor or acting senselessly to make the objective feel indifferent or different means as methods for diverting followers to enhance their emotions. A superior is endeavoring to divert an employee's from the undesirable feeling or emotions.

Along these lines, attentional organization is emotion-centered. Attentional is able to mitigate the undesirable emotions of the follower and yield positive emotions and foster job satisfaction.[23,24]

Modulating the emotional reaction includes impacting emotional response propensities. This system comprises diminishing the undesired feeling once it is encountered. In ensuring the emotional reply, the leader can navigate the manner that would inspire followers to address their unwanted undesired feelings. Extant literature puts the need for understanding the wants and desires of customers and community and even the intrinsic motivation of employees in volunteering process in proposed social activities may have the impact on job satisfaction

of employees.[25] There is also a need for understanding the wants and desires and unwanted feelings of internal customers. Suppression is vital in organizations as it may very well may be effortlessly communicated and exhibited by leaders and moreover integrated with an follower's way of life. Certainly, organizational display rules are regularly focused at the hiding of the undesired emotions, for example, outrage, disgrace, and trouble. Modulating emotional strategy has very little impact on the job satisfaction of the follower as the follower is conditioned to suppress their feelings rather than address them.[6, 23]

Job satisfaction is important because it enables the employee to champion among the most fundamental assignments to the extent its motivation, execution, work profitability, not least to the extent enthusiastic wellbeing[26] . Given this present examination's inspiration of perceiving criticalness to work results related with interpersonal emotion management systems, they is a part relating the perspective of interpersonal emotion management methodologies to job satisfaction.[27]

In a nutshell the interpersonal emotion management strategies may reduce undesired emotions at any rate briefly in particular settings, just a few strategies give positive feedback about leaders' ability to mitigate emotion-inciting dangers to their followers' prosperity, though different strategies give negative prompts about leaders' eagerness to do this. In particular, since followers' job assumptions about leaders' ability to deliver mitigate the negative emotions by through circumstance adjustment and cognitive change strategies that the leaders show sympathy about them. At the point when the worker feels and see that these behaviors, they are probably going to encounter a feeling of commitment and higher nature of job satisfaction will result. This higher nature of job satisfaction well give the feeling of obligation and commitment normal for superb job performance set the phase for additional push to take part extra-role in additional job performance. A superior who is able to recognizes and addresses obstructions in a one's work environment by means of sanctioning of intellectual change and circumstance alteration makes constructive results on the grounds that (a) it gives a constructive interpersonal prompt with regards to leader member relationship, (b) it spurs followers to invest additional exertion toward their errands as they feel obligated to their superior.[28, 29] Drawing from organic process scientific discipline, social baseline theory purports that humans have tailored to operate during a social surroundings. The brain acts below the idea that proximity to others is that the norm, or baseline condition. As critical social isolation, that is related to stress and poor health, social proximity is related to attenuated vas, hormonal, and neural responses to threat, further as longevity and physical health. The presence of others is theorized to assist people conserve effort and metabolic resources through the social regulation of feeling. As an example, the dorsolateral anterior cortex is a smaller amount active throughout the down-regulation of negative have an effect on whereas the presence of others. Social proximity is hypothesized to confer feeling restrictive advantages through 3 mechanisms: 1) risk distribution, 2) load sharing, and 3) capitalization. Risk distribution lowers vigilance towards threat as a result of risks appear lower as cluster size will increase. Load sharing involves the data that shut others will offer facilitate and resources if required. Finally, capitalization refers to the intensification of positive emotions once they are shared with others. Based on this, we can hypothesize that interpersonal emotion management has a positive impact on worker's satisfaction.

3 Hypothetical framework

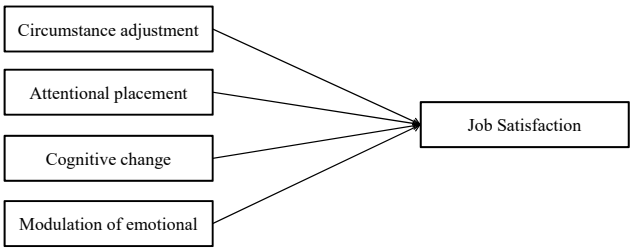

Figure 1. Interpersonal emotion management

4 Discussion

Model prescribed in Figure 1 is apparently quite simple but heavily important for research in the field of psychology and leadership. Many instances of social feeling regulation, like those delineate higher than, are dyadic; in alternative words, they involve one person attempting to influence the sentiments of another person. However, social feeling regulation will occur between larger social teams. For instance, within the geographical point a pacesetter would possibly try and influence the sentiments of a full cluster of followers to form them feel additional ardent and intended. Interpersonal feeling regulation conjointly shares links with alternative processes by which individuals come back to influence others' emotions, like emotional contagion, within which the emotions of 1 person are 'caught' by another person as a results of mere contact (*e.g.*, if somebody was having a terrible day, they could 'infect' their friends

with their dangerous mood).[23] Equally, the compulsion to inform others concerning our emotional experiences (termed the social sharing of emotions) may end in others coming back to feel what we tend to feel. The distinction between these processes and social feeling regulation regards the extent of process concerned. Social feeling regulation may be a controlled method, whereby an individual advisedly tries to vary the means others feel. In distinction, emotional contagion is assumed to be comparatively automatic, engaged while not acutely aware awareness; whereas social sharing is somewhat additional acutely aware however sometimes lacks the intent to influence others' emotions. We also contribute to both interpersonal emotional management and job satisfaction literatures by considering the role of employees' daily emotion interpersonal management. Accordingly, past research writing has analyzed emotional experiences; we think about how leaders manage emotions of the follower how it impacts their emotional experiences on their work execution and job satisfaction. The literature review contributes to the significant of the emotional regulation literature by exploring the relationship between interpersonal emotional management and job satisfaction. In this manner, we gain an increasingly total image of the effect of leader part's generally capacity to adapt to depleting work behavior on a day-to-day basis.

Another connected method is social influence that involves attempting to vary the attitudes and/or behaviors of others. Leaders having vision and intention of globalization should give a high weight to cultural understanding and effects of its differences on important key performance indicators of businesses and institutions. This vision also covers environmental management and earnings transparency.[30] The key distinction here is that social feeling regulation is primarily involved with everchanging alternative people's feelings; any changes to attitudes or behaviors are secondary to the impact on feeling.

5 Conclusion

In conclusion the exploration between the interpersonal emotion management and job satisfaction shows that the undesirable emotions have an effect on the follower or employees job satisfaction. It's important that the leaders is able to mitigate and manage the followers emotions through adopting the emotional regulation strategies so as to create a good working environment.[31]

In conclusion we propose that interpersonal emotion management can assist adapt to work pressure and relieve negative emotions experienced at work and promote job satisfaction of the employee. In spite of the fact that the writing supports stable between-singular contrasts in emotion regulation strategies.[32,33] Interpersonal emotion management can be untaught or created through preparing and instructing as it is crucial for the employee to utilize emotion regulation strategies. This writing review likewise gives additional proof of the evidence of the detrimental impact of interpersonal emotional management and job satisfaction. The current research has implications for both organizations and employees. It highlights the significance of considering inside individual procedures in the performance of essential work practices. The greater part of organizational research has concentrated on organizational and between-person factors impacting employee performance. However, this examination significant continues to add to a growing assemblage of evidence recommending that the experiences employees emotional encounter experience can impact everyday responses and job satisfaction at work and that managers must know about these elements so as to deal with their follower on a daily basis.

In this manner, employees may be benefited for preparing to end up mindful of emotional responses and their sources with the end goal to figure out how to reappraise circumstances in manners that outcome is a desirable sentiment. Leaders have to understand the cross cultural philosophy of social relations and social responsibility.[34] Relatedly, look into emotional management practices has turned out to be gainful for worker prosperity, job satisfaction and good management.[18,35–38]

This paper has substantial implication for SET theory because it indicates the relationship of interactions on job satisfaction. Practitioners may also take advantage of this analysis to implement the correct use of interpersonal emotion management strategies at various hierarchical levels. To overcome the limitations, this topic may be benefited and extended through future empirical research.

6 Conflict of interest

Authors declare no conflict of interest.

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References

[1] Ashforth BE and Humphrey RH. Emotion in the workplace: A reappraisal. Human Relations, 1995, **48**(2): 97-125. ISO. Language Of Temporal Ordering Specification, ISO 8807, International Organization for Standardization, Geneva, 1989.
https://doi.org/10.1177/001872679504800201

[2] Ashforth BE and Humphrey RH. Emotion in the workplace: A reappraisal. Human Relations, 1995, **48**(2): 97-125.
https://doi.org/10.1177/001872679504800201

[3] Ashkanasy NM and Daus CS. Emotion in the workplace: The new challenge for managers. Academy of Management Perspectives, 2002, **16**(1): 76-86.
https://doi.org/10.5465/ame.2002.6640191

[4] Riggio RE and Reichard RJ. The emotional and social intelligences of effective leadership. Journal of Managerial Psychology, 2008, **23**(2): 169-85.
https://doi.org/10.1108/02683940810850808

[5] Hao Y, Farooq Q and Sun Y. Development of theoretical framework and measures for the role of social media in realizing corporate social responsibility through native and non-native communication modes: Moderating effects of cross-cultural management. Corporate Social Responsibility and Environmental Management, 2018, **25**(4): 704-711.
https://doi.org/10.1002/csr.1523

[6] Durlak JA, Domitrovich CE, Weissberg RP, *et al*. Handbook of social and emotional learning: Research and practice, 2015.

[7] Aldao A, Sheppes G and Gross JJ. Emotion Regulation Flexibility. Cognitive Therapy and Research, 2015, **39**(3): 263-278.
https://doi.org/10.1007/s10608-014-9662-4

[8] Valaei N and Jiroudi S. Job satisfaction and job performance in the media industry: A synergistic application of partial least squares path modelling. Asia Pacific Journal of Marketing and Logistics, 2016, **28**(5): 984-1014.
https://doi.org/10.1108/APJML-10-2015-0160

[9] Griffin MA, Patterson MG and West MA. Job satisfaction and teamwork: the role of supervisor support. Journal of Organizational Behavior, 2001, **22**(5): 537-550.
https://doi.org/10.1002/job.101

[10] Goksel AG, Caz C, Yazici OF, *et al*. Examination of the Relationship between Organizational Stress and Employee Performance: A Research on Staff Working on Provincial Directorate of Youth and Sports. Journal of Education and Learning, 2017, **6**(1): 322-329.
https://doi.org/10.5539/jel.v6n1p322

[11] Alegre I, Mas-Machuca M and Berbegal-Mirabent J. Antecedents of employee job satisfaction: Do they matter? Journal of Business Research, 2016, **69**(4): 1390-1395.
https://doi.org/10.1016/j.jbusres.2015.10.113

[12] Sony M and Mekoth N. The relationship between emotional intelligence, frontline employee adaptability, job satisfaction and job performance. Journal of Retailing and Consumer Services, 2016, **30**: 20-32.
https://doi.org/10.1016/j.jretconser.2015.12.003

[13] Locke EA. What is job satisfaction? Organizational behavior and human performance, 1969, **4**(4): 309-336.
https://doi.org/10.1016/0030-5073(69)90013-0

[14] Spector PE. Job satisfaction: Application, assessment, causes and consequences: Thousand Oaks, CA: Sage, 1997.

[15] Mintz-Binder RD. Exploring job satisfaction, role issues, and supervisor support of associate degree nursing program directors. Nursing education perspectives, 2014, **35**(1): 43-48.
https://doi.org/10.5480/11-508.1

[16] Sultan S and Rashid S. Perceived Social Support Mediating the Relationship between Perceived Stress and Job Satisfaction. Journal on Educational Psychology, 2015, **8**(3): 36-42.
https://doi.org/10.26634/jpsy.8.3.3103

[17] Yuh J and Choi S. Sources of social support, job satisfaction, and quality of life among childcare teachers. Social Science Journal, 2017, **54**(4): 450-457.
https://doi.org/10.1016/j.soscij.2017.08.002

[18] Gross JJ. The emerging field of emotion regulation: an integrative review. Review of general psychology, 1998, **2**(3): 271-299.
https://doi.org/10.1037/1089-2680.2.3.271

[19] Little LM, Kluemper D, Nelson DL, *et al*. Development and validation of the interpersonal emotion management scale. Journal of Occupational and Organizational Psychology, 2012, **85**(2): 407-420.
https://doi.org/10.1111/j.2044-8325.2011.02042.x

[20] Williams M. Building genuine trust through interpersonal emotion management: A threat regulation model of trust and collaboration across boundaries. Academy of Management Review, 2007, **32**(2): 595-621.
https://doi.org/10.5465/amr.2007.24351867

[21] Hao Y, Farooq Q and Zhang Y. Unattended social wants and corporate social responsibility of leading firms: R elationship of intrinsic motivation of volunteering in proposed welfare programs and employee attributes. Corporate Social Responsibility and Environmental Management, 2018, **25**(6): 1029-1038.
https://doi.org/10.1002/csr.1681

[22] Wright RR, Mohr CD, Sinclair RR, *et al*. Sometimes less is more: Directed coping with interpersonal stressors at work. Journal of Organizational Behavior, 2015, **36**(6): 786805.
https://doi.org/10.1002/job.2002

[23] Lazarus RS, Kanner AD and Folkman S. Emotions: A cognitivephenomenological analysis. Theories of emotion, **1980**: 189-217.

[24] Niven K, Totterdell P and Holman D. A classification of controlled interpersonal affect regulation strategies. Emotion, 2009, **9**(4): 498-509.
https://doi.org/10.1037/a0015962

[25] Ashkanasy NM and Dorris AD. Emotions in the workplace. Annual Review of Organizational Psychology and Organizational Behavior, 2017, **4**: 67-90.
https://doi.org/10.1146/annurev-orgpsych-032516-113231

[26] Hao Y, Zhang Y and Farooq Q. The contribution of leading firms in environmental sustainability: Dampening the detrimental effect of political capital ties. International journal of

environmental science and technology, 2018, **15**(12), 2581-2594.
https://doi.org/10.1007/s13762-018-2035-x

[27] Hajdukova A and Klementova J. The Job Satisfaction as a Regulator of the Working Behaviour Procedia - Social and Behavioral Sciences, 2015, **190**: 471-476.

[28] Cropanzano R and Mitchell MS. Social exchange theory: An interdisciplinary review. Journal of management, 2005, **31**(6): 874-900.
https://doi.org/10.1177/0149206305279602

[29] Little LM, Gooty J and Williams M. The role of leader emotion management in leadermember exchange and follower outcomes. The Leadership Quarterly, 2016, **27**(1): 85-97.
https://doi.org/10.1016/j.leaqua.2015.08.007

[30] Zhang L, Farooq Q, Zhang Y, *et al*. Fair Value and Mispricing: How Domestic Earnings Transparency of Listed Firms Leads to Global Financial Stability. European Journal of International Management, 2019(In Press).
https://doi.org/10.1504/EJIM.2020.10019072

[31] Grant AM. Rocking the boat but keeping it steady: The role of emotion regulation in employee voice. Academy of Management Journal, 2013, **56**(6): 1703-1723.
https://doi.org/10.5465/amj.2011.0035

[32] Fisk GM and Friesen JP. Perceptions of leader emotion regulation and LMX as predictors of followers' job satisfaction and organizational citizenship behaviors. Leadership Quarterly, 2012, **23**(1): 1-12.
https://doi.org/10.1016/j.leaqua.2011.11.001

[33] Gross JJ. Handbook of emotion regulation: Guilford publications, 2013.

[34] Farooq Q, Hao Y, Liu X. Understanding corporate social responsibility with crosscultural differences: A deeper look at religiosity. Corp Soc Resp Env Ma. **2019**: 1-7.
https://doi.org/10.1002/csr.1736

[35] Liu W, Liao H and Campbell EM. "Interpersonal Emotion Management, Emotions, and Trust". Academy of Management Annual Meeting Proceedings, 2015, **1**: 17440.
https://doi.org/10.5465/ambpp.2015.17440abstract

[36] Hülsheger UR, Alberts HJ, Feinholdt A, *et al*. Benefits of mindfulness at work: the role of mindfulness in emotion regulation, emotional exhaustion, and job satisfaction. J Appl Psychol, 2013, **98**(2): 310-325.
https://doi.org/10.1037/a0031313

[37] Matta FK, Erol-Korkmaz HT and Johnson RE, *et al*. Significant work events and counterproductive work behavior: The role of fairness, emotions, and emotion regulation. Journal of Organizational Behavior, 2014, **35**(7): 920-944.
https://doi.org/10.1002/job.1934

[38] Farooq Q, Fu P, Hao Y, *et al*. A Review of Management and Importance of E-Commerce Implementation in Service Delivery of Private Express Enterprises of China, (2018). SAGE Open, 2019.
https://doi.org/10.1177/2158244018824194

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RESEARCH ARTICLE

Measurement invariance of maternal ratings of ADHD symptoms across clinic referred children's with and without ADHD

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Abstract: The study examined the measurement invariance (configural, metric, scalar, and error variances) and factor mean scores equivalencies of a modified version of the Strengths and Weaknesses of ADHD-Symptoms and Normal Behavior Scale (SWAN-M) across ratings provided by mothers of clinic-referred children and adolescents, diagnosed with (N = 666) and without (N = 202) ADHD. Confirmatory factor analysis (CFA) of these ratings provided support for the bi-factor model of ADHD [orthogonal general and specific factors for inattention (IA) and hyperactivity/impulsivity (HI) symptoms]. Multiple-group confirmatory factor analysis (CFA) of the bi-factor model supported full measurement invariance. Findings also showed that for latent mean scores, the ADHD group had higher scores than the non-ADHD group for the ADHD general and IA specific factors. The findings indicate that observed scores (based on maternal ratings of the SWAN-M) are comparable, as they have the same measurement properties. The theoretical, psychometric and clinical implications of the findings are discussed.

Keywords: strengths and weaknesses of ADHD-Symptoms and Normal Behavior Scale, factor structure, measurement invariance, children and adolescents, mother ratings

1 Introduction

Since the publication of the 4th edition of the Diagnostic and Statistical Manual of Mental Disorders,[1] a number of rating scales comprising the ADHD symptoms for completion by parents and teachers have been developed. The symptoms proposed for ADHD in the current DSM-5[2] are highly comparable to those in DSM-IV and its text revised edition DSM-IV TR.[3] Thus DSM-IV/DSM-IV TR based ADHD scales can be used to measure the current DSM-5 ADHD symptoms. DSM-5, DSM-IV TR and DSM-IV list the same eighteen ADHD symptoms under two separate groups, namely inattention (IA) and hyperactivity/impulsivity (HI), with nine symptoms for each group. Concurrent to this, most recently used ADHD rating scales have the 18 ADHD symptoms, word-to-word, as presented in DSM-IV, but with the word often omitted in the description of the symptoms.[4]

ADHD rating scales are often used in research and clinical settings. In that line, Burns, Walsh, Servera, Lorenzo-Seva, Cardo and Rodrguez-Fornells (2013) have noted that ADHD rating scales have made extensive contributions to our knowledge and understanding of ADHD. Furthermore, ADHD rating scales have been validated and show specificity/sensitivity in identifying individuals with ADHD.[5,6] Consequently, ADHD ratings have been used for screening ADHD (*e.g.* identifying cases for more comprehensive evaluation for presence of ADHD), identifying individuals with ADHD,[7,8] facilitating formal diagnosis (e.g. obtaining teacher ratings to establish cross situational consistency of ADHD manifestations), and monitoring treatment (including medication) effects.[9] Given the extensive and diverse clinical use of ADHD rating scales, it is important that there is appropriate psychometric data supporting the ways they are used.

As already mentioned, among other uses, ADHD rating scales have been used clinically to facilitate the detection of children who could potentially have ADHD, and for separating children into groups of those with and without ADHD.[9] Creditable use for this purpose requires that there is measurement invariance confirmed for the ADHD symptom ratings across these groups. Provided the dearth of such findings, the present study examined the measurement invariance across those with

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and without an ADHD diagnosis, based on mother-ratings of their clinic-referred children's and adolescent's ADHD symptoms. These were examined using a slightly modified version of the Strengths and Weaknesses of ADHD-Symptoms and Normal Behavior Scale.[10] The SWAN is an ADHD rating scale, corresponding to DSM-IV ADHD symptoms, and is accordingly reflective of the relevant DSM-5 criteria.

Interestingly, confirmatory factor analysis (CFA) of the ratings of ADHD symptoms in many different versions of ADHD rating scales of community and clinic-referred children and adults have generally provided support for the theorized bi-factor model, with separate factors for the IA and HI symptoms.[11,12] However, many recent CFA studies of ADHD rating scales have shown more support for a bi-factor model,[13,14] across informants (parent, teacher, self), methods (questionnaires, interviews), participants age groups (preschool, school-aged, adolescents, adults) and participants cultural background.[15] A bi-factor model is an orthogonal first-order factor model with a general factor and specific or group factors for different dimensions in the model (see Figure 1). In such a model, the general factor explains the covariance across all the items, and the specific factors explain the unique covariance of the items within the relevant dimensions, after accounting for the general factor.[16] Thus, the ADHD bi-factor model (see Figure 1) has an ADHD general factor on which all the IA and HI symptoms load, and separate orthogonally related specific factors for the IA and HI symptom groups, after removing the variances captured by the general factor. It is notable that past studies have reported that much of the reliable variance for ADHD is captured by the general factor, with very low variances remaining to be explained by the specific factors.[17]

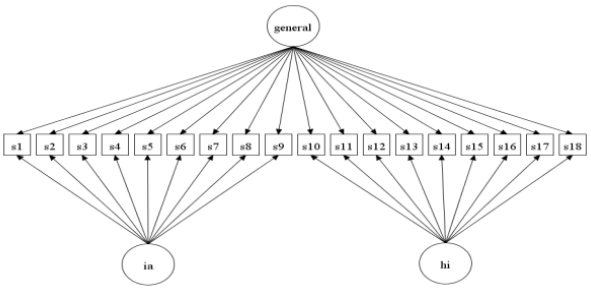

Figure 1. Schematic diagram of bi-factor ADHD models

Regardless of what is the best factor model for the ADHD symptoms, it is critical for the accurate use of the ADHD ratings to distinguish those with and without ADHD diagnosis, that there is measurement invariance for these ratings across these groups. In general, measurement invariance across groups deals with whether the observed scores on a measure are the same across the groups when these scores "represent" the same level (intensity, severity) of the underlying latent trait score.[18,19] Lack of support for invariance indicates that the scores obtained by the groups cannot be accurately compared on the measure used, since any difference could be confounded by discrepancies in the scaling properties of the measure for the groups.[20] When applied to ADHD rating scales, measurement invariance across groups of children with and without ADHD refers to observed ADHD scores being the same across these groups, when individuals in the groups have the same level of the underlying ADHD latent trait.[21] Lack of support for measurement invariance means that the ADHD scores obtained by these two groups cannot be accurately compared, as their differences could be explained by variations in the psychometric properties of the measures across the groups. Expressed differently, the same observed scores for the two groups may not reflect the same level of the underlying ADHD construct. Thus, lack of support for invariance across the groups for ratings of ADHD symptoms could seriously question the current practice of deriving groups of children with and without ADHD, using ADHD rating scales.[22] If ADHD symptom ratings for these groups are to be compared, then measurement invariance for them needs to be confirmed in the first instance.[23] Additionally, in relation to research, lack of measurement invariance would raise questions about the validity of existing ADHD findings from studies based on administration of ADHD rating scales across children with and without an ADHD diagnosis.

A powerful method for examining measurement invariance is the multiple-group mean and covariance structures CFA approach. Assuming that the indicator-ratings are treated as continuous scores, this approach can test for configural invariance (same overall factor structure), item factor loadings invariance (same strength of the associations of items with the first-order factors), item intercepts invariance (equivalency in item intercepts values), and error variances or uniqueness invariance (equivalency in the error variances of the items or variances of the items not attributed to the underlying constructs). When there is support for invariance for item factor loadings and intercepts, the groups can be also compared for structural invariance (equivalencies for variances and covariances), and differences in their latent factor mean scores.[24,25]

There are reasons to suspect that ADHD symptoms may lack full measurement invariance across maternal ratings of children with and without ADHD. Specifi-

cally, available studies have shown that ADHD ratings are vulnerable to the "halo" effect.[26–29] The "halo" effect occurs when a person, who is displaying one discrete behavior is rated as exhibiting other behaviors, even when those behaviors are not observed. The "halo" effect could be unidirectional (presence of primary symptom leads to a secondary symptom being falsely endorsed) or bidirectional (presence of a primary symptom inflates ratings of a secondary symptoms and the presence of the secondary symptom also inflates ratings of the primary symptom). Irrespective of these, the outcome of "halo" effect is that it may lead to a "self-fulfilling prophecy process", that could in term contribute to the excessive overestimation (biases and distortions) of one or multiple symptoms. In relation to ADHD rating scales in particular, "halo" effect has been revealed for teacher, college student, and parent ratings of ADHD symptoms. Specifically, the DeVries, *et al*. (2017) study, involving parent ratings, identified the IA symptoms of "Difficulty sustaining attention", and "Doesnt seem to listen", as particularly prone to "halo" effect. In terms of proneness to "halo" effect responses, it could be assumed that ones knowledge and experience of the set of symptoms being rated could influence his/her proneness to engage in responses characterized and/or influenced by "halo" effect. Following that line of thought, an Australian-based study has shown that although the core features (symptoms) of ADHD are well-known in the community, there are misconceptions and discrepancies about many ADHD aspects, especially between individuals who have had contact with ADHD in their own families and those who have had no such exposure.[30] There is also evidence of high co-occurrence of ADHD in parents and children.[31,32] Thus, it could be speculated that compared to parents of children without ADHD, parents of ADHD children could be more knowledgeable about and experienced with ADHD, and consequently more prone/sensitive to "halo" effect responses, or a distorted estimation of ADHD symptoms in their off-springs. Expressed differently, "halo" effects could result in maternal ratings of the ADHD symptom that may differ from the actual trait level, confounded by their level of experience of the diagnosed behaviors. Viewed in terms of measurement invariance, this could be reflected by varying intercepts for the ADHD symptoms, or lack of scalar invariance.

Given the lack of measurement invariance data for the ADHD symptoms across those with and without the ADHD diagnose, and the possibility that these symptoms could lack measurement invariance across these groups, the major goal of this study was to used multiple-group CFA to examine measurement invariance for the ADHD symptoms across those with and without the ADHD diagnose. The study used successive CFA models to examine measurement invariance (configural, metric, scalar and uniqueness) across mother ratings of clinic-referred children and adolescents (referred henceforth as youth) with ADHD and without ADHD. Ratings were obtained using a modified version of the SWAN,[33] a widely used ADHD rating scale.[34] As there is most support for the ADHD bi-factor model, the study examined measurement invariance across the groups for the ADHD symptoms, based on this model. Given the possible "halo" effects for the ADHD symptoms reported by DeVries, *et al.*, (2017), lack of scalar invariance was expected particularly so for the IA symptoms "Difficulty sustaining attention", and "Doesnt seem to listen". It is to be noted that this is the first study to evaluated measurement invariances for the ADHD symptoms across youths with and without ADHD. Thus the findings from the study would be novel and add importantly to existing measurement invariance data for the ADHD symptoms, and thereby contribute to research and clinical practice in ADHD.

2 Methods

2.1 Participants

The current study used archival data collected at the Academic Child Psychiatry Unit (ACPU) of the Royal Children's Hospital (RCH), Melbourne, Australia. The ACPU is an out-patient psychiatric unit that provides services for children and adolescents with behavioral, emotional, and learning problems. For the present study, records of children and adolescents, aged between 7 and 17 years, referred between 2008 and 2016, who were assessed with the modified SWAN (SWAN-M) were used. In all, there were 868 children and adolescents. These individuals were divided into those with a diagnosis of ADHD (N = 666) and those without a diagnosis of ADHD (N = 202). The ADHD group included those with Combined type (N = 422), Inattentive type (N = 187) and Hyperactive/Impulsivity type (N = 57). The ACPU diagnostic procedure for all disorders is described in the "Procedure" subsection of the present manuscript.

Table 1, 2 presents some background and demographic information of the two groups, including age, gender, mother and father employment status and highest education levels completed, family income, parental relationship status. The results of the comparisons between those with and without ADHD for the background and demographic information together with effect sizes for these comparisons are also presented. We have not included information on race/ethnicity as this data was not

recorded in the archival data collected at the ACPU.

As shown in Table 1, 2, the mean (SD) for ages for the ADHD group and non-ADHD groups were 11.22 (3.34) years and 10.54 (3.11) years, respectively. The non-ADHD group was significantly older, and comprised relatively more females than males. The Cohen's d values for differences considering age and gender composition of the groups were small. The scores' comparisons for mother and father employment and education, family income and parental relationship status showed no significant group differences. Thus, on the whole, the groups were reasonably well matched for all background and demographic variables examined, except for small differences for age and gender.

Table 1, 2 also includes the frequencies and percentages of different groups of disorders in the groups with and without ADHD diagnosis. In the table, the label "any anxiety disorder" includes Separation Anxiety, Social Phobia, Specific Phobia, Panic, Agoraphobia, Generalized Anxiety, Obsessive Compulsive and/or Post-Traumatic Stress Disorders, while the label "depression disorders" includes those with Dysthymic and/or Major Depressive Disorders. In terms of clinical diagnoses, based on DSM-IV TR, 41.1% reached criteria for depression disorders, 74.9% had at least one or more anxiety disorders, and 31.1% presented with either ODD or CD. Although, there were significantly more individuals with ODD/CD in the ADHD group, the Cramer's V value for this difference was small, while there was no significant statistical difference in the number of individuals with depression disorders or anxiety disorders across the two groups. Nevertheless, there was high comorbidity, with 81.00% of the participants being diagnosed with two or more disorders.

2.2 Measures

First, we searched for the keyword "Google Trends" in the "Abstract-Title-Keywords" field for the journal articles. The first two articles using Google Trends were begun in 2009. The search returned 96 publications.

Strengths and Weaknesses of ADHD-Symptoms and Normal Behavior Scale.[35] The SWAN lists the 18 DSM-IV symptoms for ADHD. It is noted that although the instrument is developed with DSM-IV ADHD symptoms in mind, these 18 symptoms are the same in DSM-5. Unlike the way the symptoms are worded in DSM-IV or DSM-5, and also other ADHD rating scales, the SWAN has the ADHD symptoms reworded such that they reflect strengths rather than weaknesses. For example, the DSM-IV symptom "Often avoids, dislikes, or reluctantly engages in tasks requiring sustained mental effort is reworded as "Engage in tasks that require sustained mental effort." In this study, the SWAN was completed by the mothers of the children. Respondents rated the occurrence of each symptom over the past 6-months on a 5-point scale, ranging from "far below average" (scored 1) to "far above average" (scored 5), relative to other children of the same age. Although the original SWAN has a reference period of one month, a six months reference period was used here for reasons of clinical utility/relevance within the context of ACPU (six months is the ADHD symptoms reference period in DSM-IV/DSM-IV TR). Furthermore, although the original version of the SWAN involved a 7-point scale, initial piloting of the 7-point scale version of the SWAN in the ACPU indicated virtually no endorsement of levels -1 (slightly below average) and +1 (slightly above average). Thus, it was advocated to collapse/merge levels -1 and -2 of the original scale into a single category (-1; below average), and levels +1 and +2 into another single category (+1; above average), thereby resulting to the 5-point scale used in the current study (-1 = far below; -2= below; 3 = average; +1 = above, +2 = far above). Additionally, to ease interpretation of the findings, all symptoms were recoded so that higher scores reflected higher symptoms (-1 = far below average (-1) recoded 5; below average (-2) recoded 4, average (3) recoded as 3; below average (-2) recoded 4, and far below average (-1) recoded 5. Considering the present data, the internal consistency coefficient alpha values were 0.89, 0.89. 0.92 for the IA and HI and combined ADHD (IA plus HI) factors, respectively.

Anxiety Disorders Interview Schedule for Children. The ADISC-IV is a semi-structured interview, based on the DSM-IV-TR diagnostic system. The diagnoses reported earlier (see sample description) were derived from this schedule. Although ADISC-IV has been designed primarily to facilitate the diagnosis of the major childhood internalizing disorders, it can also be used for diagnosing the major childhood externalizing disorders. In that context, there is support for the concurrent validity of the ADISC-IV ADHD module in the ADHD groups [based on parent interviews, and parent and child interviews using the ADISC-IV, ADHD groups (IA, HI) did not differ from one another, and showed greater externalizing and attention problems than a no ADHD group].[35] The ADISC-IV diagnostic guideline instructs that the child be given diagnosis of all disorders meeting the relevant criteria. The scores of ADISC-IV have been shown to present sound psychometric properties,[36] excellent test-retest reliability over a 7 to 14-day interval and Kappa (an index of inter-rater agreement) values for interviews with parents ranging from 0.65 to 1.00. However, it should be highlighted that there are differ-

Table 1. Demographics Information for Participants in the Without ADHD and With ADHD Groups

Variable/Categories	Without ADHD	With ADHD	Test Statistic	Effect size
Number	202	666		
Age – Mean (*SD*)	11.22 (3.34)	10.54 (3.11)	*t(df = 866) = 2.66**	0.22
Gender [N, (percentage)]				
Boy	125 (14.4)	509 (58.6)	χ^2 (*df*= 1) = 16.65	0.14
Girl	77 (8.9)	157 (18.1)		
Mother employment [N, (percentage)]				
Employed	110 (13.0%)	304 (36.0%)	χ^2 (*df*= 6) = 11.17	0.115
Home duties	59 (7.0%)	238 (28.2%)		
Pensioner	9 (1.1%)	39 (4.6%)		
Unemployed	12 (1.4%)	21 (2.5%)		
Student	5 (0.6%)	19 (2.2%)		
Retired	0 (0.0%)	4 (0.5%)		
Other	3 (0.4%)	22 (2.6%)		
Total	198 (23.4%)	647 (76.6%)		
Mother education [N, (percentage)]				
No schooling	0 (0.0%)	1 (0.1%)	χ^2 (*df*= 6) = 5.95	0.084
Some primary school	1 (0.1%)	1 (0.1%)		
Primary school	1 (0.1%)	2 (0.2%)		
Some secondary school	51 (6.1%)	218 (26.0%)		
Secondary school	30 (3.6%)	83 (9.9%)		
Technical, trade	47 (5.6%)	152 (18.1%)		
Tertiary	66 (7.9%)	186 (22.2%)		
Total	196 (23.4%)	643 (76.6%)		
Father employment [N, (percentage)]				
Employed	145 (18.8%)	462 (59.8%)	χ^2 (*df*= 6) = 10.25	0.117
Home duties	7 (0.9%)	8 (1.0%)		
Pensioner	4 (0.5%)	33 (4.3%)		
Unemployed	19 (2.5%)	53 (6.9%)		
Student	2 (0.3%)	2 (0.3%)		
Retired	1 (0.1%)	1 (0.1%)		
Other	7 (0.9%)	28 (3.6%)		
Total	185(24.0%)	587(76.0%)		
Father education [N, (percentage)]				
No schooling	0 (0.0%)	1 (0.1%)	χ^2 (*df*= 6) = 7.02	0.096
Some primary school	2 (0.3%)	2 (0.3%)		
Primary school	1 (0.1%)	13 (1.7%)		
Some secondary school	61 (8.0%)	221 (28.9%)		
Secondary school	21 (2.7%)	67 (8.7%)		
Technical, trade	47 (6.1%)	145 (18.9%)		
Tertiary	53 (6.9%)	132 (17.2%)		
Total	185 (24.2%)	581 (75.8%)		

Note: *p<0.05; ***p<0.001

Table 2. Demographics Information for Participants in the Without ADHD and With ADHD Groups

Variable/Categories	Without ADHD	With ADHD	Test Statistic	Effect size
Number	202	666		
Age – Mean (*SD*)	11.22 (3.34)	10.54 (3.11)	$t(df = 866) = 2.66$*	0.22
Gender [N, (percentage)]				
Boy	125 (14.4)	509 (58.6)	χ^2 (df= 1) = 16.65	0.14
Girl	77 (8.9)	157 (18.1)		
death of both parents	0 (0.0%)	1 (0.1%)		
other, please describe	4 (0.5%)	19 (2.2%)		
Total	198 (23.3%)	652 (76.7%)		
Family income				
$0	0 (0.0%)	2 (0.2%)	χ^2 (df= 4) = 3.03	0.061
$0-$30,000	53 (6.4%)	205 (24.9%)		
$30,000 - $40,000	21 (2.6%)	69 (8.4%)		
$40,000 - $50,000	17 (2.1%)	50 (6.1%)		
$50,000 and over	104 (12.7%)	301 (36.6%)		
Total	195 (23.7%)	627 (76.3%)		
Presence of any anxiety disorder [N,(percentage)]				
Without [218 (25.1%)]	50 (5.8%)	168 (19.4%)	χ^2 (df= 1) = 0.02	-0.005
With [650 (74.9%)]	152 (17.5%)	498 (57.4%)		
Presence of any depressive disorder [N, (percentage)]				
Without [511 (58.9%)]	114 (13.1%)	397 (45.7%)	χ^2 (df= 1) = 0.65	-0.027
With [357 (41.1%)]	88 (10.1%)	269 (31.0%)		
Presence of Oppositional Defiant Disorder/Conduct Disorder (ODD/CD) [N, (percentage)]				
Without [270 (31.1%)]	102 (11.8%)	168 (19.4%)	χ^2 (df= 1) =46.18***	0.231
With [598 (68.9%)]	100 (11.5%)	498 (57.4%)		

Note: *p<0.05; ***p<0.001

ent ADISC-IV versions for parent interview and for child interview, and clinical diagnosis can be based either on parent or child interview or on both interviews considered together.[37] All diagnoses reported in this study were based on parent interviews as there is evidence of poor levels of agreement for diagnosis between information across the child and parent versions of the ADISC-IV,[38] alongside with evidence that clinical interviews of children can lead to unreliable diagnosis.[39] Finally, in the present study, ADISC-IV interview data could not be considered for establishing measurement invariance of the ADHD symptoms, due to lack of relevant symptom level information in the ACPU archival data used.

2.3 Procedure

The study was approved by the RCH ethics committee as part of ACPU's comprehensive examination of children and adolescent referred for psychological problems. Each legal guardian and participant provided informed written consent for any data provided by them to be used in future research studies. This is a standard part of the ACPU assessment procedure.

All participants and their parents participated in separate interviews and testing sessions which were held over two days during the admission of the child. Breaks were provided as necessary. In all cases, parental consent forms were completed prior to the assessment. The parent and child comprehensive data collected covered demographic, medical (primarily neurological and endocrinological), child educational (including standardized measures of IQ and academic achievement tests of reading, arithmetic and language), child psychological (standardized measures of behavioral and emotional self-rating and parent rating scales, diagnostic interviews using the child and parent versions of the ADISC-IV, and neuropsychological measures), family related (standardized measures of family maladjustment, and mari-

tal satisfaction), and maternal mental health (standardized measures of behavioral and emotional symptoms) aspects. Information was also obtained from teachers using various checklists and questionnaires, such as the Teacher Report Form[40] and the Conners 3-Teacher.[41] However, for the current study only the information for the ADISC-IV from parents and parent completed SWAN-M ratings were used.

All psychological data were collected by (specially trained) research assistants, who were advanced masters or doctoral students in clinical psychology, and under the supervision of two registered clinical psychologists. Prior to data collection, the research assistants were provided with extensive supervised training and practice by the two ACPU employed registered psychologists. The training for the ADISC-IV-P included observations of the interview process being administered by the psychologists. The research assistants commenced administering the ADISC-IV only after they attained competence in its administration, as assessed by their supervisors. At this point it should be noted that there was adequate inter-rater reliability for the diagnoses made between the research assistants and the supervisors, and between the research assistants themselves (kappa = 0.88). Standardized procedures were applied for the administration of all measures. Where necessary (due to English literacy reasons), researchers read the items to the participants (approximately 5% of the sample). Approximately 95% of the parent ADISC-IV interviews involved mothers only, and the rest involved fathers only or both fathers and mothers together. Using the categorical data from the parent ADISC-IV, clinical diagnosis was determined by two consultant child and adolescent psychiatrists, who independently reviewed these data. The inter-rater reliability for diagnoses of the two psychiatrists was high (kappa = 0.90). As noted earlier, for the current study, only the records of children and adolescents which involved scores for the SWAN-M, rated by mothers were used.

2.4 Statistical procedures

All CFA models in the study were conducted using the robust maximum likelihood (MLR) estimation in the Mplus, software Version 7.[42] Given that there were five response options, the use of MLR-based extraction is appropriate,[43,44] and can correct for potential deviations from normality in the data set. At the statistical level, model fit was examined using robust maximum likelihood (MLR) χ^2 values. However, as χ^2 values, including MLR χ^2 values, are inflated by large sample sizes, the fit of the models was also examined using the approximate fit indices of the root mean squared error of approximation (RMSEA), the comparative fit index (CFI), and the Tucker-Lewis Index (TLI). According to the guidelines suggested by Hu and Bentler (1998), RMSEA values close to 0.06 or below can be considered as good fit, 0.07 to $<$ 0.08 as moderate fit, 0.08 to 0.10 as marginal fit, and $<$ 0.10 as poor fit. For the CFI and TLI, values of close to 0.95 or above are taken as indicating good model-data fit, and values of 0.90 and $<$ 0.95 are taken as acceptable fit. Differences between nested models were computed using the difference in MLRχ^2 values (computed using the scaling correction formula for MLR;.[45] An alpha value of 0.01 was used to allow for more stringent Type II error control in the models compared.

Measurement invariance across the ADHD and non-ADHD groups for the bi-factor model was tested using the multiple-group CFA invariance procedure proposed by in the literature. Specifically, this study tested in sequence, configural, metric, scalar and error variances invariance (equality for items uniqueness) across the groups. Metric, scalar and uniqueness invariance are alternatively referred as weak, strong and strict invariance. Due to space limitations, details of the procedure used are not provided. Readers are referred to Brown (2006) for details, including the steps for testing partial invariance. When there is some support for measurement invariance (full or partial), the groups can be compared for latent mean scores, taking into account the non-invariance in the measurement model. For the current study, the non-ADHD group served as the reference group.

3 Results

3.1 Missing Values

There were no missing values in the data set used.

3.2 Fit for the Bi-factor ADHD Models for the ADHD and non-ADHD Groups

Prior to the test for measurement invariance, the fit of the bi-factor ADHD models in the two groups were examined. The findings for the non-ADHD group indicated close to good fit in terms of the RMSEA value, marginally acceptable fit in terms of the CFI value, and poor fit in terms of the TLI value, χ^2 (df = 117) = 218.63, $p < 0.001$; RMSEA = 0.066 (90% CI = 0.052 - 0.079); CFI = 0.909 and TLI = 0.881. For the ADHD group, the CFI, TLI and RMSEA values indicated good fit, χ^2 (df = 117) = 267.89, $p < 0.001$; RMSEA = 0.0446 (90% CI = 0.037 - 0.0519); CFI = 0.962 and TLI = 0.950. These findings can be interpreted as indicating reasonable level

Table 3. Invariance for the ADHD Symptoms across Children With and Without ADHD Diagnosis

			Model Fit			Model Difference		
Models (M)	MLRχ^2	*df*	RMSEA (90% CI)	CFI	TLI	ΔM	Δ*df*	ΔMLRχ^2
M1: Configural invariance	486.905	234	0.050 (0.0443 -0.056)	0.95	0.935	-	-	-
M2: Metric invariance	541.27	270	0.048 (0.042 - 0.054)	0.946	0.939	M2 – M1	36	56.52
M3: Thresholds invariance	567.77	285	0.048 (0.042 -0.054)	0.944	0.94	M3 – M2	15	26.08
M4: Error variances invariance	586.4	303	0.047 (0.041 -0 .052)	0.944	0.943	M4– M3	18	22
M5: Invariance for latent factor mean	794.57	306	0.061 (0.056 - 0.066)	0.903	0.903	M5 – M4	3	258.03***
M5.1: Invariance for ADHD latent factor mean	644.72	305	0.051 (0.045 - 0.056)	0.933	0.932	M5.1– M4	1	91.05***
M5.2: Invariance for IA latent factor mean	587.91	304	0.047 (0.041 - 0.052)	0.944	0.943	M5.2– M4	2	1.43

of fit for the the bi-factor ADHD models for both the groups.

3.3 Measurement Invariance for the Bi-factor Model Across the ADHD- and ADHD+ Groups

For the bi-factor model, the fit indices for the baseline or configural invariance model (M1 in Table 3) were χ^2 (df = 234) = 486.90, $p < 0.001$; RMSEA = 0.050; CFI = 0.950 and TLI = 0.935. Thus, the CFI, and RMSEA values indicated good fit, and the TLI indicted acceptable fit. Overall, there was adequate support for the configural invariance. There was no difference between the configural invariance model (M1 in Table 3) and the metric invariance model (M2 in Table 3); Δdf = 36; Δ MLMχ^2 = 56.52, $p < 0.01$); the metric invariance model and the scalar invariance model (M3 in Table 3); Δdf = 15; Δ MLMχ^2 = 26.08, ns), and the scalar invariance model and the error variances invariance model (M4 in Table 3); Δdf = 18; Δ MLMχ^2 = 22.00, ns). Thus there was support for full measurement invariance for ratings of the ADHD symptoms across the ADHD and non-ADHD groups.

Given support for invariance for the measurement model, further analysis was conducted for equivalency in latent mean scores. For this analysis, the reference group was the non-ADHD group (thus their latent scores were fixed to 0), and the focus group was the ADHD group (thus their latent scores were freely estimated). As indicated in Table 3, for the criteria used here ($p < 0.01$), the groups differed for the general ADHD latent factor, and IA specific factor. The standardized mean score (SE) for ADHD and IA factors for the ADHD group were 1.182 (0.091) and 0.872 (0.110), respectively. The positive value suggests that the ADHD group had higher scores for ADHD. The standardized mean score difference (same as unstandardized mean score in Mplus) can be interpreted as akin to Cohen's (1992) d effect sizes. Considering d effect sizes differences, Cohen's recommended magnitudes are as follows: $<$ 0.20 = negligible; $\geqslant$ 0.20 and $<$ 0.50 = small; $\geqslant$ 0.50 and $<$ 0.80 = medium; $\geqslant$ 0.80 = large. This means the magnitude of the differences between ADHD and non-ADHD for the ADHD general and the IA specific factors were both of large effect size.

4 Discussion

The major aim of the study was to use multiple group CFA to examine measurement invariance across maternal ratings of the SWAN-M (47) for those with and without ADHD diagnosis. Initial analyses indicated reasonable level of support for the bi-factor models across the two groups. Consistent with these findings, existing data also show support for the bi-factor model. The findings for the multiple-group CFA analyses showed acceptable fit for the configural model. Furthermore, there was no difference between the configural model and the metric invariance model, the scalar invariance model and the metric invariance model and the error variances model and the scalar invariance model. Thus the findings for SWAN-M indicated support for the configural model (same pattern of factor structure), and for full measurement invariance for the metric (same factor loadings), scalar (same response categories), and error variances (same unique variances) models, respectively, for ratings from clinic-referred children and adolescents with and without an ADHD diagnosis. Additionally, the findings revealed that the ADHD group had higher scores, with large effect sizes, for the ADHD general factor and the IA specific factor.

To date, no previous study had assessed measurement invariance for the ADHD symptoms across those with and without an ADHD diagnosis. Thus, the findings in the current study can be seen as providing novel measurement invariance data for ADHD symptoms. Thus the findings from the study add importantly to existing measurement invariance data for the ADHD symptoms, and thereby contribute to research and clinical practice in ADHD.

The findings have important conceptual, theoretical and clinical implications. At the conceptual and theoretical level, it was speculated that some of the ADHD

symptoms would lack scalar invariance. This hypothesis was based on existing data showing that due to parents of ADHD children having greater knowledge and experience with ADHD symptoms, their ratings of ADHD behaviors of their ADHD diagnosed children would be more prone to distorting "halo" effects, than the parent ratings referring to children without an ADHD diagnosis. Consequently, these parents were assumed to potentially provide subjectively exacerbated scores when rating their children. However, the support for full scalar invariance revealed across the two groups studied, indicate that the greater knowledge and experience of ADHD symptoms, that likely characterize parents of ADHD diagnosed children, do not necessarily lead to "halo" effects distorting their ADHD SWAN-M scores. In relation to clinical implications, the support for measurement invariance signifies that observed scores of maternal ratings of children with and without ADHD considering ADHD symptoms can be compared directly at least as measured by mother ratings on the modified SWAN for a clinical population. Demonstration of measurement invariance, especially scalar invariance is an essential requirement if maternal ratings on ADHD scales are to be considered for across group comparisons in clinical and research settings to evaluate correlates of ADHD. In this respect, it is worth stressing that, as the bi-factor model was supported, it could be more appropriate to use the total score for the ADHD scale (as it related to the general factor), than the separate IA and HI scores, for group comparisons.

Although the current study has provided useful new information about the measurement invariance of ratings of the ADHD symptom based on the SWAN-M, the findings and their interpretations embrace certain limitations. First, it is possible that factors such as age, gender, ethnicity, comorbidity, and maternal psychopathology could influence ratings of ADHD symptoms.[46] The failure to control for these effects in this study could have confounded the results. Second, because measurement invariance was examined specifically for clinic referred children using maternal ratings of the SWAN-M,[47] the findings here could be unique to clinical referred groups, to the form of the SWAN-M used, and/or to maternal ratings. Third, all the participants in this study were from the same clinic, and therefore, they did not constitute a random sample. Thus, it is likely that this may introduce a bias for the sample examined, limiting the generalizability of the findings and the conclusions made in this study. At a practical level, however, it is difficult and virtually impossible to obtain random samples involving clinical samples. Fourth, as it is possible that as the current sample was heterogeneous in terms of psychopathology, the findings may have been additionally confounded. Finally, the use of archival data is interwoven with the the typical limitations of using archival data.[48] In view of these limitations some may wish to consider the findings and interpretations made in this study as tentative. Therefore, it could be useful if future studies took into consideration the limitations illustrated in the present study.

5 Authors' contributions

RG conceived and designed the study, performed the statistical analyses, and contributed to the writing up of all sections of the paper. AC was in charge of collecting the data, and contributed to the writing up of the paper. VS checked the statistical analyses, and contributed to the writing up of the paper.

References

[1] American Psychiatric Association.Diagnostic and Statistical Manual of Mental Disorders (4th ed.). Washington, 1994.

[2] American Psychiatric Association. Diagnostic and statistical manual of mental disorders DSM-IV TR (Text Revision). Washington, 2000.

[3] American Psychiatric Association. Diagnostic and statistical manual of mental disorders (5th ed.). Washington, 2013. https://doi.org/10.1176/appi.books.9780890425596

[4] Gomez R and Stavropoulos V. Parent Ratings of the Strengths and Difficulties Questionnaire: What Is the Optimum Factor Model? Assessment, 2017. https://doi.org/1073191117721743.

[5] Daley D. Attention deficit hyperactivity disorder: A review of the essential facts. Child Care, Health and Development, 2006, **32**: 193-204. https://doi.org/10.1111/j.1365-2214.2006.00572.x

[6] Power TJ, Doherty BJ, Panichelli-Mindel SM, *et al*. The predictive validity of parent and teacher reports of ADHD symptoms. Journal of Psychopathology and Behavioral Assessment, 1998, **20**: 5781. https://doi.org/10.1023/A:1023035426642

[7] Gaub M and Carlson CL. Behavioral characteristics of DSM-IV ADHD subtypes in a school-based population. Journal of Abnormal Child Psychology, 1997, **25**: 103-111. https://doi.org/10.1023/A:1025775311259

[8] Teegarden LA and Burns GL. 12-month stability of ADHD, opposition defiant disorder, and conduct disorder symptoms in kindergarten through fifth grade children based on a single information source: Usefulness of teacher ratings for the creation and study of the ADHD subtypes. Child & family behavior therapy, 1999, **21**(3): 53-70. https://doi.org/10.1300/J019v21n03_04

[9] Aman MG and Pearson DA. Monitoring, measuring drug effects. II. Behavioral, emotional, and cognitive effects. In: J. S. Werry & Aman, M. G. (eds). Practitioner's Guide to Psychoactive Drugs for Children and Adolescents. 1999, 99-164. New York: Plenum Press. https://doi.org/10.1007/978-1-4899-0086-9_5

[10] Gomez R, Vance A and Stavropoulos V. Test-Retest Measurement Invariance of Clinic Referred Childrens ADHD Symptoms. Journal of Psychopathology and Behavioral Assessment, 2017, 1-12. https://doi.org/10.1007/s10862-017-9636-4

[11] Swanson J, Schuck S, Mann M, *et al*. Categorical and dimensional definitions and evaluations of symptoms of ADHD: the SNAP and SWAN rating scales. University of California, Irvine, 2006.

[12] Gomez R, Burns GL, Walsh JA, *et al*. Trait, source and error variance in ADHD symptoms: A multitrait-multisource analysis with Australian and Brazilian children. Psychological Assessment, 2003, **15**: 3-16. https://doi.org/10.1037/1040-3590.15.1.3

[13] Gomez R, Harvey J, Quick C, *et al*. DSM-IV AD/HD: Confirmatory factor models, prevalence, and gender and age differences based on parent and teacher ratings of Australian primary school children. Journal of Child Psychology and Psychiatry, 1999, **40**: 265-274. https://doi.org/10.1111/1469-7610.00440

[14] Arias VB, Ponce FP and Nunez DE. Bifactor models of Attention-Deficit/Hyperactivity Disorder (ADHD): An evaluation of three necessary but underused psychometric indexes. Assessment, 2016(b). https://doi.org/10.1177/1073191116679260

[15] Gomez R, Vance A and Gomez RM. Validity of the ADHD bifactor model in general community samples of adolescents and adults, and a clinic-referred sample of children and adolescents. Journal of Attention Disorders, 2013. https://doi.org/10.1177/1087054713480034

[16] Burns GL, Walsh JA, Servera M, *et al*. Construct validity of ADHD/ODD rating scales: Recommendations for the evaluation of forthcoming DSM-V ADHD/ODD scales. Journal of Abnormal Child Psychology, 2013, **41**: 15-26. https://doi.org/10.1007/s10802-012-9660-5

[17] Reise SP. The rediscovery of bifactor measurement models. Multivariate behavioral research, 2012, **47**(5): 667-696. https://doi.org/10.1080/00273171.2012.715555

[18] Arias VB, Ponce FP, Martnez-Molina A, *et al*. General and specific attention-deficit/hyperactivity disorder factors of children 4 to 6 years of age: An exploratory structural equation modeling approach to assessing symptom multidimensionality. Journal of Abnormal Psychology, 2016(a), **125**: 125-137. https://doi.org/10.1037/abn0000115

[19] Cohen J. Statistical power analysis. Current directions in psychological science, 1992, **1**(3): 98-101. https://doi.org/10.1111/1467-8721.ep10768783

[20] Drasgow F and Kanfer R. Equivalence of psychological measurement in heterogeneous populations. Journal of Applied Psychology, 1985, **70**: 662-680. https://doi.org/10.1037/0021-9010.70.4.662

[21] Pontes HM, Stavropoulos V and Griffiths MD. Measurement Invariance of the Internet Gaming Disorder ScaleShort-Form (IGDS9-SF) between the United States of America, India and the United Kingdom. Psychiatry research, 2017, **257**: 472-478. https://doi.org/10.1016/j.psychres.2017.08.013

[22] Hu LT and Bentler PM. Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification. Psychological Methods, 1998, **3**: 424-453. https://doi.org/10.1037/1082-989X.3.4.424

[23] Meredith W. Measurement invariance, factor analysis, and factorial invariance. Psychometrika, 1993, **58**: 525-542. https://doi.org/10.1007/BF02294825

[24] Reise SP, Bonifay WE and Haviland MG. Scoring and modeling psychological measures in the presence of multidimensionality. Journal of personality assessment, 2013 **95**(2): 129-140. https://doi.org/10.1080/00223891.2012.725437

[25] DeVries LN, Hartung CM and Golden TL. Negative Halo Effects in Parent Ratings of ADHD and ODD. Journal of Psychopathology and Behavioral Assessment, 2017, **39**(2): 179-188. https://doi.org/10.1007/s10862-016-9560-z

[26] Hartung CM, Lefler EK, Tempel AB, *et al*. Halo effects in ratings of ADHD and ODD: Identification of susceptible symptoms. Journal of Psychopathology and Behavioral Assessment, 2010, **32**(1): 128-137. https://doi.org/10.1007/s10862-009-9135-3

[27] Hartun CM, Van Pelt JC, Armendariz ML, *et al*. Biases in ratings of disruptive behavior in children: Effects of sex and negative halos. Journal of Attention Disorders, 2006, **9**(4): 620-630. https://doi.org/10.1177/1087054705284233

[28] Jackson DA and King AR. Gender differences in the effects of oppositional behavior on teacher ratings of ADHD symptoms. Journal of Abnormal Child Psychology, 2004, **32**(2): 215-224. https://doi.org/10.1023/B:JACP.0000019772.71251.ff

[29] Gilmore L. Community knowledge and beliefs about ADHD. The Educational and Developmental Psychologist, 2010, **27**(1): 20-30. https://doi.org/10.1375/aedp.27.1.20

[30] Faraone SV, Monuteaux MC, Biederman J, *et al*. Does parental ADHD bias maternal reports of ADHD symptoms in children? Journal of consulting and clinical psychology, 2003, **71**(1): 168. https://doi.org/10.1037/0022-006X.71.1.168

[31] Manshadi M, Lippmann S, O'Daniel RG, *et al*. Alcohol abuse and attention deficit disorder. The Journal of clinical psychiatry, 1983, **44**(10): 379-380.

[32] Stavropoulos V, Mastrotheodoros S, Papapetrou S, *et al*. Measurement invariance: The case of measuring romantic attachment in Greek and Cypriot adolescents. European Journal of Developmental Psychology, 2017(a): 1-10. https://doi.org/10.1080/17405629.2017.1414696

[33] Stavropoulos V, Beard C, Griffiths MD, *et al*. Measurement invariance of the Internet Gaming Disorder ScaleShort-Form (IGDS9-SF) between Australia, the USA, and the UK. International Journal of Mental Health and Addiction, 2017(b): 1-16. https://doi.org/10.1007/s11469-017-9786-3

[34] Jarrett MA, Wolff JC and Ollendick TH. Concurrent validity and informant agreement of the ADHD module of the Anxiety Disorders Interview Schedule for DSM-IV. Journal of Psychopathology and Behavioral Assessment, 2007, **29**(3): 159-168. https://doi.org/10.1007/s10862-006-9041-x

[35] Silverman WK, Saavedra LM and Pina AA. Test-retest reliability of anxiety symptoms and diagnoses with anxiety disorders interview schedule for DSM-IV: Child and parent versions. Journal of the American Academy of Child and Adolescent Psychiatry, 2001, **40**(8): 937-944. https://doi.org/10.1097/00004583-200108000-00016

[36] Silverman WK and Albano AM. The Anxiety Disorders Interview Schedule for DSM-IV: Child Interview Schedule. San Antonio, Texas: Psychological Corporation, 1996.

[37] Grills AE and Ollendick TH. Multiple informant agreement and the anxiety disorders interview schedule for parents and children. Journal of the American Academy of Child & Adolescent Psychiatry, 2003, **42**(1): 30-40. https://doi.org/10.1097/00004583-200301000-00008

[38] Jensen PS, Rubio-Stipec M, Canino G, *et al*. Parent and child contributions to diagnosis of mental disorder: are both informants always necessary? Journal of the American Academy of Child & Adolescent Psychiatry, 1999, **38**(12): 1569-1579. https://doi.org/10.1097/00004583-199912000-00019

[39] Achenbach TM and Rescorla L. ASEBA school-age forms & profiles, 2001.

[40] Conners CK, Pitkanen J and Rzepa SR. Conners comprehensive behavior rating scale. In Encyclopedia of clinical neuropsychology. Springer New York, 2011. https://doi.org/10.1007/978-0-387-79948-3_1536

[41] Muthn LK and Muthn BO. Mplus users guide. Seventh Edition. Los Angeles, CA: Muthn & Muthn, 2012.

[42] DiStefano C. The impact of categorization with confirmatory factor analysis. Structural Equation Modeling, 2002, **9**: 327-346. https://doi.org/10.1207/S15328007SEM0903_2

[43] Lubke GH and Muthen BO.Applyingmultigroup confirmatory factor models for continuous outcomes to Likert scale data complicates meaningful group comparisons. Structural Equation Modeling, 2004, **11**: 514-534. https://doi.org/10.1207/s15328007sem1104_2

[44] Satorra A and Bentler PM. A scaled difference chi-square test statistic for moment structure analysis. Psychometrika, 2001, **66**(4): 507-514. https://doi.org/10.1007/BF02296192

[45] Cantwell DP. Attention deficit disorder: a review of the past 10 years. Journal of the American Academy of Child & Adolescent Psychiatry, 1996, **35**(8): 978-987. https://doi.org/10.1097/00004583-199608000-00008

[46] Rohde LA, Szobot C, Polanczyk G, *et al*. Attention-deficit/hyperactivity disorder in a diverse culture: do research and clinical findings support the notion of a cultural construct for the disorder? Biological psychiatry, 2005, **57**(11): 1436-1441. https://doi.org/10.1016/j.biopsych.2005.01.042

[47] Jones C. Archival data: Advantages and disadvantages for research in psychology. Social and Personality Psychology Compass, 2010, **4**(11): 1008-1017. https://doi.org/10.1111/j.1751-9004.2010.00317.x

[48] Brown TA. Confirmatory factor analysis for applied research. New York: Guilford Press, 2006.

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RESEARCH ARTICLE

Preliminary psychometric evidence of the Greek adaptation to the EC-CC HOME scale for use in institutional environments

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Abstract: Although lacking in official figures, latest reports from NGOs highlight that Greece has over 85 institutional settings that house more than 2,500 children, excluding unaccompanied minors entering the system continuously for the past few years. Given the impact that institutional care has been found to have on psychological and cognitive outcomes, the authors make the case for the adaptation of Early Childhood Child Care HOME (EC-CC-HOME) a world-renowned instrument that assesses children's child-care environment. In this instance, we have adapted the child-care version of HOME to assess the physical and organisations aspects of the residential environment, following the permission and through collaboration with the developer. This brief report presents some of the preliminary evidence of the first step undertaken towards the full adaptation of EC-CC-HOME in Greek and for use in institutional environments; participants were 29 children residing in such environments. Preliminary results on the psychometric characteristics of the measure, especially in relation to the learning aspect of the environment presented here, hold promise. This is an especially important first indication of how the measure works in view of the imminent adaptation of the scale to be used with institutional environments where children can benefit greatly from such a measure. Issues in relation to good practices in providing evidence for the psychometric characteristics of measures are briefly discussed as part of this investigation.

Keywords: Early Childhood Child Care HOME, HLE, institutional care, reliability, convergent validity

1 Introduction

Europe, on the whole, still relies on residential health or social care settings for children whose parents are unable to care for them. This is despite research advising against long-term residence in institutional care[1] . Focusing on the case of Greece, there is a dearth of data in order to provide comparative measures to track numbers of children in care across time. However, a report from the Roots Research Foundation[2] notes that in 2014, about 2,825 children lived in 76 different institutional settings.

These numbers should be placed in perspective by exploring the relationship between environment in residential care and development. Developmental delays, are indeed reported among children residing and growing up in institutional care, when compared to those in family settings[3–8] . Despite the years of research and methodological advances this view remains consistent: the living environments of institutional care fall short of typical family environments with regards to children's cognitive, social and emotional development[6] . Such results are closely linked to time spent within such settings. In particular, there is a negative linear correlation between time in institutional care and development up to 12 months of age[9] , while long term stay in institutions is associated with lower cognitive abilities, inability to form healthy attachment, indiscriminate friendliness and stereotypies[10] .

Institutional settings on the whole do not provide the stimulation and experiences needed for optimal brain development[11] . The quality of interactions between child and carer are of prime importance when considering this. Ratio of children to carers is often high, which in turn, translates to fewer meaningful interactions between carer and child.[5] This is perhaps associated with the reported lack of sensitivity in the interactions between them[13] , the lack of lasting and consistent relationships with carers, and, in the worst cases, institutional neglect[5] .

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In line with this evidence, creating the means to assess the quality of the physical, organizational, and interactional aspects of the residential environment within which children develop should be seen as important. In this case the assessment of the quality of the environment in institutional settings forms part of a bigger umbrella project, where we explore how children in institutional care differ in terms of cognitive and educational outcomes compared to typically developing matched controls in home settings, as well as the role of the environment in their attainment. Given this emphasis on the environment, an adaptation in Greek of the Early Childhood Child Care Home Observation of Measurement of the Environment[14] took place. This brief research report uses preliminary data to discuss some evidence on the psychometric characteristics of the measure with the intention to move further with the development of an adapted version of EC-CC-HOME specifically for institutional care, under the guidance of the developers.

The Child Care HOME Inventory (CC-HOME), was designed for use in "non-parental child care arrangements"[14] . It comprises the infant-toddler version and the Early Childhood (EC) version. The full EC CC-HOME scale has 8 dimensions, including caregiver responsivity, acceptance, the physical environment, and the resources, the language and academic stimulation, and variety. Given the emphasis on the environment and educational outcomes of this study, this report presents preliminary evidence on the psychometric characteristics of part of the EC-CC-HOME, focusing on one of its dimensions, namely Academic Stimulation (AS). This is undertaken in relation to the Home Learning Environment (HLE) Index[15] employed widely in the literature on environment and child development/educational outcomes. The aim of the study is to establish whether HOME provides evidence regarding the quality of the environment in supporting learning through the dimension of AS, and in doing so how it compares with the commonly used HLE index. Therefore, the following research question is explored: To what degree does the dimension of AS, as measured in EC-CC-HOME present convergent validity with the HLE Index?

In order to address this above research question, another research question was formulated: To what degree did the AS dimension of EC CC HOME and HLE present sufficient evidence for reliability (internal consistency)?

2 Method

2.1 Participants

The study focused on 29 children from preschool to 1st grade ($M_{ageinmonths}$= 73.63, SD=10.98), 53.6% females, residing in institutional settings in three urban centres in Greece. Inclusion criteria were that the children's primary language was Greek, that they were typically developing and that they were enrolled in school.

2.2 Material and Procedures

CC-HOME was employed in this study comprising 58 questions organised in 8 dimensions outlined above. The international guidelines on adaptations of measures were followed (for example ITC, 2016; 2017), whereby translation from the PI of the project, expert feedback on the Greek translation from six academics, and a back translation from an independent bilingual expert were carried out. Professor Bradley provided feedback on the back translation, which was incorporated into the final version. The instruments required visits and direct observation of interactions of the environment and interactions between children and caregivers; a little over 50% of items comprising the tool were assessed via observations whereas the rest with interviews. Visits, including interviewing of carers, lasted in all cases between 75 and 120 minutes.

The HLE Index[15] is comprised of seven items on 7-point Likert scale, which focus on learning related activities including teaching and playing with letters and numbers, reading and painting and visits to the library. HLE Index was translated and back translated (as the items were straightforward) by two different experts and data were collected through a questionnaire administered to the guardians of the participants.

2.3 Ethical consideration

For this study that needed access to both children in schools and in institutions, we sought, and obtained, ethical approval from the University of Athens Ethics Committee (Com.2019/02) and through the Directorate of Child and Family Protection (Ministry of Labour, Social Security and Social Solidarity, Registration Number: 26653/783). Following explanation of the project to participants, including issues on confidentiality and anonymity and the right of participants to withdraw at any point, formal and informed consents were obtained in all cases by the legal guardians; in the case of children in institutions included in this report guardianship lay with the institution.

2.4 Statistical Analysis

For the purposes of this study, a reliability analysis, prerequisite for the investigation of evidence of validity was carried out. In particular, *KR20* and ω[16] coefficients were calculated for the Academic Stimulation di-

mension and *Cronbach* α and ω for the HLE Index. Convergent validity between Academic Stimulation (incorporating questions about child encouragement to learn numbers, and HLE Index (incorporating questions like visiting the library, playing and teaching numbers and letters, drawing, playing with poems and rhymes) was calculated via Product Moment Correlation Coefficient; the test was conducted at the α=0.05 level of significance.

3 Results

Before addressing the key research question of this mini investigation, namely "the extent to which academic stimulation, as measured in EC-CC-HOME presented convergent validity with the HLE Index" we first sought to investigate internal consistency in the measure of interest. In line with this evidence, reliabilities of Academic Stimulation and HLE are presented below (see Table 1)

Table 1. Reliabilities of AS and HLE and convergent validity between AS and HLE

	McDonald's ω	KR-20/ Cronbach α	r
Academic Stimulation	0.86	0.82	
HLE	0.74	0.69	
			0.51**

*numbers would be .79 and .75 respectively by excluding the item on drawing
** two asterisks indicate p value equal or less than .01

R, the statistic selected to report convergent validity between AS and HLE, suggests a moderate, positive linear and statistically significant correlation between AS and HLE Index. Accordingly analyses provide support to convergent validity between the two measures.

4 Discussion

"The Child Care HOME Inventory (CC-HOME) was designed to measure the quality and quantity of stimulation and support available to a child in non-parental child care arrangements taking place in home-like settings other than the child's own home"[14] .

This paper, presenting preliminary findings with regards to adaptations of EC version made to the scale to be used in Greece and with populations in institutional care, by selecting the part of this multidimensional construct specifically assessing Academic Stimulation with the HLE Index -a quite straightforward index on the assessment of home learning environment. The selection of the measures was made under the assumption of academic stimulation would be assessed similarly regardless of whether assessed in day care or in institutional care. The measures presented at least acceptable reliability coefficients. AS coefficients were reported as good (well above 0.8) whereas HLE coefficients presented evidence for reliabilities about or a little above the acceptable standard of 0.7. While the KR-20 a special case of Cronbach α stresses homogeneity, ω indicates the proportion of variance shared between variables explored and a common factor. In that instance, ω is a more appropriate measure to determine whether items hold together in a way that sums can be calculated and used in a meaningful way. Given that in both instances ω coefficients were well above 0.7, sums were calculated to explore the degree of convergent validity between the two measures.

Convergent validity, on the other hand, the question of interest in this short report, is a means to assess construct validity by the exploration of the strength of association between a scale (or subscale) of interest and a proxy (that is measures that look in to similar constructs). There has been a considerable debate though as to what constitutes evidence on convergent validity, what is the appropriate degree of association between the proxy and the measure of interest. Indeed, the analyses for convergent validity seek to provide evidence that the way a construct of interest is operationalized and measured is appropriate. But what does appropriate translate to in terms of the magnitude of r between a measure and the proxy used for convergent validity purposes? Carlson and Herdman (2012)[17] provide a review of the substantial disagreement in terms of what constitutes evidence for convergent validity presenting studies that go as low as 0.28 and as high as 0.75. It seems therefore important to provide a rationale for accepting the result of r as evidence to convergent validity or not.

The measure of interest, in this particular report is the AS subscale of EC-CC-HOME and the proxy used was HLE Index[15] . The composite score has been found to be able to discriminate between families that provide rich or impoverished learning environments[18] , when we know that rich home learning environments are key to improving outcomes of children, especially the most disadvantaged and, thus, vulnerable[17] . The quality of HLE relates to both educational resources and parenting activities with children[19] . While HLE Index has been developed with the view to assess families in typical households, CC-HOME items were developed with the view to assess childcare environments, such as day care. As such we expected that the reliabilities of the HLE would not be excellent but we would like to see that they are acceptable and similarly we thought that a

moderate to high (between 0.5 and 0.7) convergent validity would offer adequate preliminary information about how this measure works under the circumstances; this is in line with international good practice.[17] A more detailed view is expected to yield further evidence of what might be some items that would be worth reviewing as part of the bigger project of the adaptation of the scale.

5 Author Contribution Statement

AT conceived and designed the study. AB was consulted at the initial stages and helped with the translation of the scale. KT designed the protocols. KT and AT collected the data. AT and AB did the drafting, and revising of the work and wrote the final manuscript, in consultation with KT. AT supervised the project from conception to submission.

6 Conflict of Interest Statement

The authors hereby state that there are no conflicts of interest in relation to this study.

7 Datasets are available on request

The raw data supporting the conclusions of this manuscript will be made available by the authors, without undue reservation, to any qualified researcher.

References

[1] Browne K, Hamilton-Giachritsis C, Johnson R, *et al*. Child health: overuse of institutional care for children in Europe. British Medical Journal, 2006, **332**(7539): 485. https://doi.org/10.1136/bmj.332.7539.485

[2] Roots Research Foundation (RRF). Mapping the institution of closed protection and protection of children with disabilities, Athens: RRF, ISBN 978-618-82169-0-7, 2015.

[3] Dennis W and Najarian P. Infant development under environmental handicap. Psychological Monographs: General and Applied, 1957, **71**: 1-13. https://doi.org/10.1037/h0093705

[4] Goldfarb W. Effects of psychological deprivation in infancy and subsequent stimulation. American Journal of Psychiatry, 1945, **102**: 18-33. https://doi.org/10.1176/ajp.102.1.18

[5] Van IJzendoorn MH, Bakermans-Kranenburg MJ and Juffer F. Plasticity of growth in height, weight and head circumference: Meta-analytic evidence of massive catch-up of children's physical growth after adoption. Journal of Developmental and Behavioral Pediatrics, 2007, **28**: 334-343. https://doi.org/10.1097/DBP.0b013e31811320aa

[6] Johnson R, Browne K and Hamilton-Giachritsis C. Young children in institutional care at risk of harm. Trauma, Violence, & Abuse, 2006, **7**(1): 34-60. https://doi.org10.1177/1524838005283696

[7] Rutter M, Beckett C, Castle J, *et al*. Effects of profound early institutional deprivation: An overview of findings from a UK longitudinal study of Romanian adoptees. European Journal of Developmental Psychology, 2007, **4**(3): 332-350. https://doi.org/10.1080/17405620701401846

[8] Smyke AT, Koga SF, Johnson DE, *et al*. The caregiving context in institution-reared and family-reared infants and toddlers in Romania. Journal of Child Psychology and Psychiatry, 2007, **48**(2): 210-218. https://doi.org/10.1111/j.1469-7610.2006.01694.x

[9] Ellis BH, Fisher PA and Zaharie S. Predictors of Disruptive Behavior, Developmental Delays, Anxiety, and Affective Symptomatology AmongInstitutionally Reared Romanian Children, Journal of American Academy of Child and Adolescent Psychiatry, 2004, **43**(10): 1283-1292. https://doi.org/10.1097/01.chi.0000136562.24085.160

[10] Bos KJ, Zeanah CH, Smyke AT, *et al*. Stereotypies in children with a history of early institutional care. Archives of pediatrics & adolescent medicine, 2010, **164**(5): 406-411. https://doi.org/10.1001/archpediatrics.2010.47

[11] Rutter M. Adverse preadoption experiences and psychological outcomes. Psychological Issues in Adoption. Research and Practice, 2005, **3**: 47-67.

[12] Roy P, Rutter M and Pickles A. Institutional care: risk from family background or pattern of rearing?. The Journal of Child Psychology and Psychiatry and Allied Disciplines, 2000, **41**(2): 139-149. https://doi.org/10.1111/1469-7610.00555

[13] Vorria P, Papaligoura Z, Dunn J, *et al*. Early experiences and attachment relationships of Greek infants raised in residential group care. Journal of Child Psychology and Psychiatry, 2003, **44**: 1208-1220. https://doi.org/10.1111/1469-7610.00202

[14] Caldwell B and Bradley R. Administration manual: Home Observation for Measurement of the Environment Inventory, 2003. http://fhdri.clas.asu.edu/home/index.html

[15] Melhuish EC, Phan MB, Sylva K, *et al*. Effects of the Home Learning Environment and Preschool Centre Experience upon Literacy and Numeracy Development in Early Primary School. Journal of Social Issues, 2008, **64**(1): 95-114. https://doi.org/10.1111/j.1540-4560.2008.00550.x

[16] McDonald RP. Test theory: A unified treatment. Mahwah, NJ: Lawrence Erlbaum, 1999.

[17] Carlson KD and Herdman AO. Understanding the impact of convergent validity on research results. Organizational Research Methods, 2012, **15**(1): 17-32. https://doi.org/10.1177/1094428110392383

[18] Sammons P, Smees R, Taggart B, *et al*.The Early Years Transition and Special Educational Needs (EYTSEN) Project: Technical Paper 1 - Special Needs Across the Pre-School Period. London: DfES / Institute of Education, University of London, 2002.

[19] Anders Y, Rossbach H, Weinert S, *et al*. Home and preschool learning environments and their relations to the development of early numeracy skills. Early Childhood Research Quarterly, 2012, **27**: 231-244.
https://doi.org/10.1016/j.ecresq.2011.08.003

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REVIEW

Explaining ADVA and TAADVA: Risk factors and correlates

Karlie E. Stonard

Abstract: While research regarding the correlates and risk factors of Adolescent Dating Violence and Abuse (ADVA) has been established, less research has explored what factors might be associated with adolescent involvement in Technology-Assisted Adolescent Dating Violence and Abuse (TAADVA). This paper therefore reviews the literature to have reported on risk factors for ADVA and correlates of TAADVA in order to assess the current state of this knowledge base and look for similarities and differences between factors identified. A range of factors were identified that were important in ADVA and TAADVA victimisation and/or instigation and these are considered in terms of the level of theory that they can support in terms of their ability to explain ADVA and TAADVA, in addition to where they sit within an ecological framework. Due to research on TAADVA being relatively recent in comparison to ADVA, only correlates were identified in studies investigating associated factors whereas longitudinal risk factors have been well established with regard to ADVA that has been researched more extensively. Future research should attempt to standardise measures of risk factors and correlates in order to make comparisons more accurate and move research forward by developing a comprehensive theory of ADVA and TAADVA.

Keywords: Adolescent, Dating Violence and Abuse, Technology-Assisted

1 Introduction

The prevalence of Adolescent Dating Violence and Abuse (ADVA) in general population studies has been well established within numerous studies and is reported to range from between 10-30% for physical violence victimisation and 5-30% for physical violence instigation, 35-55% for psychological/emotional violence victimization and 20-70% for psychological/emotional violence instigation, and 5-30% for sexual violence victimisation and 5-20% for sexual violence instigation.[1] Additionally, numerous studies have explored risk factors associated with adolescent involvement in ADVA that have been categorised in a review of such research as including four dynamic risk areas including peer influences, substance use, psychological adjustment and personal competencies (PAPC), and attitudes towards dating violence.[2] Less research however, has explored what factors might be predict involvement in Technology-Assisted Adolescent Dating Violence and Abuse (TAADVA), although some studies have begun to investigate the prevalence and correlates of TAADVA. In a review of TAADVA prevalence studies, Stonard et al. (2014) identified that the prevalence of TAADVA victimisation ranged from 12-56% and for instigation from 12-54%, highlighting that this form of abuse is as evident in adolescent romantic relationships as offline ADVA.[1] This paper seeks to synthesise the research that has examined factors associated with involvement in TAADVA in order to explore similarities and differences to those risk factors identified for ADVA, and to attempt to provide a knowledge base in which to build and develop a comprehensive theory of ADVA and TAADVA.

Definitions of ADVA now acknowledge that such abuse not only includes physical, psychological/emotional and sexual violence in the offline context but also includes psychological/emotional abuse and sexual pressure that occurs through the use of electronic communication technologies (ECT) such as mobiles and online social networking tools. The Centers for Disease Control and Prevention (2012: 1) for example, defines "Teen dating violence" as "the physical, sexual, or psychological/emotional violence between two people within a close or dating relationship, as well as stalking. It can occur in person or electronically such as repeated texting or posting sexual pictures of a partner online and may occur between a current or former dating partner".[3] The nature of abusive and coercive/controlling behaviour can therefore be

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experienced in both the online and offline contexts, although this may be experienced exclusively in one or the other.[4] It is therefore important to understand whether the factors found to be associated with ADVA are similar to those identified for TAADVA or whether TAADVA has any unique characteristics.

This paper critically examines the theoretical and empirical research that has attempted to explain ADVA and TAADVA experiences, and factors thought to be important in the pathways, types, and development of ADVA and TAADVA. Specifically this chapter considers the trajectories, typologies, and motives for ADVA, including the role of gender, and how this might apply to TAADVA. Following this, a review of longitudinal studies that have identified risk and protective factors for ADVA and cross-sectional studies that have identified correlates of TAADVA is conducted. The findings are examined in the context of relevant theoretical perspectives.

1.1 Methodology for review

Bibliographic databases (*e.g.* Academic Search Complete, PsychINFO, and Science Direct) in addition to Google Scholar were searched for peer-reviewed journals and research reports that have examined risk and/or protective factors or correlates of ADVA and TAADVA. Key search terms such as 'adolescent(ce)', 'teen(age)', and 'youth'; 'dating', 'intimate', and 'partner'; and 'abuse', 'aggression', and 'violence', were used in conjunction with 'explanations', 'longitudinal', 'motives', 'nature', 'protective (factors)', 'promotive (factors)', 'risk (factors)', 'trajectories' and 'typologies' in order to gather data on the trajectories, typologies, motives, and longitudinal risk and protective factors for ADVA. An example of this search technique is provided as follows: 'adolescent' AND 'dating violence' AND 'risk (factors)' AND 'longitudinal'. When broadening the search to capture the relevance of ECT within this context, terms such as 'cyber', 'digital', 'electronic', 'online' and 'technology' were also included interchangeably. Following exhaustive searches, reference lists were also scanned from gathered literature in order to maximise the collection of as many available studies relevant to the review as possible. A number of academic reports and posters were also obtained which were found to report on the risk factors or correlates of ADVA/TAADVA. A total of 30 studies were found to report on risk/protective factors of ADVA (27 of these from the US and three from Canada) and 12 identifying correlates of TAADVA (10 from the US and two from Europe).

Inclusion criteria for these studies required that they had been published in English since the year 2000 to ensure the most recent literature was included in the review. Inclusion criteria also required that the samples were of adolescent age (10-18 years),[5] at the time when ADVA/TAADVA was assessed. No restrictions were applied to the geographical origin of studies. In accordance with the levels of risk factors identified by Kraemer *et al*. (1997),[6] the most valid types of risk factor were sought (*i.e.* 'causal risk factors'). However, only longitudinal studies identifying 'risk factors' (*e.g.* family influence), 'fixed markers' (*e.g.* gender and race), and 'variable risk factors' (*e.g.* personal aggression, attitudes, and substance use) were found for ADVA, meaning causal relationships cannot be confirmed. In these studies, risk/protective factors were characterised by preceding the outcome (*i.e.* ADVA), and are represented in studies using longitudinal research designs whereby data is collected on at least two occasions. As TAADVA is an emerging field, this criterion (in addition to the age restriction criterion) was relaxed due to limited literature to have explored this issue. Only factors that Kraemer *et al*. (1997) describe as 'correlates' were identified for TAADVA, meaning the factor is associated with the outcome, represented in studies using cross-sectional research designs.[6] Due to the nature of cross-sectional methodology, it is not known whether the identified correlates precede the occurrence of TAADVA, occur alongside, or as a consequence of such behaviour. It was deemed important to include all factors identified regardless of the weight of empirical evidence for them. The areas of risk and protection for ADVA and correlates for TAADVA are discussed together.

2 Trajectories, typologies and motives for ADVA and TAADVA

2.1 Trajectories of ADVA

Relative to our understanding of the prevalence of ADVA and more recently TAADVA, less is known about the patterns of adolescent involvement in ADVA and TAADVA and how this changes over time. According to Straus (2004), dating couples are at greater risk of violent behaviour than are married couples.[7] Girls as young as 13 in Barter *et al*.'s (2009) study were as likely as those aged 16 to have experienced physical violence from their partners.[8] Recently, research has attempted to account for trajectories of ADVA, exploring the prevalence of ADVA from early to middle and older adolescence. Orpinas *et al*. (2013) investigated physical ADVA trajectories in a sample of 588, 6-12th grade adolescents and found two trajectories of victimisation for males (low and high) and females (low and increas-

ing); and two instigation trajectories for both males and females (low and increasing).[9] Brooks-Russell, Foshee, and Ennett (2013) also explored trajectories of physical dating violence victimisation in a sample of 2,566 adolescents (grades 8 to 12).[10] The authors identified three trajectories for females: (1) a low/non-involved class; (2) a moderate class where victimisation increased slightly until the 10th grade and then decreased through the 12th grade; and (3) a high class where victimisation started at a higher level in the 8th grade, increased substantially until the 10th grade, and then decreased until the 12th grade. Two trajectories were found for males: (1) a low/non-involved class; and (2) a victimised class where victimisation increased slightly until the 9th grade, decreased until the 11th grade, and then increased again through the 12th grade. It is interesting that male victimisation increased through the 12th grade while female victimisation decreased, though the reasons for these gender differences are unclear. The authors identified that situational factors (such as alcohol use and anxiety for females, and victimisation by peers for males) may contribute to ADVA victimisation trajectories. Moreover, they suggest that peer victimisation and peer dating violence require further attention in terms of the relationship between victimisation in different arenas (*i.e.* peer and dating relationships) and vulnerabilities to victimised trajectories. In a five-wave longitudinal study of 1,164 adolescents and young adults (spanning the ages of 13-28), Johnson *et al.* (2014) examined age-related trajectories of physical ADVA instigation and found that ADVA increased from early-to-middle adolescence (age 13-16) to later adolescence (age 17-20), although the increase was greater for females.[11] At 21-24 years, male instigation of violence decreased, while female instigation peaked at this age. These limited and mixed findings regarding ADVA trajectories suggest that ADVA increases throughout adolescence, with some studies then identifying periods of both decline and further increase throughout later adolescence, depending on gender. Trajectories of TAADVA victimisation and instigation however have yet to be explored.

2.2 Typologies of and motives for ADVA

Adolescent dating relationships are thought to be more egalitarian (*i.e.* the extent to which they are represented by inequality in power between partners) than those of adults,[12] and ADVA is reported to consist of milder forms of violence with different sources of disagreement than adult domestic violence.[13] Adolescent dating relationships are also reported to differ from adult relationships due to them being less likely to be characterised by financial or child dependency, intense involvement with a partner's family, and because they are not legally binding relationships.[13] However, adolescent relationships may contain elements of intimacy and perceived importance that make it difficult to withdraw easily from them.[14] For example, in their study of 75 adolescent females (aged 11-17), Girlguiding (2013) found that there was a sense that the adolescents' own and their partner's lives were so closely linked (in terms of becoming close to their boyfriend's family, visiting and staying over regularly, confiding in his mother, or if their boyfriend is close to the girls own family), that it was easier to stay in relationships than to consider leaving and breaking up.[15] Adolescents may also experience peer and social pressure to participate and remain in dating relationships.[16] In terms of TAADVA, some controlling behaviours have even been interpreted as reassuring concerns for infidelity and relationship insecurity or as feeling 'loved'.[8, 15, 17] This may have implications for the continuation of an abusive or controlling relationship in terms of not recognising abuse, seeking help or ending an abusive relationship. These findings may also have implications when measuring such behaviours, as adolescents' subjective views may influence how they perceive the meaning and impact of ADVA/TAADVA behaviours they experience or use themselves.

Adolescent romantic relationships may be qualitatively different from those of adults in terms of the nature and seriousness of those relationships.[13] Consequently, it is not known whether the typologies of violence derived from adult samples are relevant to adolescent populations. Johnson developed a typology of adult Intimate Partner Violence (IPV) that proposes four types of violence based on the context of the violence and/or control and the gender symmetry of the violence.[18–20] Johnson proposes that each have different causes, patterns of development, and consequences that require different forms of intervention. These include:

Situational Couple Violence (SCV): Although the individual (and possibly the partner) is violent, neither the individual nor the partner is violent and controlling. This is represented by violence that is gender symmetric.

Violent Resistance (VR): The individual is violent but not controlling, the partner is the violent and controlling one. Mostly female instigators who have been victims of male violence.

Intimate Terrorism (IT): The individual is violent and controlling, the partner is not. Mostly female victims of male violence, more frequent violence, and more likely to receive injury.

Mutual Violent Control (MVC): The individual and the partner are violent and controlling. This is represented by violence that is gender symmetric.

Intimate terrorism has been referred to as a pattern of emotionally abusive intimidation, coercion and control, coupled with physical violence against partners,[21] as outlined in Pence and Paymar's (1993) 'Power and Control Wheel'.[22]

Johnson examined the IPV literature with representative and agency samples using the Conflict Tactics Scale (CTS) and found that SCV dominated research with general population survey samples (family violence/conflict perspective), whereas IT and VR dominated research conducted with agency samples (feminist perspective).[18,19] This was taken to suggest that differences across studies in relation to gender symmetry are related to the source of the sample (*i.e.* general population samples and agency samples). Despite act-based measures being used in both the agency and general surveys reviewed, Johnson (1995) argues that these sampling strategies are heavily biased; the former through its use of biased sampling frames (*i.e.* shelter/court samples) and the latter through refusals.[18] To further this argument Johnson (2006) notes that couples involved in SCV would be unlikely to become agency clients because victims of such violence are unlikely to seek formal intervention or end an abusive relationship.[19] Female victims of IT are reported to be more likely to leave their partners, leave them more often, to seek their own residence and formal help, or escape to locations that ensure safety (*i.e.* a refuge).[23,24] On the other hand, couples involved in IT would be unlikely to agree to participate in general surveys due to fear of reprisals from the abusive and controlling partner.

To date only two studies have examined the relevance of Johnsons typology to adolescent samples. Zweig *et al.* (2014) found that Johnson's typology of violence was a workable framework to classify a sample of 3,745 adolescents' (7-12th grade) experiences of ADVA in terms of high and low-control violent experiences.[25] For adolescents in violent relationships, the most common type of violence instigated was low-control SCV (86% for females and 80% for males), followed by high-control IT (7% for females and 11% for males), VR (6% for females and 6% for males), and high-control MVC (1% for females and 4% for males).[25] Messinger *et al.* (2014) also found that SCV was the most common type of violence instigation among 493 adolescents (aged 14-18), followed by MVC, IT, and VR.[26] The prevalence of SCV, IT and VR was similar to that found in research with adult samples,[20] however, MVC was more prevalent among adolescents in Messinger *et al.*'s (2014) study.[26] Females also reported more SCV in Messinger *et al.*'s (2014) study than that found in research with adults.[26] These findings suggest that like adult general survey samples, ADVA is most likely to be characterised by low-control violent behaviours in relationships where both partners may be violent, but without the control of one partner over the other or a power imbalance between partners. Although, IT, VR, and MVC were still features of ADVA in these studies, highlighting the presence of abusive relationships characterised by more serious (high) control and gendered power imbalances.

Messinger *et al.* (2014) went on to develop five categories (MVC and four refined typologies) of ADVA using a relationship-level extension of Johnson's typology.[26] The same developments in typology research regarding TAADVA however have not been made. With regard to ADVA, Messinger *et al.* (2014) proposed that the categories of IT, VR, and SCV should be more clearly refined:[26]

Violent Control-Violent Resistance relationship (VC-VR): One partner uses high controlling violence and the second partner uses low controlling violence.

Unilateral Violent Control relationship (UVC): One partner uses high controlling violence and the second partner uses non-violence.

Unilateral Situational Violent relationship (USV): One partner uses low controlling violence and the other partner uses non-violence.

Mutual Situational Violent relationship (MSV): Both partners use low controlling violence.

Research has begun to explore the systematic variation in the motivating factors and context of ADVA instigation. For example, Foshee *et al.* (2007) identified four types of ADVA instigation for females and one for males.[27] These four types for females were distinguished by the motive for violence and whether the boyfriend had a history of abusive behaviour towards her: (1) patriarchal terrorism response (violence as an immediate response to violence from the boyfriend who has been historically abusive; stated self-defence and to show they are fed up with the violence as the motives); (2) anger response (no history of violence from the boyfriend; stated anger as the motive); (3) ethic enforcement (no history of violence from the boyfriend; stated letting the boyfriend know he had done something wrong as the motive); and (4) first-time aggression response (no history of violence from the boyfriend until the current incident to which the female immediately used violence; self-defence and retaliation stated as the motives). Most acts instigated by males were defined as escalation prevention, whereby males attempted to prevent the escalation of female physical violence. These types generally reflect that of the low-control couple conflict identified by Johnson (2006),[19] with the exception of the patriarchal terrorism response that reflects what

Johnson refers to as VR and Messinger *et al.* (2014) refer to as VC-VR.[26] It is interesting that motives for female instigation were more varied than the one type identified for males, however no further explanation for this is given. Of note, for males, violence instigation in a playful context was more prevalent than for females (38% vs. 29%). Both males and females identified motives for ADVA instigation related to self-defence.

The motives identified by Foshee *et al.* (2007) mirror those found in other ADVA and adult IPV studies.[27] In a large-scale review of the literature including samples from university and school populations (37% of the total sample combined), Langhinrichsen-Rohling, McCullars, and Misra (2012) identified that the most common motives for violence instigation were: power/control (76%), using violence as an expression of negative emotion (*i.e.* anger, 63%), self-defence (61%), retaliation (60%), jealousy (49%), and communication difficulties (48%).[28] O'Keefe (1997) found that the most commonly reported reason for males to instigate ADVA was anger followed by a desire to get control over their partner.[29] The most commonly reported reason for females to instigate violence was anger followed by self-defence. Jealousy was the third main reason for both sexes. Other reasons reported as motives for emotional and physical ADVA instigation for both males and females include the 'type of person' (although there is no further description of what this means; and for females more than males), relationship breakup, jealousy, alcohol, anger, getting their own way, retaliation, control, and superiority.[30] Females were more likely to instigate violence because they were angry with a partner while males were violent towards their girlfriends in response to aggression instigated by them. Over a third of adolescents (males and females) reported ADVA within a playful or joking context in Muoz-Rivas *et al.*'s (2007) study.[31] Barter *et al.* (2009) also found motives for female instigation include negative reasons (*e.g.* to hurt, impress others, jealousy, to get what they wanted, anger, to humiliate, and drinking/drugs), but also as an attempt to defend themselves or within a discourse of mutual 'play-fighting' or 'messing around'.[8] Identified motives for male instigation include 'messing around', followed by being due to a negative reason.[8] Finally, Fernndez-Fuertes and Fuertes (2010) found a strong link between jealousy and aggression instigation of both verbal-emotional and physical ADVA in their sample of 567, 15-19-year-old Spanish adolescents.[32] Based on these findings there appears to be some considerable overlap in the motives for ADVA instigation for males and females, although desire to get control over their partner was a motivating factor for males only in O'Keefe's (1997) study.[29] No studies have reported on or tried to categorise motivations for TAADVA; however, Stonard *et al.* (2017) found that some adolescents may use monitoring or controlling behaviours to reassure concerns for a partner's infidelity or satisfy relationship insecurities.[33]

Researchers have also tried to classify types of aggressive events within adolescent romantic relationships. Draucker *et al.* (2010) identified eight types of aggressive events that occurred in 18-21 year olds' retrospective accounts of their adolescent (age 13-18) experiences of dating violence.[34] These types included aggressive events that were described as: tumultuous (both partners typically used aggression in events involving chaos and drama); controlling (typically an attempt to dominate one partner by the other without the use of physical violence); explosive (typically one-sided aggression involving a severe and sudden act of violence and mostly by males); scuffling (including a series of minor aggressive exchanges between partners); disparaging (typically one-sided aggression including acts of disapproval and insults or putdowns); rejecting, ignoring, or disrespecting (typically one-sided aggression); violating (typically female victims of male aggression marked by intrusion and breach of trust); and threatening (typically attempts to dominate one partner by the other). Tumultuous and scuffling types of aggression were reported to be mutually (bi-directional) aggressive situations while the other types were primarily uni-directional. The explosive and violating event types were reported to consist of mostly male instigators and female victims, reflecting the IT typology of adult IPV identified by Johnson.[18,19]

Expanding on this, Draucker *et al.* (2012) explored the types of aggressive relationships in which ADVA occurred with 85 young adults (aged 18-21) providing retrospective accounts of 114 adolescent (aged 13-18) relationships and the regularity and frequency in which this aggression occurred.[35] These types of aggressive relationships included: recurring aggression (regular and repeated); sporadic aggression (irregular and unpredictable); and routine aggression (usual or habitual way of interaction). They also identified whether the aggression was uni- or bi-directional. Seven types of adolescent aggressive relationships were identified as: turbulent (recurring aggression that was primarily bi-directional); maltreating (recurring aggression that was primarily uni-directional); brawling (sporadic aggression that was primarily bi-directional); volatile (sporadic aggression that was primarily uni-directional); bickering (routine aggression that was primarily bi-directional); deprecating (routine aggression (*i.e.* putdowns) that was primarily uni-directional); and intrusive (routine aggression (*i.e.* controlling) that was primarily uni-directional). The

participants described aggressive relationships that were uni-directional as abusive whereas bi-directional aggressive relationships were described as fights. Often both partners instigated aggression indicating low-control aggressive behaviour, while uni-directional aggression appears to represent abusive behaviour higher in control and characterised by an imbalance in power. Three of these seven types of aggressive relationships were bi-directional, reflecting SCV, while four were identified to be uni-directional, meaning there is also evidence of IT, UVC and USV in ADVA as described by Johnson (2006) and Messinger *et al*. (2014).[19,26]

The prevalence of mutual ADVA (*i.e.* when both partners instigate violence in relationships) has been documented to range from 49-79% for physical ADVA and 77-94% for psychological/emotional ADVA.[14,23,36–38] In studies that found evidence of mutual physical ADVA, males reported more exclusive victimisation while females reported more exclusive instigation.[14,37,38] Adolescents who report mutual ADVA have been found to experience and instigate more frequent ADVA than uni-directional victims or instigators.[39] It is important to note that studies reporting mutual ADVA do not always distinguish whether the participant was a victim and/or instigator within the same relationship, or whether they adopted different roles in different relationships, leading to a methodological challenge in terms of identifying the true nature of mutual violence.

Finally, it has been suggested that there may be a gender-specific quality to aggression whereby coercive methods preferred by females may differ from those preferred by males.[40] For example, female coercion may include indirect methods such as enticement, rumour spreading, and threats of withholding sex that is not typically assessed by ADVA measures.[12] This may mean that female violence towards male victims is underreported. Males may also not report abusive behaviour as a result of socially desirable responding.[41,42] Consequently, this has implications for the development of measures and prevention efforts in terms of understanding more about the nature and dynamics of ADVA in order to effectively address the issue.[12] In terms of TAADVA these issues outlined above are even less empirically advanced.

In summary, based on the literature reviewed, ADVA samples share characteristics with non-clinical adult IPV samples in terms of the types and motives for violence experienced in intimate relationships, with the low-control SCV type most often identified. However, uni-directional violence that is characterised by inequalities in power and the use of controlling behaviour between partners (and usually represented by female victimisation and male instigation) was also identified in the research reviewed. Some literature has also provided an insight into the types of aggressive events experienced by adolescents and the frequency and motives for each event type. Less is known about the typologies of TAADVA and the degree to which this is experienced as uni- or bi-directional violence among adolescent dating partners and whether this is experienced alongside ADVA. It may be reasonable to expect that TAADVA will share similar characteristics to the typologies of ADVA, however unique features of ECT and TAADVA may result in unique motives, experiences, risks and consequences compared to ADVA (see *e.g.*[15,43,44]), thereby meaning different typologies and theories might evolve.

3 Explaining ADVA and TAADVA

According to Ward and Beech (2006), a theory explains phenomena, why they exist and why they possess certain properties.[45] They describe an explanation as the application of a theory in an attempt to help understand certain phenomena (*i.e.* why and how specific events happen and why people behave the way they do). Ward and Hudson (1998, cited in Ward and Beech 2006: 46) distinguished three levels of theory in their framework for classifying sexual offending (see Table 1).[46] This conceptualisation of levels of theory will be applied to explanations of ADVA and TAADVA and identified risk factors in this paper.

Table 1. Levels of theory

Theory Level	Definition
Level 1	Provide comprehensive theories of sexual offending
Level 2	Aim to provide detailed descriptions of the single factors thought to be particularly important in the generation of sexual crimes
Level 3	Explain the process of sexual offending

Note: Ward and Hudson (1998, cited in Ward and Beech 2006: 46) [46]

Currently there exists no single Level 1, comprehensive theory of ADVA (Table 1). Literature has attempted to explain ADVA through the application of trajectories and typologies. This may represent Level 3 theories in that they attempt to describe the processes of violence in relationships through explanations of violent developmental pathways, the context of violence and level of control, motives, and gender symmetry/asymmetry of ADVA (Section 2.1-2.2). Three of the most influential theoretical perspectives that have been applied to explanations of ADVA are the attachment, feminist and social learning perspectives.[12] These theories represent Level

2 theories in that they attempt to explain single factors thought to be important to ADVA such as socio-cultural and socio-cognitive influences. Such theories are therefore not comprehensive accounts of ADVA/TAADVA and cannot be said to fully adhere to the criteria of a good theory as summarised in Table 2.[47,48]

With limited available alternatives, Ward and Hudson (1998, cited in Ward and Beech 2006: 46) assert that researchers should attempt to integrate the best existing ideas in an area within a new framework known as 'theory knitting', in order to identify common and unique features of relevant theories.[46] After reviewing the literature that has attempted to explain the nature and properties of ADVA/TAADVA, it appears that ADVA and TAADVA are not adequately theoretically advanced areas of research, and further investigation and theoretical development is required. Furthermore, as seen in Section 2.1-2.2, adolescents' experiences of ADVA will vary broadly, depending on the particular situational characteristics, motives for violence, gender, and the context and dynamics of the particular relationship. Therefore, theories need to account for the heterogeneity of ADVA and TAADVA (*i.e.* the various types of violence, motives, and contexts in which it occurs, as well as a variety of risk factors). To date, the majority of empirical research conducted in relation to ADVA and TAADVA has sought to identify risk and protective factors or correlates that could be interpreted within the context of Level 2 theories. Together, these theories can contribute to explaining ADVA and TAADVA, however the nature of the risk factors applied to these theoretical perspectives needs to be considered.

Kraemer *et al*. (1997) outline the steps necessary to document risk-factor status in terms of the methodology used to measure the influence of a potential factor or characteristic of a population of interest.[6] In this framework, they define eight types of factors or non-factors based on the strength of empirical evidence for the factor (summarised in Table 3). Correlates are the weakest factors and causal risk factors are the strongest, and are determined as a result of the methodology used to gather and analyse the data.

The next sections of the paper will review the ADVA risk/protective factor and TAADVA correlate literature in terms of the identified collective areas of influence in order to assess the weight of the empirical evidence, the nature of the 'risk' factor and the relevant theories (*i.e.* Level 2) where possible.

3.1 Risk/protective factors and correlates of ADVA and TAADVA

Using Kraemer *et al*.'s (1997) criteria, the literature search identified 30 studies for ADVA risk/protective factors, fixed markers, and variable risk factors and eight studies for TAADVA risk/protective correlates that are summarised in Table 9-11.[6] The 30 longitudinal ADVA studies identified a total of 80 individual factors for ADVA victimisation, instigation and/or involvement that are summarised into 12 broader areas of risk (Table 4). Studies with more than two authors have been shorted with '*et al*.' following the primary author in Tables 4-6. Three studies reported on victimisation only, 15 on instigation only, nine on victimisation and instigation separately, and three for involvement only and the adolescents in these studies ranged from age 10-24 years old (Table 9). For studies that included adolescents over the age of 18 but which also included younger adolescents *(i.e.* age 10-13 years),[49] the age inclusion criteria was relaxed. The number of waves of data collection ranged from two to eight and the time period ranged from three months to 12 years. The types of violence measured in these studies included physical (28 studies), verbal/emotional/psychological (10 studies) and sexual violence (six studies), threatening behaviour (two studies), and relational aggression (one study). Physical violence is evidently the most common type of ADVA that risk factors were examined for.

Four longitudinal studies reported a total of six protective factors for ADVA victimisation, and/or instigation that are summarised into four broader areas of protection from ADVA (Table 5). Three of these reported on instigation only, while one study reported on both victimisation and instigation and the adolescents in these studies ranged from 10-18 years old (Table 10). The number of waves of data collection ranged from two to five and the time period ranged from six months to eight years. The types of violence measured by these studies included physical (four studies) and emotional violence (one study).

Twelve cross-sectional studies reported a total of 44 correlates for TAADVA victimisation, instigation and/or involvement that are summarised into 14 broader areas of risk for TAADVA (Table 6). Two of these studies reported on victimisation only, four on instigation only, four on victimisation and instigation separately, and two for involvement only. The adolescents in these studies ranged from 11-22 years old (Table 11). TAADVA was broken down to examine non-sexual and sexual TAADVA in two studies.[38,50] Only Epstein-Ngo *et al*. (2014) reported one protective factor for TAADVA

Table 2. Attributes of a good theory

Attribute	Definition
Predictive accuracy, empirical adequacy and scope	The theory can account for existing findings and the range of phenomena requiring explanation
Internal coherence	Refers to whether a theory contains contradictions or logical gaps
External consistency	The theory in question is consistent with other background theories that are currently accepted
Unifying power	The existing theory is drawn together in an innovative way and can account for phenomena from related domains. It unifies aspects of a domain of research that were previously viewed as separate
Fertility or heuristic value	The theory has the ability to lead to new predictions and open up new avenues of inquiry (i.e. its capacity to lead to new and effective interventions)
Simplicity	The theory makes the fewest theoretical assumptions
Explanatory depth	The theory is able to describe deep underlying causes and processes

Note: (Hooker 1987 and Newton-Smith 2002, cited in Ward and Beech 2006: 46) [47,48]

Table 3. Framework for characterising 'risk' factors

Attribute	**Definition**
Non-correlate	The factor is not associated with the outcome
Concomitant or Consequence	The factor does not precede the outcome
Correlate	The factor is associated with the outcome. Precedence is not determined
Risk Factor	The factor precedes the outcome however, there is no evidence documenting the stability or variability or the factor within subjects
Fixed Marker	The factor cannot be demonstrated to change or be changed (e.g. race or gender)
Variable Risk Factor	The factor can be demonstrated to change (e.g. age or weight) or be changed (e.g. by intervention). The manipulability or the efficacy or effectiveness of manipulation of a variable risk factor has not been tested
Variable Marker	A variable risk factor that cannot be shown to be manipulable or if manipulated, cannot be shown to change the risk of the outcome
Causal Risk Factor	A variable risk factor that can be shown to be manipulable and when manipulated, can be shown to change the risk of the outcome

Note: (Kraemer et al. 1997) [6]

involvement (higher mindfulness).[51] The adolescents in this study ranged from 14-20 years old. The types of TAADVA measured by this study included overall TAADVA.

Studies measuring ADVA vary in how they define, operationalise, and measure ADVA behaviours. For example, studies vary in the measures or variants of measures used (*e.g.* CTS, first developed by Straus (1979)[52]) and so the wording of questions or type of relationships asked about in such research may differ. Studies may ask about adolescents' current or most recent dating relationships, in addition to 'dates', or ask about historical violence in one's lifetime or within a defined period (*i.e.* the last six or 12 months). The variety in the length of longitudinal studies, the number of waves and follow-up periods may also influence how comparable findings are in studies using different designs. Furthermore, how studies define and measure the various risk factors/correlates has resulted in a vast array of individual risk/protective factors as identified in Table 4, Table 5 (ADVA) and Table 6 (TAADVA). This has implications when trying to compare and synthesise the current risk literature due to the wide variations in terminology and measurement. Despite such challenges, some general observations and conclusions can be drawn which are subsequently reviewed in Sections 3.3 to Section 3.19.

These specific risk/protective factors or correlates are summarised into conceptual groups for ADVA (Table 4 and Table 5) and TAADVA (Table 6). The discussion of each group of factors for ADVA and TAADVA is combined in order to identify patterns and similarities in the ADVA and TAADVA literature. The literature reviewed

led to the identification of 17 groups of risk/protective factors and/or correlates of ADVA/TAADVA in total that will be critically evaluated while applying relevant theoretical perspectives in relation to the empirical evidence found in this review. The studies in these tables are organised according to whether they are risk/protective factors or correlates for victimisation, instigation and/or involvement. The more dominant areas of risk (*e.g.* peer influence, family influence and personal aggression for ADVA and other dating violence experience for TAADVA) are represented by the larger number of studies to have explored these issues. These factors can be viewed as consisting of influences at multiple levels including that of the family, peer, individual factors, and broader cultural and structural influences that can be considered within the context of an ecological framework.

3.2 Ecological framework

The ecological model is used to conceptualise multiple predictors and collective influences into a meaningful framework,[53] that can be applied to explanations of ADVA/TAADVA reviewed in this paper. Bronfenbrenner's (1979, 1994) ecological framework,[54,55] which has been reinterpreted in the context of adult domestic violence,[56] and drawn on within the context of risk factors for ADVA,[57] outlines four levels or 'systems' in which risk factors for violence can be categorised (Table 7). This was used to classify whether the areas of risk factor found in this review influence adolescent development of ADVA at the broader socio-cultural, familial, social, and/or individual level. In addition, observations regarding the number of factors represented by each level of model can be made in order to identify the strongest areas of influence and any similarities or differences between the systems.

A summary of how these risk and/or protective factor categories identified in Tables 4-6 fit within the ecological framework is provided in Table 8. As seen in Table 8, most of the categories of risk/protective factor can be explained within the context of the microsystem with those in the macro-, exo- and ontogenetic system categories being less prominent. There is some potential overlap, for example: (1) family influence (micro- and exosystem); (2) Psychological Adjustment and Personal Competencies (PAPC) (micro- and ontogenetic system); and (3) attitudes (micro- and macrosystem).

There are a number of potentially collective influencing factors in ADVA/TAADVA including broader social-cultural, socio-cognitive, and individual level elements, although the type of the factor and weight of empirical evidence varies. White (2009) suggests that not only should ADVA be considered within the context of a social ecological model, gender and identity should also be considered at the individual, interactional and structural levels of the social ecology.[58] Gender differences are highlighted where reported in the empirical findings and are considered in terms of the ecological and theoretical context in which they may be applied in order to evaluate how factors such as gender may influence risk and protective factors/correlates for ADVA/TAADVA.

3.3 Peer influence

Peer influence was recognised as a variable risk factor for ADVA in 10 of the 30 studies, identifying a total of 10 individual risk factors for ADVA victimisation, instigation or involvement (Table 4). Furthermore, five studies reported four peer influence factors as a correlate for TAADVA victimisation or instigation (Table 6). Two studies also reported peer influence as a protective factor for ADVA victimisation or instigation (Table 5). Peer influence as a risk factor has been operationalised in instruments measuring friend ADVA and victimisation, association, or involvement with aggressive or anti-social peers and bullying as well as peer social norms. Protective factors have characterised peer influence based on the role of positive and pro-social relationships with friends.

One theory that has been used to account for peer influence as a risk factor for ADVA/TAADVA is Banduras Social Learning Theory (SLT),[59–61] and its explanation of the learning and modelling of behaviours through association with significant others. SLT suggests that children learn by observing role models and imitating their behaviour, which is then reinforced by a rewarding outcome for the particular behaviour. Expanding on SLT, Akers (1998) suggests the probability that people will engage in or imitate deviant behaviour is increased when they differentially associate with others who commit such behaviour, take on and support accepting attitudes towards the behaviour, and have received or anticipate a relatively greater reward for the behaviour through reinforcement.[62] This is particularly relevant to ADVA and TAADVA given that having friends who are involved in ADVA, peer aggression and bullying, and perceived social normal among peers were substantial risk factors or correlates for their own involvement in ADVA and TAADVA (Table 4 and Table 6).

In addition to the SLT perspective, opportunity perspectives such as lifestyle exposure theory[63] and assortative mating, *i.e.* the non-random coupling of individuals based on similarity on one or more characteristics,[64] may also help explain peer influence such as friend dating violence or peer aggression as a risk factor for ADVA. Rhule-Louie and McMahon (2007) describe two types of assortative mating: (1) social homogamy

(people partner with others from similar demographic backgrounds or with shared social experiences); and (2) phenotypic preference (individuals choose partners with desired attributes, which often include behaviours and traits that are similar to their own).[65] Clark (2013) suggests that if for example, adolescents engage in delinquency and associate with delinquent peers, they may be more likely to select a partner from that group and therefore be more likely to engage in delinquent behaviours, relationship conflict or be a target for victimisation, as well as being less inclined to report victimisation.[66] This perspective may explain ADVA through association or involvement with others who use and/or condone ADVA. It has also been highlighted in a review by Leen *et al.* (2013),[2] that interdependence theory[67] may help explain how friend dating violence poses a risk for ADVA due to peer relationships presenting a stronger influence than that of parents in shaping adolescents' expectations about romantic relationships. Peer influence may therefore represent a particularly important component of the 'microsystem' of the ecological model in influencing ADVA/TAADVA.

As demonstrated in Table 4, studies have reported a range of peer influence risk factors for the instigation of ADVA: friends with experience of dating violence (females only),[68] peer group relational aggression,[69] friends who use ADVA,[70] number of friends using ADVA,[71] friends who are victims of ADVA (females only),[72] early and increased involvement with anti-social peers.[73,74] Some of these risk factors, in addition to others, have also been identified for ADVA victimisation: friends with experience of ADVA (females only),[68] peer group relational aggression,[69] having a friend who has been the victim of ADVA (females only),[75] and being victimised by peers;[10] and ADVA involvement: escalation in peer victimisation (females only).[76] Specifically looking at sexual violence, Foshee *et al.* (2004) found that friend physical ADVA victimisation predicted sexual violence victimisation for females.[75] Friend ADVA appears to be a particularly influencing factor for personal ADVA, especially for females in these studies. This provides evidence for explanations of ADVA through the learning, expectation, and modelling of violence within relationships that is normalised within the peer group context. The finding that friend ADVA was a risk factor for sexual violence victimisation for females only, reflects the gender differences found for this type of abuse in reviews of prevalence literature.[1] Such findings may also lend support to normalised gender inequalities at the broader structural level of influences as described by the ecological model (in Section 3.2) and feminist theoretical perspectives on IPV and sexual violence.[77–81] These theoretical perspectives are outlined in the following section (Family Influence; Section 3.4) as such perspectives have traditionally been used to explain ADVA at the familial level. Finally, peer aggression was a correlate for victimisation and instigation of TAADVA,[82] as was bullying victimisation[83] and perceived social norms of peers[85] for TAADVA instigation, and being a victim of cyberbullying for TAADVA victimisation[38,86] (Table 6). Such peer influences have therefore been identified as risk factors for ADVA and correlates of TAADVA for both victimisation and instigation, providing potential support for the SLT perspective through association with violent and aggressive peers.

Only two studies identified peer-related protective factors for ADVA, however the findings from these studies may also provide support for the SLT and association perspectives. Peer influences such as having high quality friendships,[70] having friends with pro-social beliefs (females only),[70] and increased levels of social support from friends (females only)[87] were identified as protective factors against ADVA instigation. Specifically, Richards, Branch, and Ray (2014) identified that increased levels of support from friends at baseline was associated with significantly less physical and emotional dating violence instigation at Time 2, one-year later.[87] They also found that having increased levels of social support from friends was a protective factor against emotional ADVA victimisation.[87] This is interesting considering the high prevalence of female emotional ADVA identified by Stonard *et al.* (2014) and may show promise for potential intervention strategies.[1] The SLT[59–61] perspective may explain how supportive and pro-social peer relationships are modelled with adolescents' own romantic relationships. However, previous ADVA was not always controlled for, and therefore peer influences may be better described as 'promotive' factors[88] that influence positive outcomes, including reducing the likelihood of violence that may already be present.[57] More research is needed in order to explore how this area influences male adolescents experiences and use of ADVA.

Peer influence as a risk/protective factor or correlate of ADVA and TAADVA therefore provides some support for the SLT perspective.[59–61] This may explain how adolescents learn to accept tolerant norms and attitudes that justify ADVA/TAADVA through involvement and association with others who engage in ADVA or peer aggression. Such behaviours may be reinforced by perceived rewards such as social approval or acceptance, or adhering to the social norm in ones peer group. However, Ellis, Chung-Hall, and Dumas (2013 suggest that asso-

ciations between relational aggression and dating experiences are likely to be bi-directional at the individual and group levels, leading to difficulties in interpreting the cause and effects of peer group relational aggression.[68] It is also important to remember that SLT is not a theory of ADVA (*i.e.* Level 2 theories),[46] and while it may be applied to explain single peer influence risk factors thought to be associated with ADVA/TAADVA, it is likely that such behaviour is not simply the result of behaviour replication, but a result of this connection in addition to other personal, cognitive, social, cultural, and environmental factors. Differential association also ignores individual differences,[89] and has been criticised for offering an over-simplistic and deterministic view of the learning process.[90] Nevertheless, peer influences often represent dynamic risk factors, which are thought to be easier to modify through intervention.[2]

3.4 Family influence

Family influence was recognised as a risk factor category for ADVA in 13 of the 30 studies, identifying a total of 18 family influence risk factors for ADVA victimisation, instigation, or involvement (Table 4). Only one study identified a family influence as a correlate of TAADVA (Table 6). Family influence as a risk factor for ADVA has been operationalised in instruments measuring parental IPV, harsh parenting practices, parent-child relationships, and child maltreatment. This category was the most common area of risk identified in the ADVA literature in terms of the number of individual risk factors measured and the number of studies reporting it. No TAADVA studies identified these family influence factors as correlates of involvement.

Several theoretical perspectives can be applied to explanations of family influence as a risk factor for ADVA: SLT,[59–61] Intergenerational Transmission Theory (IGTT) of violence,[91] attachment theory,[92–96] feminist and gender role inequality perspectives,[7,78–81] and power and control theories.[100–102] These theoretical perspectives offer a framework to explain family influences through the observation and learning of violence and control, in addition to gender roles, as a way of behaving in intimate relationships from parents and the family context, and then through the transmission or replication of such behaviours in adolescents' own romantic relationships. Research conducted into the IGTT of domestic violence has based much of its inquiry on SLT and posits that observation of violence in the family of origin creates attitudes, ideas, and norms about how, when and towards whom aggression is appropriate.[103] Witnessing or directly experiencing violence as a child is reported to place the person at future risk for interpersonal violence due to messages learned about the functional nature of violence, for example, to express oneself, to solve problems, to get what they want, and to control and dominate another.[12]

Bowlby's attachment theory perspective[92–96] also provides support for family influence as a risk factor for ADVA through its explanation of how family relationships and experiences during childhood influence attachments and subsequent relationships in adolescence and adulthood. The theory posits that early attachments in infancy influence the development of Internal Working Models (IWM) of relationships and that such attitudes and expectations as well as modelled behaviours, form the basis of relationships in later life.[92] Furthermore, although attachment behaviour is especially evident during childhood, it is believed to characterise individuals throughout their life starting from birth.[95] According to Bowlby's attachment theory, in order to develop social competence, a child needs to become fully engaged in good quality relationships.[104] From an attachment perspective, adolescence is a transitional period in specific emotional, cognitive and behavioural systems, as primary attachment figure(s) shift from parents to a romantic partner.[105] Ainsworth (1967) established,[106] and later Ainsworth and colleagues[107,108] developed and investigated four classifications of infant attachment styles including: (1) secure; (2) anxious-ambivalent; (3) anxious-avoidant; and (4) disorganised attachment. Studies have reported considerable stability in attachment patterns from late childhood to early adolescence, particularly for attachment security,[109,110] and from mid to late adolescence.[111] Such distributions also tend to be similar to that of older adolescent and young adult samples. This is particularly relevant to ADVA given that experiencing family violence and harsh parenting practices were substantial risk factors for personal involvement in ADVA (Table 4). If insecure attachment styles are developed as a result of aggressive familial influences during childhood and adolescence, such characteristics and behaviours may be transferred to young peoples own romantic relationships.

Bowlby (1984) argues that family violence, including domestic violence and harsh punishment from parents, may have consequences for young people due to the establishment of negative characteristics in patterns of social behaviour during childhood being transmitted throughout the young person's adult life, potentially creating a cycle of violence.[96] Indeed, Steinberg, Davila and Fincham (2006) found that adolescents' negative perceptions of parental conflict were associated with insecure attachment styles with parents, which in turn influenced adolescents' negative marital expectations and

romantic experiences.[112] In addition, Dinero *et al.* (2008) found that warmth and sensitivity in family interactions (age 15-16) were positively related to similar behaviours by romantic partners and to self-reported attachment security (age 25).[113] However these authors suggest that these findings are inconsistent with the theoretical expectation that attachment security will predict the quality of interactions in romantic relationships.

The term 'feminism' describes a collection of different theoretical perspectives that attempt to explain not only the oppression of women by men but also identifies other differences and inequalities in sex roles and other intersecting factors such as race and class.[114] The feminist perspective views violence in intimate relationships as the consequence of a patriarchal system in society that is represented by male power advantages, dominance, and control over women who are thereby viewed as subordinate.[77–81] Violence in intimate relationships is viewed as being a result of such structural influences that define unequal power relations between men as perpetrators and oppressors and women as victims that can be transmitted in the family context. This perspective helps to explain family influence factors (*e.g.* IPV) as potential risks for ADVA through the transmission of gender inequality and/or patriarchal norms, values and behaviours that are supported, encouraged and maintained through the family context. Within the feminist approach, socially defined gender roles learned within the family are thought to encourage men be 'masculine', to use violence to settle disputes, and to set a foundation of both normative and acceptable behaviours in relationships that may contribute to the reinforcement of male power over women.[97,99,115,116]

Finally, the power/control theory[110–112] also considers IPV to be learned in the family setting in which violence is used to manage conflicts between family members (*i.e.* violence between parents or parent-child violence and harsh parental punishment). The family structure is believed to not only teach violence as a way of managing disputes, but also the emotional and moral meaning of violence and familial structures of power and gender inequality (*e.g.* male authority). Violence is used as a means of legitimising a dominant position within the family when that position of power of authority is threatened. Straus, Gelles and Steinmetz (1980) outline three lessons that a child is taught in terms of using violence: (1) those that love you the most are those that hit you; (2) violence can be used to secure good ends and to establish moral rightness (*e.g.* the more powerful family member hitting a child or partner to teach morally correct behaviour); and (3) violence and physical force is permissible and justified when other measures have failed.[102] This learning process is believed to pass through multiple generations, similar to that identified in the IGTT of violence. This perspective also contributes to explaining how family and parental violence contribute to ADVA through the learning and normalisation of violent behaviours, coercive tactics, and the associated values that legitimise such behaviour against family members and intimate partners.

Empirical evidence that has identified family influence as a risk factor for ADVA suggests that there are a range of factors relevant to ADVA instigation as summarised in Table 4: exposure to parental IPV,[117] hostility in parent marriage,[118] mother's experience of domestic violence and maternal IPV (males and Hispanic females only),[74] exposure to mother-to-father IPV (females only),[119,120] family conflict,[121] experience of family violence from parents (female only),[87] harsh physical punishment from mothers (Hispanic females only), low levels of hostility with father during early adolescence (female only), mother-child hostility (Hispanic females only),[73] low parental monitoring,[74] trauma-related symptoms (males only) and trauma-related anger (females only).[122] Wolfe *et al.* (2004) identified that trauma-related symptoms had a significant cross-time effect on predicting incidents of ADVA and suggested that child maltreatment was a distal risk factor for ADVA, and that trauma-related symptoms act as a significant mediator of this relationship.[122] Specifically, for adolescent males, trauma was associated with emotional abuse instigation but for females, trauma-related anger was associated with dating violence. Living in a stable two-parent home was also found to be a risk factor for ADVA instigation for African-American females,[73] which may mean that adolescents are more likely to be exposed to parental IPV as a result of both parents being present in the home. In terms of TAADVA, having observed intrusive controlling behaviors by the father was identified as a correlate for instigation.[85] The application of SLTs[59–61] identification that the modelling of socially learned behaviour may be more likely when the observer perceives themselves and the model to share similar characteristics (*e.g.* such as gender), may lend support to the finding that witnessing maternal IPV was associated with female instigation of ADVA.[119] For example, females may be more likely to model the behaviour of the mother or in the case of peer influence, female friends. It is therefore likely that some adolescents learn to use violence and controlling behaviour within relationships regardless of gender.[123]

Some of these risk factors, in addition to others, have also been identified for ADVA victimisation: exposure to parental IPV,[117] having been hit by an adult

with the intent to harm,[75] and relationship with mother (for females);[124] as well as for ADVA involvement: harsh parenting practices, and low parental monitoring (males only),[125] initial harsh punishment from parents and increasing harsh punishment from parents (females only).[76] Foshee *et al.* (2004) found that for young adolescents, having been a victim of parental violence *(i.e.* being hit by an adult with the intention of harm) was the most consistent predictor regardless of gender or outcome.[75] Hipwell *et al.*'s (2014) results showed that initial level and escalation in harsh punishment (between 10 and 13 years) and escalation in peer victimisation (10-15 years) predicted physical ADVA involvement.[76] In Lavoie *et al.*'s (2002) study, harsh parenting practices from ages 10 to 12 years were predictors of ADVA at age 16.[125] A substantial amount of literature has therefore identified family influence-related risk factors for ADVA, which appear to be supported by the social learning, attachment, feminist, gender role inequality and power/control theoretical perspectives. As with peer influence, it is important to remember that these perspectives are not theories of ADVA, and while they may be applied to explain single family influence-related risk factors thought to be associated with ADVA, it is likely that ADVA is not simply the result of behaviour replication or attachment characteristics, but a result of these connections in addition to other situational or individual factors. Moreover, as peer influences were identified as being potentially more important than those within the family context,[2] the role of attachment in relationships with peers and romantic partners may prove a promising line of future research. However, little is known about how such perspectives apply to TAADVA.

As with the social learning perspective, feminist, gender inequality, and attachment theoretical perspectives also have their limitations. Although the feminist and gender inequality theoretical perspectives help to explain the influence of some family-related risk factors (*e.g.* parental IPV), males are viewed as the primary instigators of violence and controlling behaviour, and when females are the instigators, such violence is construed as self-defence.[126] Other motives have been found for female ADVA, for example, anger, jealousy, substance use, and ethic enforcement,[8,27,30] many of which are shared with the motives for males. Although males have reported control as a motive for ADVA,[29] they have also found to report violence in self-defence too.[27] It has been identified that ADVA and TAADVA is both experienced and instigated by male and female adolescents, however highly controlling relationships and those which include a gendered power imbalance are still present,[26,34] particularity in terms of sexual ADVA/TAADVA.[8,127–129] Therefore, the feminist perspective may be more applicable to violent relationships that have a gendered nature to them, represented by male violence and control of females, than to other typologies of ADVA.

White (2009) draws on the interactionist approach to highlight how aggression is produced and defined by gender rather than gender producing aggression.[58] For example, male aggression may be seen to define masculinity and female aggression may represent the defending of femininity or the resistance of male domination. In addition, as women have entered the labour force and gained occupational power, they have become agents of change, signifying a move towards less patriarchal structures and male domination.[130] Adolescents may learn to use violence and controlling behaviours within relationships as a result of exposure to such norms and behaviours within their family regardless of the gender of the adult or family member who effectively teaches such behaviour and techniques. Gender role theories have also been criticised for being socially deterministic, minimising individual agency in choosing to adhere to social norms and stereotypes, and for being theoretically static and failing to account for social change.[131]

Attachment theory also has limitations. First, it does not explain why securely attached individuals instigate dating violence,[16] meaning there may be other contributing factors. Second, although attachment in adolescence is thought to be connected to adolescents' functioning in several major social relationships beyond the family and to both psychosocial function and dysfunction,[132] the nature of adolescent attachment is less well understood[133,134] and even more so within the context of ADVA (and TAADVA), despite research showing the potential role of such factors in IPV.[135–137] Third, Bolen (2000) argues that while support has been found to suggest attachment may be predictable, stable and dynamic, attachment should not be viewed as a dyadic process within the 'microsystem' and should also be viewed within the context of broader societal and cultural 'macrosystems'.[138]

3.5 Personal aggression

Personal aggression was recognised as a variable risk factor for ADVA in 10 of the 30 studies, identifying a total of 12 separate risk factors for ADVA victimisation, instigation, or involvement (Table 4). Four of the 12 studies reported three personal aggression factors as a correlate for TAADVA victimisation or instigation (Table 6). Personal aggression as a risk factor category has been operationalised in instruments measuring various types of delinquent and aggressive behaviours such as

fighting, bullying, and aggression against peers, at school and within the home. Personal aggression represented the third most commonly reported risk factor for ADVA, following family and peer influence.

The SLT,[59–61] attachment,[92–96] feminist and gender inequality,[77–81] and power and control theories[100–102] may also explain personal aggression as a risk factor for ADVA as a result of aggression being learnt as a way of behaving in and managing interpersonal relationships. The use and expression of aggression (and masculinity and femininity) within the peer and family context may also be communicated within romantic relationships if such relationship behaviours and gender role expectations have been previously learned and reinforced.[79,116,139] For example, adolescents who engage in or experience aggressive and delinquent behaviours in one aspect of their lives (*e.g.* the family or peer context) may learn to use such techniques in their own romantic relationships.[140,141] A number of studies have identified a connection between bullying behaviours toward peers and violent behaviours in dating relationships.[140–144]

Longitudinal studies have reported a range of personal aggression-related risk factors for the instigation of ADVA: delinquency and sibling aggression (males only) and bullying instigation,[145] fighting (males only),[124] aggression against peers (females only),[70,121] peer aggression and rape myth acceptance (for males),[146] physical bullying,[160] hostility in friendships,[118] and early adolescent aggressive-oppositional problems at home.[147] Zweig *et al.* (2013) also found that instigating cyberbullying was associated with TAADVA instigation,[38] as was bullying perpetration as identified by Van Ouytsel *et al.* (2017) and Peskin *et al.* (2017).[83,148] Specifically, Espelage *et al.* (2014) identified that for females, high school bullying instigation predicted sexual harassment violence instigation, and verbal/emotional and sexually coercive ADVA instigation.[145] For males, bullying instigation predicted sexual harassment violence instigation, verbal/emotional abuse and physical ADVA instigation, and sibling aggression and self-reported delinquency predicted sexually coercive and verbal/emotional ADVA instigation. Instigation of violence in one context appears to be related to that in another for both genders, although males reported more serious (*i.e.* greater levels) of sexual ADVA. McNaughton-Reyes and Foshee's (2013) finding that peer aggression and rape myth acceptance were risk factors for sexual ADVA instigation for males,[146] reflects the gendered nature to such risk factors supported by the feminist and gender inequality perspectives.[77–81] Gender and social learning perspectives may explain personal aggression and rape myth acceptance as risk factors for sexual ADVA through the learning, acceptance, and expectation of violence within relationships as an expression of masculine identity (*e.g.* male dominance over females).[149] Murnen, Wright, and Kaluzny (2002) conducted a meta-analysis on measures of masculine ideology and sexual aggression and found that hostile masculinity, hypermasculinity, views of men as dominant over women, and hostility towards women were components of masculine ideology that were most strongly associated with sexual aggression.[149] Rape myth acceptance however, was not as strong a correlate as expected.

Four risk factors were identified for ADVA victimisation: having been in a physical fight with a peer (males only),[75] early adolescent aggressive-oppositional problems at home and adolescent aggressive-oppositional problems at school,[147] and ADVA involvement: antisocial behaviour (males only),[125] and early adolescent aggressive-oppositional problems at home.[147] Specifically, in Lavoie *et al.*'s (2002) study, males who perceived lax monitoring from their parents in their late childhood and reported antisocial behaviour at age 15 years (*e.g.* delinquency and substance abuse) were at risk of becoming involved in violent dating relationships at age 16 years.[125] In addition, committing a greater variety of deviant behaviours was identified as a correlate for victimisation of TAADVA.[150] Bullying and physical aggression against peers may present a particular risk for males for both victimisation and instigation, although this was reported for both sexes.

3.6 Psychological adjustment and personal competencies

The area defined as Psychological Adjustment and Personal Competencies (PAPC) was recognised as a risk factor category for ADVA in 10 of the 30 studies, identifying a total of nine individual variable risk factors for ADVA victimisation, instigation, or involvement (Table 4). Only one of the 12 studies reported two PAPC-related correlates for TAADVA victimisation (Table 6). In addition, one study reported PAPC as a protective factor for ADVA instigation (Table 5), and one study reported PAPC as a protective correlate against TAADVA involvement.[51] The PAPC risk factors have been operationalised in instruments measuring various types of psychological, personal, behavioural, and relationship characteristics and while these represent one of the larger areas of risk in Table 4, they are sporadic in terms of the specific factors measured (*e.g.* various individual PAPC-related factors were identified in the studies reviewed).

Bowlbys attachment theory[92–96] may be applied to account for some of these PAPC factors (*e.g.* sensitivity to interpersonal rejection, anxious attachment, anxi-

ety, relationship hostility and conflict, depression, anger, and behaviour problems) as risk factors or correlates for ADVA/TAADVA. Bowlby (1984) theorised that poor experience of supportive relationships in childhood may result in fearful relationships in adulthood characterised by anxious and depressive problems.[96] In relationships, this fear and emotional reaction (*e.g.* anxiety or anger) may occur when a relationship is endangered (*i.e.* risk of loss) and may have a positive function (*e.g.* re-establish proximity). Such feelings may also be used in attempts to threaten or coerce a partner psychologically and physically.[96] In a study of 412 college students, Follingstad *et al*. (2002) identified that while anxious attachment was not directly related to attempts to control one's partner, this relationship was mediated by the person's angry temperament (*i.e.* anxious attachment was directly related to anger/angry temperament which was related to controlling behaviours).[151] Consequently, these PAPC-related risk factors may collectively contribute to ADVA/TAADVA and be connected to or result from other areas of risk, for example, parental violence and parent-child relationships as outlined by the attachment theory's explanation of the development of IWM of relationships.

Hazan and Shaver's (1987) seminal research explored the possibility that romantic love is an attachment process through which affectional bonds in infancy can be translated into terms appropriate in adult love.[135] They explain that more secure lovers described their love experiences as happy and trusting, while avoidant lovers were characterised by a fear of intimacy, and the anxious/ambivalent lover experienced love as involving obsession and extreme sexual attraction and jealousy.[135] From an attachment perspective, when proximity is disrupted, feelings of anxiety, anger or sadness may trigger attachment behaviours designed to re-establish proximity.[136] Adolescents displaying anxious insecure attachment styles may be more likely to experience and use ADVA as a way of re-establishing proximity or as a result of emotional reactions to disruptions in proximity or relationship maintenance (*e.g.* jealousy or frustration to, for example, lack of communication). Hazan and Shaver (1994) suggest this might be the root of many dysfunctional behaviours contributing to relationship dissatisfaction and dissolution.[136] In a study by Creasey and Hesson-McInnis (2001), adolescents (M = 20 years old) with more insecure and anxious attachment styles were found to have more difficulties regulating emotions when distressed with romantic partners; be more likely to report more anger, sadness, and fear during their interactions with romantic partners; report less confidence in emotional regulation during conflicts; and report more difficulties managing conflict.[152] Attachment theory may therefore provide support for PAPC-related risk/protective factors, although this is not without its limitations as identified in Section 3.4.

Studies have reported a range of PAPC risk factors for the instigation of ADVA: partner attachment anxiety,[153] anxiety (White youth),[71] high sensitivity to interpersonal rejection (females only),[119] depression/being depressed (females only),[71,155] depressive symptoms (males only),[74,153] externalising behaviour problems (females only and African-American females only)[73,74] and anger (Black youth).[71] Some of these risk factors, in addition to others, have also been identified for ADVA victimisation: anxiety (females only),[10] depression (females only),[124] being depressed (for sexual ADVA only),[75] low self-esteem (males only);[75] and TAADVA victimisation: having higher depressive symptoms and levels of anger/hostility;[150] and ADVA involvement: relationship conflict (*e.g.* hostility and conflict).[140] Depression appears to be a particular risk factor for ADVA victimisation for females and low self-esteem for males in these studies. Depression is also a risk factor for instigation for females and depressive symptoms a risk factor for males. Furthermore, Ulloa, Martinez-Arongo, and Hokoda (2014) found depressive symptoms to partially mediate the relationship between attachment anxiety and ADVA instigation (10 months after).[153] High sensitivity to interpersonal rejection and externalising behaviours appear to be risk factors for instigation for females but not for males. Anxiety over of a partner's responsiveness to communication and engagement in the relationship has also been identified as a key theme related to TAADVA instigation for young adolescent females.[33]

Two studies identified protective factors for ADVA instigation: higher empathy;[155] and TAADVA involvement: higher levels of mindfulness.[51] McCloskey and Lichter (2003) note that females showed higher empathy scores overall than males, but empathy served as a buffer against peer and dating aggression equally for both sexes.[155] Epstein-Ngo *et al*.'s (2014) study of risk and promotive factors for TAADVA was conducted with 210 high-risk primarily African-American adolescents and findings suggest that ADVA/TAADVA interventions should consider strategies to increase mindfulness, although no further explanation regarding how or why are provided by the authors.[51] These findings highlight the role of various PAPC-related risk factors and correlates that may contribute to ADVA, however more research is needed in order to explore whether these are causal risk factors or instead related to a more complex structure of influences. Furthermore, the role of attachment

characteristics in TAADVA and ADVA remain relatively unexplored and require further attention.

3.7 Substance use

The fifth most common risk factor category that was found in nine of the 30 studies, identifying a total of eight individual variable risk factors for ADVA victimisation or instigation, was substance use (Table 4). Substance use was also identified as a protective factor for ADVA instigation in one study (Table 5), and as a correlate for TAADVA instigation in one study (Table 6). Substance use has been operationalised in instruments measuring various types, frequencies and severities of alcohol and drug use. There are no theories that have accounted for substance use as a risk factor for ADVA, however in their problem behaviour theory, Jessor and Jessor (1975, cited in Foshee *et al*. 2001: 131) suggest that adolescents who engage in one problem behaviour (*e.g.* drug use) may be more likely to engage in other problem behaviours such as early sexual intercourse and aggressive behaviours due to influences from collective individual and environmental predictors.[156] However, this does not specifically explain the process of how these factors account for ADVA. As identified in this review (Table 4, Table 5 and Table 6)), a number of problem behaviours have been identified as risk factors/correlates of ADVA/TAADVA, suggesting that these may be cumulative risk factors.

Studies have reported a range of substance use risk factors for instigation of ADVA: alcohol use (females only),[72,120] heavy alcohol use,[121] marijuana use (females only),[71,121] hard drug use (males only),[120,121] and drug and alcohol use;[73,74] and for victimisation: alcohol use (females only),[10] total drinking behaviours and frequency of drinking behaviours (females only),[124] and drug use (females only).[157] Van Ouytsel *et al*. (2017) identified that substance use, including alcohol and cigarettes and the misuse of over-the-counter and prescription medications, was associated with TAADVA instigation.[83] Only two studies controlled for baseline dating violence.[71,157] Specifically, Raiford *et al.* (2007) noted that after controlling for dating violence, female adolescents who used drugs at baseline were twice as likely to experience ADVA relative to female adolescents who did not report using drugs over the previous year.[157] Foshee, McNaughton-Reyes, and Ennett (2010) also identified that for males, marijuana use was actually a protective factor against ADVA instigation.[71] Some form of alcohol use was a risk factor for victimisation and instigation for males and females; however, drug use was only identified as a risk factor for victimisation for females. With regards to instigation, while drug use was identified as a risk factor for ADVA for both sexes, marijuana was identified as a particular risk factor for instigation for females, while hard drug use was associated with male instigation of ADVA. Alcohol and drug use has also been identified as an adolescent coping strategy for stress (which may include ADVA), in addition to being a symptom of abuse or addiction, blunting emotions, or being motivated by peer approval.[158] More research is needed in order to explore how substance use, in addition to other problem behaviours, may lead to ADVA/TAADVA for both males and females and whether this is a risk factor, consequence, or both.

3.8 Attitudes

Attitudes regarding dating violence were recognised as an area of risk for ADVA in four of the 30 studies, identifying a total of six individual variable risk factors for ADVA victimisation, instigation or involvement (Table 4). In addition, two factors in this category were identified as correlates for TAADVA instigation in two separate studies (Table 6). Attitude-related risk factors have been operationalised in instruments measuring acceptance of dating violence, attitudes regarding traditional gender roles, and understanding of healthy relationships.

The social learning,[59–61] attachment,[92–96] feminist and gender role/inequality,[77–81,97–99,115,131] and power and control[100–102] theoretical perspectives may each contribute to explanations of how attitudes lead to ADVA through the observation, learning and modelling of accepting or tolerant attitudes, norms and values towards dating violence and the socialisation and expectation of masculine and feminine gender roles. This theme of 'attitudes' as a risk factor strongly interrelates with other areas of risk at the socio-cultural, family, peer and personal levels of influence in which such attitudes may be taught and reinforced. Sutherland, Cressey, and Luckenbill's (1992) theory of differential association also outlines how gender roles of masculinity and femininity may be developed through interaction with intimate personal groups who teach not only the techniques for deviant behaviour but also the values and attitudes related to the motives for such behaviour.[139] Próspero (2007) further suggests that boys' perceptions about their social relations to girls may have been learned in their everyday social interactions with their family members, peers, members of the community and the media.[159] Such theoretical perspectives are particularly important in explaining how traditional gender role norms and attitudes that are tolerant towards violence may place adolescents at risk of dating violence. Cross-sectional studies investigating adolescent attitudes towards dating violence have generated some noteworthy findings. Hird (2000) found

that physical acts such as slapping, hitting and punching were described as a "normal" part of adolescent relationships, with most girls reporting being hit, held down, slapped, kicked, or punched by their boyfriends.[161]

Longitudinal studies have reported a range of attitude-related influence risk factors for instigation of ADVA: attitudes accepting of dating violence (males only),[72] acceptance of male-to-female dating violence, traditional beliefs about the family, and gendered dating scripts.[162] Some of these risk factors in addition to others have also been identified for ADVA victimisation: traditional beliefs about the family and gendered dating scripts,[162] and having less understanding of healthy relationships (females only);[157] and ADVA involvement: attitudes accepting of aggression.[53] In terms of TAADVA, endorsement of gender stereotypes[85] and norms for violence for boys against girls[148] were also identified as correlates for instigation.

Specifically, Raiford *et al*. (2007) noted that relative to female adolescents' not experiencing dating violence, those who did were twice as likely to report less understanding of healthy relationships.[157] Lichter and McCloskey (2004) identified that possessing traditional attitudes of male-to-female relationships and justifying relationship violence was more important than whether they witnessed marital violence in childhood in predicting ADVA instigation.[159] They also noted that males involved in physical and sexual ADVA were more likely than females to endorse traditional family and gender role beliefs and dating scripts, which lends support to feminist perspectives and explanations of sexual violence. Traditional gender-role attitudes defined by masculine ideology that support male privilege and power in society are reported to encourage, condone and perpetuate sexual violence against women.[149] From this perspective, males are encouraged to be violent order to express their masculinity, while women are viewed to be sexually passive in order to be feminine.[149] Information and attitudes about gender inequality and power may be influenced at the local, regional or global levels and learned through broader societal structures as well as within the family context before being translated into adolescents own romantic relationships and expectations.[163]

The social learning, feminist, gender role/inequality, and attachment theoretical perspectives may therefore contribute to explaining how traditional gender roles and attitudes that are tolerant of ADVA are developed and modelled within adolescents' own romantic relationships. However, other factors such as education about healthy relationships and gender equality, or the presence of positive family and peer relationships may counter such views. In a study based on a sample of 82 adolescents (age 14-17 years) recruited from truancy courts and juvenile probation and victim services, Mueller *et al*. (2013) found that ADVA instigation at baseline predicted acceptance of violence at follow-up (3 months), after accounting for baseline levels of beliefs.[164] However, beliefs at baseline, did not predict ADVA instigation at follow-up. Therefore, attitudes may play a potential role in ADVA both before and after its onset. Beliefs and attitudes about domestic violence among adolescents and young adults (n = 891; M = 19.4 years) have also been reported to influence the intent to report abuse and actual reporting behaviour.[165]

Finally, to reiterate, social learning, feminist and gender inequality, and attachment theories are not theories of ADVA and therefore these can only be applied to these identified risk factors/correlates for ADVA in an attempt to understand how attitudinal-related risk factors may lead to ADVA. Concepts such as masculinity and femininity (and in particular hegemonic masculinity) have also been contested in research.[131,163,166,167] These authors have argued against the idea of a one-dimensional notion of male masculinity and dominance as supported by the radical feminist perspective and argue for the recognition of multiple masculinities. Connell (1987, 2005) argues that in reality, most men do not actually fit the image of the tough, dominant and combative masculinity that the ideologies of patriarchy propose and may be subject to power, domination and ridicule by other males and/or women within society.[131,168] Males may also be taught to be chivalrous,[169] to protect and respect women such as their wives, partners and mothers,[168,170] and to have positive male and female role models in their lives.[163] The assumption that all men behave violently for the purpose of controlling women ignores the complexity in which gender and masculinity are situationally and differentially accomplished throughout society.[167] Furthermore, Connell and Messerschmidt (2005) argue that gender hierarchies are affected by social changes in women's identity and practice, identifying a need for a more complex understanding of gender inequalities that recognises womens agency and the interplay among local, regional and global levels of gender role norms and influences.[163] For example, women may challenge and resist patriarchy,[163] as seen in White's (2009) assertion that females may use violence as a way of defending her femininity.[58] Intersectional feminism that considers aspects of race, class, gender, sexuality and disability is believed to provide a fuller account of intersecting inequalities, oppression and differentials in power and dominance between men and women,[114,171,172] but also

between men and men, women and men, and women and women. The diverse range of behaviours and the context in which ADVA is experienced is complex, meaning more detailed and comprehensive theories are needed to fully account for the multidimensional nature of ADVA/TAADVA and attitudinal predictors.

3.9 Past dating violence, other dating violence

Past dating violence was recognised as a risk factor category for ADVA in six of the 30 studies, identifying a total of six individual risk factors for ADVA victimisation, instigation or involvement (Table 4). Eight of the 12 TAADVA studies also reported other dating violence experience as a correlate for TAADVA victimisation, instigation or involvement (Table 6), identifying 13 individual types of correlates. Past and other dating violence as a risk factor/correlate has been operationalised in instruments measuring prior victimisation, instigation or involvement in dating violence. In the case of TAADVA, this is broken down into physical, psychological, and sexual violence/coercion.

Four theories that may be used to account for past or other dating violence as a risk factor for ADVA and TAADVA are the SLT,[59–61] attachment,[92–96] feminist and gender inequality,[77–81,97–99] and power and control theories.[100–102] These theoretical perspectives may help to explain how prior or other dating violence as a risk factor or correlate, leads to or is associated with future or other types of ADVA/TAADVA. For example, earlier learned foundations of understanding of what a relationship should be like (*i.e.* experiencing or using conflict, power, violence, and coercive tactics to communicate, negotiate, and manage conflict in relationships) forms the basis of behavioural expectations in future relationships. Such findings may also provide support for the attachment perspective's view that unhealthy relationships or relationships that involve violence may be a result of poorly matched attachment characteristics.[136]

Studies have reported a range of past ADVA risk factors for instigation of ADVA; including prior ADVA victimisation,[117,121,153] prior ADVA instigation,[120] prior individual relational aggression,[69] own use of physical aggression (risk for partner's use) and partner's use of aggression (risk for own use),[154] and physical ADVA (and rape myth acceptance; for males);[146] and to a lesser extent, victimisation of ADVA: prior ADVA victimisation.[117,153] Although not identified as a specific risk factor in their primary investigation, Foshee *et al*. (2004) also identified that young adolescents already experiencing mild forms of ADVA were almost two-and-a-half times as likely than their non-victimised peers to become victims of serious physical ADVA and 1.3 times more likely to become victims of sexual ADVA.[75] The finding that both past physical ADVA and rape myth acceptance[146] were associated with sexual ADVA instigation for males, again provides support for the feminist perspective if these behaviours are underpinned by values of male power and domination over females.[77–81] Sociocultural models incorporating patriarchal masculine ideology (*i.e.* masculine gender roles) and situational factors' relevant to sexual aggression are thought to be most promising in predicting sexual violence.[149]

Other ADVA experience has also been reported as a correlate for TAADVA instigation: physical ADVA victimisation,[82] physical ADVA instigation,[38,82,173] psychological ADVA victimisation,[82] psychological ADVA instigation,[38,82,173,174] sexual coercion instigation,[38] sexual ADVA victimisation,[82] sexual ADVA instigation,[82] being an instigator of offline ADVA,[86] stalking victimisation;[82] and stalking instigation;[82] and TAADVA victimisation: physical ADVA victimisation,[38,82,150] physical ADVA instigation,[173] psychological ADVA victimisation,[38,82,150,173] psychological ADVA instigation,[82,173] sexual coercion victimisation,[38,150] sexual ADVA victimisation,[82] being a victim of offline ADVA,[86] and stalking victimisation;[82] and finally TAADVA involvement: physical ADVA,[51] physical ADVA victimisation, and sexual ADVA victimisation.[50]

Notably, in Zweig *et al*.'s (2013) study, those who instigated sexual TAADVA reported rates of instigation of sexual coercion 17 times higher than that for non-instigators of sexual TAADVA (34% vs. 2%) and those who experienced sexual TAADVA reported rates of sexual coercion seven times that for non-victims of sexual TAADVA (55% vs. 8%).[38] Epstein-Ngo *et al*. (2014) reported that a one-unit increase in physical ADVA frequency was associated with a 20% increase in TAADVA.[51] Sixty-nine per cent of adolescents reporting sexual TAADVA also reported non-sexual TAADVA victimisation in Dick *et al*.'s (2014) study.[50] Sexual TAADVA was also related to sexual ADVA victimisation (18% vs. 6%), and sexual violence victimisation from a non-partner (36% vs. 10%). Non-sexual TAADVA was related to physical ADVA victimisation (14% vs. 2%), sexual ADVA victimisation (14% vs. 4%), and non-partner sexual violence (22% vs. 9%).[50]

Prior involvement in dating violence was therefore identified as a risk factor for further ADVA/TAADVA in these studies (for instigation in particular), signifying the importance of intervention for adolescents already involved in abusive relationships as well as for those at risk for ADVA. Various types of traditional

ADVA (physical, psychological, sexual, and stalking) were identified as correlates for TAADVA victimisation, instigation or involvement. These studies suggest that ADVA and TAADVA are not experienced in isolation from each other and that non-sexual and sexual forms of ADVA/TAADVA may also be linked. Considering the developmental and influential period of adolescence, these findings show concern for the acceptance of relationships that include violence and a risk of such behaviours and norms being carried through to more serious adult romantic relationships.[175]

3.10 Media exposure

Media exposure was recognised as a risk factor category for ADVA in three of the 30 studies, identifying a total of two individual risk factors for ADVA victimisation, instigation, or involvement (Table 4). Media exposure as a risk factor has been operationalised in instruments measuring aggressive media usage and having viewed X-rated movies. The SLT perspective[59–61] and feminist and gender inequality perspectives[77–81,97] may be used to explain the influence of media exposure as a risk factor for ADVA. Aggressive behaviours may be learnt and modelled from influences such as aggressive media exposure, potentially contributing to the use or acceptance of violence among adolescents who view such materials. For example, studies have reported aggressive media usage, mediated by violence-tolerant attitudes as a risk factor for ADVA victimisation,[157,176] instigation,[176] and involvement.[53] Raiford *et al*. (2007) considered X-rated movies in the context of physical exposure of negative interpersonal power dynamics between men and women and found that relative to female adolescents who have not experienced ADVA, those who did were almost twice as likely to have viewed X-rated movies.[157] Friedlander *et al*. (2013) suggest that their findings provide strong evidence of the negative long-term effect of exposure to multiple forms of aggressive media and that this effect occurs, at least in part, through the influence of attitudes tolerant of violence.[176] Manganello (2008) has similarly identified the potential role of media exposure in influencing teenage attitudes, knowledge and behaviours with regards to ADVA by providing role models and examples of how to act in dating relationships.[177] In addition, pornography may help to construct and support attitudes and behaviours that are consistent with the patriarchal structure,[149] and in which adolescents learn gendered and sexualised expectations of behaviours in romantic and sexual relationships.[128]

3.11 Sexual attitudes, behaviours and health

Sexual attitudes and behaviours were recognised as a risk factor category for ADVA in one of the 30 studies, identifying a total of three individual risk factors for ADVA instigation (Table 4). Three of the 12 studies also reported a total of five sexual health and behaviours as correlates for TAADVA victimisation, instigation or involvement (Table 6). This type of factor has been operationalised in instruments measuring past sexual behaviour, non-use of contraception and reproductive coercion. As with broader attitudes regarding dating violence and traditional gender roles, the SLT,[59–61] feminist and gender inequality perspectives[77–81,97] may each be applied to account for sexual attitudes and gendered sexually coercive health risk behaviours as risk factors for ADVA/TAADVA. Such theoretical perspectives and ideologies that support male authority, dominance and entitlement to violence, control and sexual intimacy towards passive females may help explain how sexual attitudes and behaviours with a particular gendered nature to them (*e.g.* female reproductive coercion) contribute to ADVA. In addition, problem behaviour theory may also be indirectly applied here in terms of the collective risks or influences of problem behaviours.[156]

Cleveland, Herrera, and Stuewig (2003) have reported a range of sexual attitudes and behaviours that are risk factors for instigation of ADVA for males:[124] sex desirability, relative timing of sex and love and past sexual behaviour (*i.e.* number of sexual partners). Having had sexual activity in ones lifetime was also identified as a correlate for TAADVA victimisation,[150] and contraceptive non-use and reproductive coercion were identified as a correlates for TAADVA involvement for females.[50] Having had sexual intercourse and having alcohol and drugs before having sex were correlates for TAADVA instigation.[83] Dick *et al*. (2014) noted that females exposed to TAADVA were two to four times more likely to not use contraception and three to six times more likely to have experienced recent reproductive coercion compared to unexposed females.[50] Sexual attitudes, behaviours and health may therefore present one of a number of predictors that together, may increase adolescents likelihood of ADVA/TAADVA. However, as with all identified risk factors that are not causal, it is likely that this is one of a number of problem behaviours or influences in adolescents lives that may place them at increased likelihood of ADVA/TAADVA.

3.12 Demographics

Demographic factors were recognised as a risk factor category for ADVA in two of the 30 studies, iden-

tifying one individual risk factor (or fixed marker) for ADVA victimisation or instigation (Table 4). Three of the 12 studies also reported demographics as a correlate of TAADVA victimisation or instigation (Table 6). There are no theories that have accounted for demographic characteristics as risk factors for ADVA/TAADVA, however studies have identified that being of a race other than White was a fixed marker for ADVA instigation[72,87] and victimisation[87] for females. Being female was also a correlate for TAADVA victimisation[82,150] and instigation.[85] In addition, being older was a correlate for TAADVA instigation.[85]

3.13 Education and intelligence

Educational and intelligence factors were recognised as a risk factor category for ADVA in two of the 30 studies, identifying four individual risk factors for ADVA victimisation or instigation (Table 4). One study also reported an educational factor as a protective factor against ADVA victimisation and instigation (Table 5). Educational and intelligence factors have been operationalised in studies measuring adolescents school attachment, average grades, and verbal IQ. No theories have accounted for education and intelligence as risk factors for ADVA. Studies have reported education and intelligence risk factors for instigation of ADVA: academic difficulties,[74] lower grade point average and verbal IQ (for males);[124] and ADVA victimisation: lower grade point average, and low levels of school attachment (for females).[124] Only one study identified educational factors to be a protective factor for instigation and victimisation of ADVA and that was having higher average grades (for females).[87] Although this category of risk was not prominent in the studies reviewed, educational factors such as average school grades and school attachment were suggested to be both risk and protective factors for ADVA, highlighting the role of both positive and negative educational influences in ADVA. More research is needed in order to understand how such factors may lead to an increased or decreased likelihood of ADVA.

3.14 Other sexual aggression

Other sexual aggression experience was also recognised as a correlate for TAADVA in two of the 12 studies, identifying a total of three individual correlates of TAADVA victimisation, instigation or involvement (see Table 6). In these studies, sexual harassment instigation was identified as a correlate for TAADVA instigation, sexual harassment victimisation for TAADVA victimisation,[173] and non-partner sexual assault victimisation for TAADVA involvement.[50] As this area of risk was identified as a correlate only, theories have not been applied here to the extent of the other factors. However, the social learning perspective[59–61] may be relevant if sexual harassment and TAADVA are experienced and accepted as normalised behaviour within adolescence.

3.15 Relational factors

Two relational factors were identified as correlates for TAADVA victimisation and instigation in two of the 12 TAADVA studies (Table 6). The length of the romantic relationship was identified as a correlate for TAADVA victimisation[84] and having a current boyfriend/girlfriend was a correlate for TAADVA instigation.[148] Theories have not yet been applied to such areas of association.

3.16 Physical Health

One study identified one physical health-related factor, poor physical health, as a correlate of TAADVA instigation[83] (Table 6). As only one recent study has identified this factor and only as a correlate for TAADVA, no theories have yet been applied. It is difficult to conclude the significance of this factor due to limited research.

3.17 Environment

One study reported an environmental factor as a correlate for TAADVA involvement (Table 6) and operationalised this correlate as community violence exposure.[51] Community violence exposure as a correlate of TAADVA may be explained with the application of SLT[59–61] through the influence and modelling of aggressive behaviours or values learnt within the community in adolescents own romantic relationships. Epstein-Ngo *et al*. (2014) noted that a one-unit increase in community violence exposure frequency was associated with an 18% increase in TAADVA.[51] Due to limited research that has investigated environmental factors as risk factors for ADVA/TAADVA, it is difficult to draw firm conclusions from these findings.

3.18 Social status

Social status was recognised as a risk factor for ADVA in only one of the 30 studies, identifying one individual risk factor for ADVA instigation (Table 4). There are no theories that have accounted for social status as a risk factor for ADVA, however being high in social status was reported as a risk factor for instigation and for females only.[70] Due to limited research for this factor it is difficult to conclude its significance.

3.19 Online risk behaviour

Other risk behaviour was recognised as a correlate for TAADVA in two of the 12 TAADVA studies identifying four individual correlates for TAADVA victimisation (Table 6). These included sharing passwords with a significant other,[86] engagement in online risk behaviour, engagement in sexting with the romantic partner, and the amount of social networking site use.[84] This might suggest that adolescents who freely share their passwords and send sexual images to a partner place themselves at increased likelihood of TAADVA by leaving their personal accounts and privacy available to intrusion by a partner for abusive or surveillance purposes. Additionally, frequent use of online social media tools and engagement in risky behaviour online may open up opportunities for abuse as a result of increased exposure to potential instigators as part of adolescents' daily routines as explained by routine activity theory.[178] Furthermore, although self-control theory[179] has not been applied to explanations of TAADVA, Ngo and Paternoster (2011) found that low-levels of self-control were related to increased likelihood of experiencing online harassment from a stranger or non-stranger.[180] The free sharing of information online and availability of personal details may allow a partner to access the others social networking accounts or mobile phones covertly which may lead to risks that information could be used in a negative way (*i.e.* online harassment) and in the context of TAADVA.

3.20 Methodological factors relevant to the interpretation of the results

Several risk and protective factors for ADVA and correlates for TAADVA have been identified with variations in how these factors are defined and measured. The broad range of individual risk and protective factors have been summarised into categories of risk to provide an overview of factors relevant to ADVA and TAADVA. The variations in ways risk factors/correlates are defined and measured, which for many essentially measure variants of the same behaviour, makes firm conclusions difficult to ascertain. Some broad conclusions can be made from the findings of this review, however studies present a scattered variety of influences, with some factors (*e.g.* peer aggression, peer ADVA, family IPV exposure, personal aggression, and past ADVA) becoming more prominent in the literature while other factors are more sporadic (*e.g.* PAPC-related factors), but collectively and theoretically prominent. Furthermore, variations in study length, number of data collection waves, ages of participants, the type of samples, and factors that are controlled for may influence research findings and their comparability. There is a clear need for more longitudinal studies and for a standard risk instrument in order to make further research more comparable. There is a particular lack of longitudinal research for TAADVA and a lack of risk research on ADVA and TAADVA in the UK. More standardised methods and measures would provide opportunities to make comparisons between studies in order to understand what and how risk/protective factors leave adolescents at increased or decreased likelihood of becoming involved in ADVA/TAADVA.

Ideally, studies should follow young people from early adolescence or childhood, in order to control for as many factors as possible (including previous dating violence), in order to assess risk at various life points, thereby improving reliability and conclusiveness of future research findings. However, some of these factors would be practically and ethically challenging to study and follow over a long period of time without intervention. A lack of research identifying causal risk factors leads to questions in terms of the validity of these findings due to the methodologies not directly measuring cause-effect relationships.[181] These risk/protective factors or correlates identified in this chapter can only be explained with the application of Level 2 theories of behaviour,[46] through potential explanations of how these single risk and protective factors may contribute to ADVA/TAADVA victimisation and/or instigation, rather than providing comprehensive explanations. Therefore, ADVA and even more so TAADVA, is not theoretically advanced, and while many individual risk factors have been identified, no coherent theoretical framework currently exists.

4 Discussion

The findings from this paper highlight that ADVA and TAADVA consist of a diverse range of abusive and controlling behaviours and relationships may vary in terms of the use of controlling behaviours, type of violence (physical, psychological, and sexual) and whether the violence is uni- or bi-directional and gender symmetric or not. This review of risk and protective factors/correlates for ADVA/TAADVA identified an extensive range of factors, particularly for ADVA. Many of the risk factors were reported for both victimisation and instigation of ADVA and TAADVA. Studies reporting risk factors for instigation are much more prevalent in the literature. These factors have been organised into collective areas of risk, protection or association, in order to attempt to critically synthesise their significance in relation to the empirical evidence and applicable available theories. An

absence of longitudinal studies that have investigated the trajectories, typologies, motives, risk and protective factors for TAADVA signify a need for future research in order to more accurately explain TAADVA and its associated risks. In addition, further rigorous research is needed to establish cause-and-effect relationships. Further research is also needed to explore gender differences in risk factors for ADVA and TAADVA, because while many similarities are found in this review, some notable differences were apparent (*e.g.* for risk areas such as substance use, peer influences, and certain PAPC and educational factors), and gender differences are not always reported with regards to TAADVA. Such research should utilise more standardised risk assessment tools in order to facilitate accurate comparisons.

In terms of ADVA, family influence (13 studies) and peer influence (11 studies) were the most prominent risk factors identified in the review for both victimisation and instigation. Although, peer influence was reported to be more significant in adolescents' own involvement in ADVA due to peers reportedly playing a more influencing role than parents during adolescence.[2] Following this, PAPC (10 studies), personal aggression (nine studies), and substance use (nine studies) were the next most prevalent risk factors for ADVA. Bowen and Walker (2015: 55) note that risk and protective factors identified at the individual (*i.e.* ontogenetic) level may have the strongest relationship with ADVA due to their developmental proximity.[57] Other ADVA victimisation, instigation, or involvement was a common correlate for both victimisation and instigation of TAADVA. Peer influence (two studies) was the most commonly reported protective factor for ADVA, although limited research is available on protective factors. These findings highlight implications in terms of a need to take into consideration the multiple factors (*e.g.* peer, familial, personal, attitudinal and PAPC) that may be relevant to ADVA and TAADVA in order to inform both prevention (*i.e.* through education) and intervention (*i.e.* through support services).

Throughout this review, ADVA/TAADVA and the associated risk factors/correlates have been primarily explained using the social learning, feminist and gender role, and attachment theoretical perspectives, which each have their strengths and growing empirical evidence to support them. However, they each have their weaknesses and at the moment no comprehensive theory of ADVA/TAADVA exists. These are not specific theories of ADVA/TAADVA and therefore cannot provide a comprehensive account (*e.g.* Level 1 theories[46]) for how these risks or correlates may explain ADVA/TAADVA, but rather how such factors may be potential influences in adolescents' acceptance, experience and/or use of ADVA/TAADVA by identifying characteristics of those involved in ADVA/TAADVA. Furthermore, the extent to which these factors and theories have been applied to TAADVA has been limited. In order to progress towards a more comprehensive understanding of ADVA and TAADVA, further research is needed to explore whether factors and theories found to be associated with ADVA are also associated with TAADVA, and the potential role of available theories in combination in explaining such behaviour in order to build on this to make steps towards developing a competent comprehensive theory of ADVA/TAADVA. Despite their differences, there are similarities between these three theoretical perspectives that have been applied to explanations of ADVA that can work in sync in order to provide a more detailed account of ADVA/TAADVA.

Social learning theory offers an overarching sociocultural explanation of the learning process of violent behaviours, attitudes, relationship functioning, and societal expectations of gender, and has widely been researched and applied to ADVA (particularly in terms of influences such as peer ADVA, family violence and attitudes). The feminist perspectives on the other hand specifically identify how the broader structural, sociocultural prescriptions of gender, inequality, patriarchy, oppression, power, and dominance are learned. The attachment theoretical perspective provides an explanation of how individual socio-cognitive factors such as attachment style characteristics (*e.g.* security, anxiety and avoidance) developed in the family during childhood may influence violence in relationships as a result of the development of IWM of relationship functioning. For example, family violence and problematic parent-child relationships are viewed as resulting in insecure attachment style characteristics. The attachment perspective also helps to explain several PAPC and behaviours (*e.g.* relationship hostility and conflict, depression, self-esteem, anxiety, sensitivity to interpersonal rejection, and behaviour problems) related to relationship functioning. The combination of all three theoretical perspectives together help to explain how violence in relationships becomes learned, favoured, tolerated, accepted and even expected as a way of communicating and negotiating intimacy, sexuality, gender-roles, conflict and power, at all levels of the ecological model. In addition, these perspectives each attempt to explain the motives, techniques, and sources of reinforcement (*i.e.* power, control, establishing proximity in relationships, social approval, or defending gender[182]) shaped within the familial, peer, and cultural contexts during childhood and adolescence. Referring back to the attributes of a good

theory,[47,48] a combination of these theoretical perspectives outlined in this review shows potential for accounting for multiple existing findings. This also shows opportunity for integration (*i.e.* attempts to adhere to the attribute of unifying power) of these theories in order to account for the various influences in ADVA/TAADVA in an innovative way (*e.g.* the role of socio-cultural influences as well as socio-cognitive influences, individual, and situational factors of the ecological model). There however, appears to be a gap in the literature regarding the role of attachment style characteristics in ADVA and TAADVA and the role of peer (social learning perspective) and gender inequality (feminist perspective) influences in TAADVA.

The role of attachment theory in adolescent relationships and ADVA/TAADVA is considerably less empirically and theoretically advanced compared to the SLT and feminist perspectives. Attachment theory appears to account for several family influence, personal, PAPC-related, and attitudinal factors found to be associated with ADVA/TAADVA. However, there has been little research on adolescent attachment theory, attachment characteristics and its role in ADVA or TAADVA directly, despite having been identified and researched within the context of adult IPV, being identified as a potential issue in this review. Furthermore, it is not known how attachments to different groups (*i.e.* parents, peers, and romantic partners) differ and their role in ADVA/TAADVA. For example, the finding that peer influences were particularly important (compared to family influences) may suggest that peer attachments play an equally significant role in ADVA/TAADVA as parental attachment. With regards to ECT, adolescents have been found to develop and maintain relationships online and consider those to be attachment relationships.[183] A small study by Levine and Edwards (2014) with two adolescent females (age 15) found that for the females, attachment 'made sense' as a way of describing both their offline and online friendships, and that their secure relationships with parents were interpreting or guiding relationships with online friends.[183] More research is needed to explore the role of various attachments in TAADVA and adolescent romantic relationships more generally.

The potential role of attachment anxiety within romantic relationships was identified as a key theme and a particular issue for young females in a study by Stonard *et al.* (2017) that explored the role of ECT in romantic relationships, communication and dating violence.[33] In Stonard *et al.*'s (2017) study, younger adolescent females were found to report feelings of anxiety, insecurity, jealousy, and obsession in terms of their ECT use within romantic relationships.[33] They also perceived the importance of communication more strongly, had a greater preoccupation with a partner's responsiveness to communication (*i.e.* proximity seeking), and worried about a partner's fidelity and communication with others of the opposite sex. This appeared to be enhanced by unique features of ECT (*e.g.* the constant, instant access and availability to contact a partner and access their personal information online). As a new method to communicate abusive behaviours, it is not known whether traditional theoretical perspectives equally apply to TAADVA instigated electronically, whether these traditional theories apply but need to be adapted, or whether even further developments of a new theory needs to be established in order to account for this new context of behaviour.[184]

Finally, as a result of a lack of empirical research regarding adolescent attachment and romantic relationships, it is not known how factors such as age, maturation, relationship seriousness and dating behaviours may influence adolescent attachment to romantic partners and how such attachments influence adolescent experiences of ADVA/TAADVA. Cleveland, Herrera, and Stuewig (2003) suggest that their findings provide support for relationship seriousness not as a direct predictor of ADVA, but as a mediator or facilitator for some of the identified individual-level characteristics thought to influence ADVA such as school attachment (males and females), timing of sex and love (males), grade point average (males), and number of sexual partners (females).[124] Further research is needed to explore the role of attachment, relationship characteristics, and peer influences such as friend dating violence in self-reported ADVA and TAADVA.

5 Conclusion

This paper has critically reviewed and synthesised the literature that has reported on risk/protective factors and correlates of ADVA/TAADVA and relevant theoretical perspectives. It is concluded that various theoretical perspectives are needed to account for the multidimensional nature of ADVA/TAADVA and the numerous potential influencing factors associated with ADVA/TAADVA. Based on the findings from this review, it is recommended that further research is needed to establish a more comprehensive theory of ADVA and TAADVA and that future measures of longitudinal risk factors for ADVA and TAADVA should attempt to standardise factors explored and aim to measure factors represented by the highest and most methodologically sound risk factor status (*i.e.* causal risk factors).

References

[1] Stonard KE, Bowen E, Lawrence TR, *et al*. The Relevance of Technology to the Nature, Prevalence and Impact of Adolescent Dating Violence and Abuse: A Research Synthesis. Aggression and Violent Behavior, 2014, **19**(4): 390-417. https://doi.org/10.1016/j.avb.2014.06.005

[2] Leen E, Sorbring E, Mawer M, *et al*. Prevalence, Dynamic Risk Factors and the Efficacy of Primary Interventions for Adolescent Dating Violence: An International Review. Aggression and Violent Behavior, 2013, **18**(1): 159-174. https://doi.org/10.1016/j.avb.2012.11.015

[3] Centers for Disease Control and Prevention. 2012, Understanding Teen Dating Violence., viewed June 6, 2015. http://www.cdc.gov/violenceprevention/pdf/teen-dating-violence-factsheet-a.pdf

[4] Stonard KE. The Prevalence and Overlap of Technology-Assisted and Offline Adolescent Dating Violence. Current Psychology, 2018, 1-15. https://doi.org/10.1007/s12144-018-0023-4

[5] World Health Organization. 2015, Adolescent Development, viewed July 24, 2015. http://www.who.int/maternal_child_adolescent/topics/adolescence/dev/en/

[6] Kraemer HC, Kazdin AE, Offord DR, *et al*. Coming to Terms With the Terms of Risk. Archies of General Psychiatry, 1997, **54**(4): 337-343. https://doi.org/10.1001/archpsyc.1997.01830160065009

[7] Straus MA. Prevalence of Violence Against Dating Partners by Male and Female University Students Worldwide. Violence Against Women, 2004, **10**(7): 790-81. https://doi.org/10.1177/1077801204265552

[8] Barter C, McCarry M, Berridge D, *et al*. 2009, Partner Exploitation and Violence in Teenage Intimate Relationships, NSPCC, London, viewed June 6, 2015. http://www.nspcc.org.uk/globalassets/documents/research-reports/partner-exploitation-violence-teenage-intimate-relationships-report.pdf

[9] Orpinas P, Hsieh HL, Song X, *et al*. Trajectories of Physical Dating Violence from Middle to High School: Association with Relationship Quality and Acceptability of Aggression. Journal of Youth and Adolescence, 2013, **42**(4): 551-565. https://doi.org/10.1007/s10964-012-9881-5

[10] Brooks-Russell A, Foshee VA and Ennett ST. Predictors of Latent Trajectory Classes of Physical Dating Violence Victimization. Journal of Youth and Adolescence, 2013, **42**(4): 566-580. https://doi.org/10.1007/s10964-012-9876-2

[11] Johnson WL, Giordano PC, Manning WD, *et al*. The Age-IPV Curve: Changes in the Perpetration of Intimate Partner Violence During Adolescence and Young Adulthood. Journal of Youth and Adolescence, 2014, **44**(3): 708-726. https://doi.org/10.1007/s10964-014-0158-z

[12] Wekerle C and Wolfe DA. Dating Violence in Mid-Adolescence: Theory, Significance, and Emerging Prevention Initiatives. Clinical Psychology Review, 1999, *19*(4): 435-456. https://doi.org/10.1016/S0272-7358(98)00091-9

[13] Carlson BE. Dating violence: A Research Review and Comparison with Spouse Abuse. Social Casework, 1987, **68**(1): 16-23. https://doi.org/10.1177/104438948706800102

[14] Giordano PC, Soto DA, Manning WD, *et al*. The Characteristics of Romantic Relationships Associated with Teen Dating Violence. Social Science Research, 2010, **39**(6): 863-874. https://doi.org/10.1016/j.ssresearch.2010.03.009

[15] Girlguiding. 2013, Care Verses Control: Healthy Relationships. A Report From Girlguiding, Girlguiding, London, viewed March 3, 2015. http://girlsattitudes.girlguiding.org.uk/pdf/2025_Care_Versus_Control.pdf

[16] Shorey RC, Cornelius TL and Bell KM. A Critical Review of Theoretical Frameworks for Dating Violence: Comparing the Dating and Marital Fields. Aggression and Violent Behavior, 2008, **13**(3): 185-194. https://doi.org/10.1016/j.avb.2008.03.003

[17] Draucker CB and Martsolf DS. The Role of Electronic Communication Technology in Adolescent Dating Violence. Journal of Child and Adolescent Psychiatric Nursing, 2010, **23**(3): 133-142. https://doi.org/10.1111/j.1744-6171.2010.00235.x

[18] Johnson MP. Patriarchal Terrorism and Common Couple Violence: Two Forms of Violence against Women. Journal of Marriage and the Family, 1995, **57**(2): 283-294. https://doi.org/10.2307/353683

[19] Johnson MP. Conflict and Control: Gender Symmetry and Asymmetry in Domestic Violence. Violence Against Women, 2006, **12**(11): 1003-1018. https://doi.org/10.1177/1077801206293328

[20] Johnson MP, 2008, A Typology of Domestic Violence: Intimate Terrorism, Violent Resistance, and Situational Couple Violence, Northeastern University Press, Boston.

[21] Kelly JB and Johnson MP. Differentiation Among Types of Intimate Partner Violence: Research Update and Implications for Interventions. Family Court Review, 2008, **46**(3): 476-499. https://doi.org/10.1111/j.1744-1617.2008.00215.x

[22] Pence E and Paymar M, 1993, Education Groups for Men who Batter: The Duluth Model, Springer, New York. https://doi.org/10.1891/9780826179913

[23] Johnson MP and Leone JM. The Differential Effects of Intimate Terrorism and Situational Couple Violence: Findings From the National Violence Against Women Survey. Journal of Family Issues, 2005, **26**(3): 322-349. https://doi.org/10.1177/0192513X04270345

[24] Leone JM, Johnson MP and Cohan CL. Victim Help Seeking: Differences Between Intimate Terrorism and Situational Couple Violence. Family Relations, 2007, **56**(5): 427-439. https://doi.org/10.1111/j.1741-3729.2007.00471.x

[25] Zweig JM, Yahner J, Dank M, *et al*. Can Johnson's Typology of Adult Partner Violence Apply to Teen Dating Violence. Journal of Marriage and Family, 2014, **76**(4): 808-825. https://doi.org/10.1111/jomf.12121

[26] Messinger A, Frye DA, Rickert VI, *et al*. Extending Johnson's Intimate Partner Violence Typology: Lessons from an Adolescent Sample. Violence Against Women, 2014, **20**(8): 948-971.
https://doi.org/10.1177/1077801214546907

[27] Foshee VA, Bauman KE, Linder F, *et al*. Typologies of Adolescent Dating Violence: Identifying Typologies of Adolescent Dating Violence Perpetration. Journal of Interpersonal Violence, 2007 **22**(5): 498-519.
https://doi.org/10.1177/0886260506298829

[28] Langhinrichsen-Rohling J, McCullars A and Misra TA. Motivations for Men and Women's Intimate Partner Violence Perpetration: A Comprehensive Review. Partner Abuse, 2012, **3**(4): 429-468.
https://doi.org/10.1891/1946-6560.3.4.429

[29] O'Keefe M. Predictors of Dating Violence Among High School Students. Journal of Interpersonal Violence, 1997, **12**(4): 546-568.
https://doi.org/10.1177/088626097012004005

[30] Jackson SM, Cram F and Seymour FW. Violence and Sexual Coercion in High School Students' Dating Relationships. Journal of Family Violence, 2000, **15**(1): 23-36.
https://doi.org/10.1023/A:1007545302987

[31] Muoz-Rivas MJ, Graa JL, O'Leary KD, *et al*. Aggression in Adolescent Dating Relationships: Prevalence, Justification, and Health Consequences. Journal of Adolescent Health, 2007, **40**(4): 298-304.
https://doi.org/10.1016/j.jadohealth.2006.11.137

[32] Fernndez-Fuertes A and Fuertes A. Physical and Psychological Aggression in Dating Relationships of Spanish Adolescents: Motives and Consequences. Child Abuse and Neglect, 2010, **34**(3): 183-191.
https://doi.org/10.1016/j.chiabu.2010.01.002

[33] Stonard K, Bowen E, Walker K, *et al*. "They'll Always Find a Way to Get to You": Technology Use in Adolescent Romantic Relationships and Its Role in Dating Violence and Abuse. Journal of Interpersonal Violence, 2017, **32**(14): 2083-2117.
https://doi.org/10.1177/0886260515590787

[34] Draucker CB, Martsolf D, Stephenson P, *et al*. Aggressive Events in Adolescent Dating Violence. Issues in Mental Health Nursing, 2010, **31**(9): 599-610.
https://doi.org/10.3109/01612841003793056

[35] Draucker CB, Martsolf DS, Stephenson P, *et al*. Types of Aggressive Relationships in Adolescent Dating Violence. Journal of Aggression, Maltreatment and Trauma, 2012, **21**(5): 516-539.
https://doi.org/10.1080/10926771.2012.678467

[36] Bossarte RM, Simon TR and Swahn MH. Clustering of Adolescent Dating Violence, Peer Violence, and Suicidal Behavior. Journal of Interpersonal Violence, 2008, **23**(6): 815-833.
https://doi.org/10.1177/0886260507313950

[37] O'Leary KD, Smith Slep AM, Avery-Leaf S, *et al*. Gender Differences in Dating Aggression Among Multiethnic High School Students. Journal of Adolescent Health, 2008, **42**(5): 473-479.
https://doi.org/10.1016/j.jadohealth.2007.09.012

[38] Zweig JM, Dank M, Yahner J, *et al*. The Rate of Cyber Dating Abuse Among Teens and How it Relates to Other Forms of Teen Dating Violence. Journal of Youth and Adolescence, 2013, **42**(7): 1063-1077.
https://doi.org/10.1007/s10964-013-9922-8

[39] Gray HM and Foshee V. Adolescent Dating Violence: Differences Between One-Sided and Mutually Violent Profiles. Journal of Interpersonal Violence, 1997, **12**(1): 126-141.
https://doi.org/10.1177/088626097012001008

[40] Wekerle C and Wolfe DA. The Contribution of a History of Child Maltreatment and Adolescent Insecure Attachment Style to Adolescent Dating Violence. Development and Psychopathology, 1998, (3): 571-586, cited in Wekerle C and Wolfe D A. Dating Violence in Mid-Adolescence: Theory, Significance, and Emerging Prevention Initiatives. Clinical Psychology Review, 1999, **19**(4): 435-456.
https://doi.org/10.1016/S0272-7358(98)00091-9

[41] Lewis SF and Fremouw W. Dating Violence: A Critical Review of the Literature. Clinical Psychology Review, 2001, **21**(1): 105-127.
https://doi.org/10.1016/S0272-7358(99)00042-2

[42] Simon TR, Miller S, Gorman-Smith D, *et al*. Physical Dating Violence Norms and Behavior Among Sixth-Grade Students from four U.S. Sites. Journal of Early Adolescence, 2010, **30**(3): 395-409.
https://doi.org/10.1177/0272431609333301

[43] Baker CK and Carreo PK. Understanding the Role of Technology in Adolescent Dating and Dating Violence. Journal of Child and Family Studies, 2016, **25**(1): 308-320.
https://doi.org/10.1007/s10826-015-0196-5

[44] Lucero JL, Weisz AN, Smith-Darden J, *et al*. Exploring Gender Differences: Socially Interactive Technology Use/Abuse Among Dating Teens. Affilia, 2014, **29**(4): 478-491.
https://doi.org/10.1177/0886109914522627

[45] Ward T and Beech A. An Integrated Theory of Sexual Offending. Aggression and Violent Behaviour, 2006, **11**(1): 44-63.
https://doi.org/10.1016/j.avb.2005.05.002

[46] Ward T and Hudson SM. The Construction and Development of Theory in the Sexual Offending Area: A Meta-Theoretical Framework. Sexual Abuse: A Journal of Research and Treatment, 1998, **10**(1): 47-63, cited in Ward T and Beech A. An Integrated Theory of Sexual Offending. Aggression and Violent Behaviour, 2006, **11**(1): 44-63.
https://doi.org/10.1016/j.avb.2005.05.002

[47] Hooker CA, 1987, A Realistic Theory of Science, State University of New York, Albany, New York, cited in Ward T and Beech A. An Integrated Theory of Sexual Offending. Aggression and Violent Behaviour, 2006, **11**(1): 44-63.
https://doi.org/10.1016/j.avb.2005.05.002

[48] Newton-Smith W, 2002, A Companion to the Philosophy of Science, Blackwell, Oxford, cited in Ward T and Beech A. An Integrated Theory of Sexual Offending. Aggression and Violent Behaviour, 2006, **11**(1): 44-63.
https://doi.org/10.1016/j.avb.2005.05.002

[49] Smetana JG, Campione-Barr N and Metzger A. Adolescent Development in Interpersonal and Societal Contexts. Annual Review of Psychology, 2006, **57**(1): 255-84.
https://doi.org/10.1146/annurev.psych.57.102904.190124

[50] Dick RN, McCauley HL, Jones KA, *et al*. Cyber Dating Abuse Among Teens Using School-Based Health Centers. Pediatrics, 2014, **134**(6): 1560-1567. https://doi.org/10.1542/peds.2014-0537

[51] Epstein-Ngo QM, Roche JS, Walton MA, *et al*. Technology-Delivered Dating Aggression: Risk and Promotive Factors and Patterns of Associations Across Violence Types Among High-Risk Youth. Violence and Gender, 2014, **1**(3): 131-133. https://doi.org/10.1089/vio.2014.0018

[52] Straus MA. Measuring Intrafamily Conflict and Violence: The Conflict Tactics (CT) Scales. Journal of Marriage and Family, 1979, **41**(1): 75-88. https://doi.org/10.2307/351733

[53] Connolly J, Friedlander L, Pepler D, *et al*. The Ecology of Adolescent Dating Aggression: Attitudes, Relationships, Media Use, and Socio-Demographic Factors. Journal of Aggression, Maltreatment and Trauma, 2010, **19**(5): 469-491. https://doi.org/10.1080/10926771.2010.495028

[54] Bronfenbrenner U. Contexts of Child Rearing: Problems and Prospects, American Psychologist, 1979, **34**(10): 844-850. https://doi.org/10.1037//0003-066X.34.10.844

[55] Bronfenbrenner U, 1994, Ecological Models of Human Development, in International Encyclopaedia of Education, volume 3, 2nd edn, Elsevier, Oxford, 1643-1647.

[56] Dutton DG, 1995, The Domestic Assault of Women: Psychological and Criminal Justice Perspectives, UBC Press, Vancouver.

[57] Bowen E and Walker K, 2015, The Psychology of Violence in Adolescent Romantic Relationships, Palgrave Macmillan, Basingstoke, Hampshire. https://doi.org/10.1057/9781137321404

[58] White JW. A Gendered Approach to Adolescent Dating Violence: Conceptual and Methodological Issues. Psychology of Women Quarterly, 2009, **33**(1): 1-15. https://doi.org/10.1111/j.1471-6402.2008.01467.x

[59] Bandura A, 1971, Social Learning Theory, General Learning Press, New York.

[60] Bandura A, 1973, Aggression: A Social Learning Analysis, Prentice-Hall, Oxford, England. https://doi.org/10.2307/1227918

[61] Bandura A, 1977, Social Learning Theory, Prentice-Hall, Englewood Cliffs, NJ.

[62] Akers RL, 1998, Social Learning and Social Structure: A General Theory of Crime and Deviance, Northeastern University Press, Boston.

[63] Hindelang MJ, Gottfredson M R and Garofalo J, 1978, Victims of Personal Crime: An Empirical Foundation for a Theory of Personal Victimization, Ballinger, Cambridge, MA.

[64] Buss DM and Duntley JD. The Evolution of Intimate Partner Violence. Aggression and Violent Behavior, 2011, **16**(5): 411-419. https://doi.org/10.1016/j.avb.2011.04.015

[65] Rhule-Louie DM and McMahon RJ. Problem Behavior and Romantic Relationships: Assortative Mating, Behavior Contagion, and Desistance. Clinical Child and Family Psychology Review, 2007, **10**(1): 53-100. https://doi.org/10.1007/s10567-006-0016-y

[66] Clark VA, 2013, Intimate Partner Violence Among Adolescents: Causes and Correlates, LFB Scholarly Publishing LLC, El Paso.

[67] Thibaut JW and Kelly HH, 1959, The Social Psychology of Groups, Wiley, New York.

[68] Arriaga XB and Foshee VA. Adolescent Dating Violence: Do Adolescents Follow in Their Friends', or Their Parents', Footsteps?. Journal of Interpersonal Violence, 2004, **19**(2): 162-184. https://doi.org/10.1177/0886260503260247

[69] Ellis WE, Chung-Hall J and Dumas TM. The Role of Peer Group Aggression in Predicting Adolescent Dating Violence and Relationship Quality. Journal of Youth and Adolescence, 2013, **42**(4): 487-499. https://doi.org/10.1007/s10964-012-9797-0

[70] Foshee VA, Benefield TS, McNaughton-Reyes HL, *et al*. The Peer Context and the Development of the Perpetration of Adolescent Dating Violence. Journal of Youth and Adolescence, 2013, **42**(4): 471-486. https://doi.org/10.1007/s10964-013-9915-7

[71] Foshee VA, McNaughton-Reyes HL and Ennett ST. Examination of Sex and Race Differences in Longitudinal Predictors of the Initiation of Adolescent Dating Violence Perpetration. Journal of Aggression, Maltreatment & Trauma, 2010, **19**(5): 492-516. https://doi.org/10.1080/10926771.2010.495032

[72] Foshee VA, Linder GF, MacDougall JE, *et al*. Gender Differences in the Longitudinal Predictors of Adolescent Dating Violence. Preventive Medicine, 2001, **32**(2): 128-141. https://doi.org/10.1006/pmed.2000.0793

[73] Schnurr MP and Lohman BJ. How Much Does School Matter? An Examination of Adolescent Dating Violence Perpetration. Journal of Youth Adolescence, 2008, **37**(3): 266-283. https://doi.org/10.1007/s10964-007-9246-7

[74] Schnurr MP and Lohman BJ. The Impact of Collective Efficacy on Risks for Adolescents' Perpetration of Dating Violence. Journal of Youth Adolescence, 2013, **42**(4): 518-535. https://doi.org/10.1007/s10964-013-9909-5

[75] Foshee VA, Benefield TS, Ennett ST, *et al*. Longitudinal Predictors of Serious Physical and Sexual Dating Violence Victimization During Adolescence. Preventive Medicine, 2004, **39**(5): 1007-1016. https://doi.org/10.1016/j.ypmed.2004.04.014

[76] Hipwell AE, Stepp SD, Xiong S, *et al*. Parental Punishment and Peer Victimization as Developmental Precursors to Physical Dating Violence Involvement Among Girls. Journal of Research on Adolescence, 2014, **24**(1): 65-79. https://doi.org/10.1111/jora.12016

[77] Dobash RE and Dobash RP, 1979, Violence Against Wives: A Case Against Patriarchy, Free Press, New York.

[78] Dobash RE and Dobash RP, 1992, Women Violence and Social Change, Routledge, London. https://doi.org/10.4324/9780203450734

[79] Stanko EA, 2002, Ordinary Experiences, in Criminology: A Reader, ed. by Jewkes Y and Letherby G, SAGE, London, 251-261.

[80] Walker LEA. Psychology and Violence Against Women. American Psychologist, 1989, **44**(4): 695-702. https://doi.org/10.1037/0003-066X.44.4.695

[81] Yll K and Bograd M, 1990, Feminist Perspectives on Wife Abuse, SAGE, London.
https://doi.org/10.1891/0886-6708.4.1.63

[82] Cutbush S, Ashley OS, Kan ML, *et al*. 2010, Electronic Aggression Among Adolescent Dating Partners: Demographic Correlates and Associations with Other Types of Violence. Poster presented at the American Public Health Association annual meeting, November 6-10. Denver, CO, viewed April 7, 2015.
http://www.rti.org/pubs/apha10_cutbush_poster.pdf

[83] Van Ouytsel J, Torres E, Choi HJ, *et al*. The Associations Between Substance Use, Sexual Behaviors, Bullying, Deviant Behaviors, Health, and Cyber Dating Abuse Perpetration. The Journal of School Nursing, 2017, **33**(2): 116-122.
https://doi.org/10.1177/1059840516683229

[84] Van Ouytsel J, Ponnet K and Walrave M. Cyber Dating Abuse Victimization Among Secondary School Students From a Lifestyle-Routine Activities Theory Perspective. Journal of Interpersonal Violence, 2016, **33**(17): 2767-2776.
https://doi.org/10.1177/0886260516629390

[85] Van Ouytsel J, Ponnet K and Walrave M. Cyber Dating Abuse: Investigating Digital Monitoring Behaviors Among Adolescents From a Social Learning Perspective. Journal of Interpersonal Violence, 2017, 1-22.
https://doi.org/10.1177/0886260517719538

[86] Hinduja S and Patchin JW. 2011, Electronic Dating Violence: A Brief Guide for Educators and Parents. Cyberbullying Research Center, viewed June 6, 2015.
http://www.cyberbullying.us/electronic_dating_violence_fact_sheet.pdf

[87] Richards TN, Branch KA and Ray K. The Impact of Parental and Peer Social Support on Dating Violence Perpetration and Victimization Among Female Adolescents: A Longitudinal Study. Violence and Victims, 2014, **29**(2): 317-331.
https://doi.org/10.1891/0886-6708.VV-D-12-00141R1

[88] Sameroff AJ and Fiese BH, 2000, Transactional Regulation: The Developmental Ecology of Early Intervention, in Handbook of Early Childhood Intervention, 2nd edn, ed. by Shonkoff J P and Meisels S J, University of Cambridge, Cambridge, 135-159, cited in Bowen E and Walker K., 2015, The Psychology of Violence in Adolescent Romantic Relationships, Palgrave Macmillan, Basingstoke, Hampshire.
https://doi.org/10.1017/CBO9780511529320.009

[89] Jeffrey CR, 1990, Criminology: An Interdisciplinary Approach, Prentice Hall, New Jersey.

[90] Coleman C and Norris C, 2000, Introducing Criminology, Willan, Cullompton.

[91] Egeland B, 1993, A History of Abuse is a Major Risk Factor for Abusing the Next Generation, in Current Controversies on Family Violence, ed. by Gelles R J and Loseke D R, SAGE, Newbury Park, California, 197-208.

[92] Bowlby J, 1969, Attachment and Loss: Vol. 1. Attachment, Basic Books, New York.

[93] Bowlby J, 1973, Attachment and Loss: Vol. 2. Separation: Anxiety and Anger, Basic Books, New York.

[94] Bowlby J. The Making and Breaking of Affectional Bonds. I. Aetiology and Psychopathology in the Light of Attachment Theory. An Expanded Version of the Fiftieth Maudsley Lecture, Delivered Before the Royal College of Psychiatrists, 19 November 1976. The British Journal of Psychiatry, 1977, **130**: 201-210.
https://doi.org/10.1192/bjp.130.3.201

[95] Bowlby J, 1979, The Making and Breaking of Affectional Bonds, Tavistock Publications, London.

[96] Bowlby J. Violence in the Family as a Disorder of the Attachment and Caregiving Systems. The American journal of psychoanalysis, 1984, **4**(1): 9-27.
https://doi.org/10.1007/BF01255416

[97] .Walby S, 1990, Theorizing Patriarchy, Blackwell, Oxford.

[98] Walker L E, 1979, The Battered Woman, Harper and Row, New York.

[99] Walker L E, 1984, The Battered Woman Syndrome, Springer, New York.

[100] Straus M A. Sexual Inequality, Cultural Norms, and Wife-Beating. Victimology, 1976, **1**(spring): 5470.

[101] Straus M A. Wife Beating: How Common and Why?. Victimology, 1977, **2**: 443458.

[102] Straus MA, Gelles RJ and Steinmetz SK, 1980, Behind closed doors: Violence in the American family, Doubleday, Anchor Press, Garden City, NJ.

[103] Corvo K and deLara E. Towards an Integrated Theory of Relational Violence: Is Bullying a Risk Factor for Domestic Violence?. Aggression and Violent Behavior, 2010, **15**(3): 181-190.
https://doi.org/10.1016/j.avb.2009.12.001

[104] Howe D, 2011, Attachment Theory and Social Relationships, in Social Work: A Reader, ed. by Cree VE, New York, Routledge, 73-81.

[105] Allen JP and Land D, 1999, Attachment in Adolescence, in Handbook of Attachment: Theory, Research, and Clinical Applications, ed. by Cassidy J and Shaver P R, The Guilford Press, New York, 319-335.

[106] Ainsworth MDS, 1967, Infancy in Uganda: Infant Care and the Growth of Love, Johns Hopkins University Press, Baltimore.

[107] Ainsworth MDS and Bell SM. Attachment, Exploration, and Separation: Illustrated by the Behavior of One-Year-Olds in a Strange Situation. Child Development, 1970, **41**(1): 49-67.
https://doi.org/10.2307/1127388

[108] Ainsworth MDS, Blehar M, Waters E, *et al*, 1978, Patterns of Attachment: A Psychological Study of the Strange Situation, Erlbaum, Hillsdale, NJ.
https://doi.org/10.1037/t28248-000

[109] Hamilton CE. Continuity and Discontinuity of Attachment from Infancy through Adolescence. Child Development, 2000, **71**(3): 690-694.
https://doi.org/10.1111/1467-8624.00177

[110] Ammaniti M, van Ijzendoorn M H, Speranza AM, *et al*. Internal working Models of Attachment During Late Childhood and Early Adolescence: An Exploration of Stability and Change. Attachment and Human Development, 2000, **2**(3): 328-346.
https://doi.org/10.1080/14616730010001587

[111] Zimmermann P and Becker-Stoll F. Stability of Attachment Representations During Adolescence: The Influence of Ego-Identity Status. Journal of Adolescence, 2002, **25**(1): 107-124.
https://doi.org/10.1006/jado.2001.0452

[112] Steinberg SJ, Davila J and Fincham F. Adolescent Marital Expectations and Romantic Experiences: Associations with Perceptions About Parental Conflict and Adolescent Attachment Security. Journal of Youth and Adolescence, 2006, **35**(3): 333-348.
https://doi.org/10.1007/s10964-006-9042-9

[113] Dinero RE, Conger RD, Shaver PR, *et al*. Influence of Family of Origin and Adult Romantic Partners on Romantic Attachment Security. Journal of Family Psychology, 2008, **22**(4): 622-632.
https://doi.org/10.1037/a0012506

[114] Hopkins-Burke R, 2005, An Introduction to Criminological Theory, 2nd edn, Willan, Cullompton.

[115] Oakley A, 1972, Sex, Gender, and Society, Temple Smith, London.

[116] Wareham J, Boots DP and Chavez JM. A Test of Social Learning and Intergenerational Transmission Among Batterers. Journal of Criminal Justice, 2009, **37**(2): 163-173.
https://doi.org/10.1016/j.jcrimjus.2009.02.011

[117] Tschann JM, Pasch L A, Flores E, *et al*. Nonviolent Aspects of Interparental Conflict and Dating Violence Among Adolescents. Journal of Family Issues, 2009, **30**(3): 295-319.
https://doi.org/10.1177/0192513X08325010

[118] Stocker CM and Richmond MK. Longitudinal Associations Between Hostility in Adolescents' Family Relationships and Friendships and Hostility in Their Romantic Relationships. Journal of Family Psychology, 2007, **21**(3): 490-497.
https://doi.org/10.1037/0893-3200.21.3.490

[119] Moretti MM, Bartolo T, Craig S, *et al*. Gender and the Transmission of Risk: A Prospective Study of Adolescent Girls Exposed to Maternal Versus Paternal Interparental Violence. Journal of Research on Adolescence, 2014, **24**(1): 80-92.
https://doi.org/10.1111/jora.12065

[120] Temple JR, Shorey RC, Fite P, *et al*. Substance Use as a Longitudinal Predictor of the Perpetration of Teen Dating Violence. Journal of Youth Adolescence, 2013, **42**(4): 596-606.
https://doi.org/10.1007/s10964-012-9877-1

[121] McNaughton-Reyes HL, Foshee VA, Bauer DJ, *et al*. Proximal and Time-Varying Effects of Cigarette, Alcohol, Marijuana and Other Hard Drug Use on Adolescent Dating Aggression. Journal of Adolescence, 2014, **37**(3): 281-289.
https://doi.org/10.1016/j.adolescence.2014.02.002

[122] Wolfe DA, Wekerle C, Scott K, *et al*. Predicting Abuse in Adolescent Dating Relationships Over 1 Year: The Role of Child Maltreatment and Trauma. Journal of Abnormal Psychology, 2004, **113**(3), 406-415.
https://doi.org/10.1037/0021-843X.113.3.406

[123] Dutton DG and Nicholls TL. The Gender Paradigm in Domestic Violence Research and Theory: Part 1-The Conflict of Theory and Data. Aggression and Violent Behavior, 2005, **10**(6): 680-714.
https://doi.org/10.1016/j.avb.2005.02.001

[124] Cleveland HH, Herrera VM and Stuewig J. Abusive Males and Abused Females in Adolescent Relationships: Risk Factor Similarity and Dissimilarity and the Role of Relationship Seriousness. Journal of Family Violence, 2003, **18**(6): 325-339.
https://doi.org/10.1023/A:1026297515314

[125] Lavoie F, Hbert M, Tremblay R, *et al*. History of Family Dysfunction and Perpetration of Dating Violence by Adolescent Boys: A Longitudinal Study. Journal of Adolescent Health, 2002, **30**(5): 375-383.
https://doi.org/10.1016/S1054-139X(02)00347-6

[126] Dutton DG. Patriarchy and Wife Assault: The Ecological Fallacy. Violence and Victims, 1994, **9**(2): 125-140.
https://doi.org/10.1891/0886-6708.9.2.167

[127] Foshee VA. Gender Differences in Adolescent Dating Abuse Prevalence, Types and Injuries. Health Education Research, 1996, **11**(3): 275-286.
https://doi.org/10.1093/her/11.3.275-a

[128] Ringrose J, Gill R, Livingstone S, *et al*. 2012, A Qualitative Study of Children, Young People and 'Sexting': A Report Prepared for the NSPCC, NSPCC, London, viewed March 14, 2015.
http://eprints.lse.ac.uk/44216/1/__Libfile_repository_Content_Livingstone,%20S_A%20qualitative%20study%20of%20children,%20young%20people%20and%20'sexting'%20(LSE%20RO).pdf

[129] Wood M, Barter C, Stanley N, *et al*. Images Across Europe: The Sending and Receiving of Sexual Images and Associations with Interpersonal Violence in Young People's Relationships. Children and Youth Services Review, 2015, **59**: 149-160.
https://doi.org/10.1016/j.childyouth.2015.11.005

[130] Hagan J, Boehnke K and Merkens H. Gender Differences in Capitalization Processes and the Delinquency of Siblings in Toronto and Berlin. British Journal of Criminology, 2004, **44**(5): 659-676.
https://doi.org/10.1093/bjc/azh039

[131] Connell RW, 1987, Gender and Power: Society, the Person and Sexual Politics, Polity, Cambridge.

[132] Allen JP, Porter M, McFarland C, *et al*. The Relation of Attachment Security to Adolescents' Paternal and Peer Relationships, Depression, and Externalizing Behavior. Child Development, 2007, **78**(4): 1222-1239.
https://doi.org/10.1111/j.1467-8624.2007.01062.x

[133] Brown LS and Wright J. Attachment Theory in Adolescence and its Relevance to Developmental Psychopathology. Clinical Psychology and Psychotherapy, 2001, **8**(1): 15-3.
https://doi.org/10.1002/cpp.274

[134] Crittenden PM, 2000, Introduction, in The Organization of Attachment Relationships: Maturation, Culture, and Context, ed. by Crittenden P M and Claussen A H, Cambridge University Press, Cambridge, 1-10.

[135] Hazan C and Shaver P. Romantic Love Conceptualised as an Attachment Process. Journal of Personality and Social Psychology, 1987, **52**(3): 511-524.
https://doi.org/10.1037/0022-3514.52.3.511

[136] Hazan C and Shaver PR. Attachment as an Organisational Framework for Research on Close Relationships. Psychological Inquiry, 1994, **5**(1): 1-22.
https://doi.org/10.1207/s15327965pli0501_1

[137] Doumas DM, Pearson CL, Elgin JE, *et al*. Adult Attachment as a Risk Factor for Intimate Partner Violence: The "Mispairing" of Partners' Attachment Styles. Journal of Interpersonal Violence, 2008, **23**(5): 616-634. https://doi.org/10.1177/0886260507313526

[138] Bolen RM. Validity of Attachment Theory. Trauma Violence Abuse, 2000, **1**(2): 128-153. https://doi.org/10.1177/1524838000001002002

[139] Sutherland EH, Cressey DR and Luckenbill DF, 1992, Principles of Criminology, 11th edn, General Hall, New York.

[140] Connolly J, Pepler D, Craig W, *et al*. Dating Experience of Bullies in Early Adolescence. Child Maltreatment, 2000, **5**(4): 299-310. https://doi.org/10.1177/1077559500005004002

[141] Fredland NM. Sexual Bullying: Addressing the Gap Between Bullying and Dating Violence. Advances in Nursing Science, 2008, **31**(2): 95-105. https://doi.org/10.1097/01.ANS.0000319560.76384.8a

[142] Espelage DL and Holt MK. Dating Violence and Sexual Harassment Across the Bully-Victim Continuum Among Middle and High School Students. Journal Youth Adolescence, 2007, **36**(6): 799-811. https://doi.org/10.1007/s10964-006-9109-7

[143] Ozer EJ, Tschann JM, Pasch LA, *et al*. Violence Perpetration Across Peer and Partner Relationships: Co-occurrence and Longitudinal Patterns Among Adolescents. Journal of Adolescent Health, 2004, **34**(1): 64-71. https://doi.org/10.1016/S1054-139X(03)00274-X

[144] Renner LM and Whitney SD. Risk Factors for Unidirectional and Bidirectional Intimate Partner Violence Among Young Adults. Child Abuse and Neglect, 2012, **36**(1): 40-52. https://doi.org/10.1016/j.chiabu.2011.07.007

[145] Espelage DL, Low SK, Anderson C, *et al*. 2014, Bullying, Sexual, and Dating Violence Trajectories From Early to Late Adolescence. US Department of Justice, viewed June 6, 2015. https://www.ncjrs.gov/pdffiles1/nij/grants/246830.pdf

[146] McNaughton-Reyes H L and Foshee V A. Sexual Dating Aggression Across Grades 8 Through 12: Timing and Predictors of Onset. Journal of Youth Adolescence, 2013, **42**(4): 581-595. https://doi.org/10.1007/s10964-012-9864-6

[147] Makin-Byrd K, Bierman K L and the Conduct Problems Prevention Research Group. Individual and Family Predictors of the Perpetration of Dating Violence and Victimization in Late Adolescence. Journal of Youth and Adolescence, 2013, **42**(4): 536-550. https://doi.org/10.1007/s10964-012-9810-7

[148] Peskin MF, Markham CM, Ross S, *et al*. Prevalence and Correlates of the Perpetration of Cyber Dating Abuse among Early Adolescents. Journal of Youth and Adolescence, 2017, **46**(2): 358-375. https://doi.org/10.1007/s10964-016-0568-1

[149] Murnen SK, Wright C and Kaluzny G. If "Boys will be Boys," Then Girls will be Victims? A Meta-Analytic Review of the Research that Relates Masculine Ideology to Sexual Aggression. Sex Roles, 2002, **46**(11-12): 359-375. https://doi.org/10.1023/A:1020488928736

[150] Zweig JM, Lachman P, Yahner J, *et al*. Correlates of Cyber Dating Abuse Among Teens. Journal of Youth Adolescence, 2014, **43**(8): 1306-1321. https://doi.org/10.1007/s10964-013-0047-x

[151] Follingstad DR, Bradley RG, Helff CM, *et al*. A Model for Predicting Dating Violence: Anxious Attachment, Angry Temperament, and Need for Relationship Control. Violence and Victims, 2002, **17**(1): 35-47. https://doi.org/10.1891/vivi.17.1.35.33639

[152] Creasey G and Hesson-McInnis M. Affective Responses, Cognitive Appraisals, and Conflict Tactics in Late Adolescent Romantic Relationships: Associations With Attachment Orientations. Journal of Counseling Psychology, 2001, **48**(1): 85-96. https://doi.org/10.1037/0022-0167.48.1.85

[153] Ulloa EC, Martinez-Arango N and Hokoda A. Attachment Anxiety, Depressive Symptoms, and Adolescent Dating Violence Perpetration: A Longitudinal Mediation Analysis. Journal of Aggression, Maltreatment and Trauma, 2014, **23**(6): 652-669. https://doi.org/10.1080/10926771.2014.920452

[154] O'Leary KD and Smith Slep AM. A Dyadic Longitudinal Model of Adolescent Dating Aggression. Journal of Clinical Child and Adolescent Psychology, 2003, **32**(3): 314-327. https://doi.org/10.1207/S15374424JCCP3203_01

[155] McCloskey LA and Lichter EL. The Contribution of Marital Violence to Adolescent Aggression Across Different Relationships. Journal of Interpersonal Violence, 2003, **18**(4): 390-412. https://doi.org/10.1177/0886260503251179

[156] Jessor SL and Jessor R. Transition from Virginity to Non-virginity Among Youth: A Social-Psychological Study Over Time. Developmental Psychology, 1975, **11**(4): 473-84, cited in Foshee VA, Linder GF, MacDougall JE, *et al*. Gender Differences in the Longitudinal Predictors of Adolescent Dating Violence. Preventive Medicine, 2001, **32**(2): 128-141. https://doi.org/10.1037/h0076664

[157] Raiford JL, Wingood GM and Diclemente RJ. Prevalence, Incidence, and Predictors of Dating Violence: A Longitudinal Study of African American Female Adolescents. Journal of Women's Health, 2007, **16**(6): 822-832. https://doi.org/10.1089/jwh.2006.0002

[158] Compas BE, Connor-Smith JK, Saltzman H, *et al*. Coping With Stress During Childhood and Adolescence: Problems, Progress, and Potential in Theory and Research. Psychological Bulletin, 2001, **127**(1): 87-12. https://doi.org/10.1037/0033-2909.127.1.87

[159] Próspero M. Young Adolescent Boys and Dating Violence: The Beginning of Patriarchal Terrorism?. Affilia, 2007, **22**(3): 271-280. https://doi.org/10.1177/0886109907302259

[160] Foshee VA, McNaughton-Reyes HL, Vivolo-Kantor AM, *et al*. Bullying as a Longitudinal Predictor of Adolescent Dating Violence. Journal of Adolescent Health, 2014, **55**(3): 439-444. https://doi.org/10.1016/j.jadohealth.2014.03.004

[161] Hird MJ. An Empirical Study of Adolescent Dating Aggression in the U.K.. Journal of Adolescence, 2000, **23**(1): 69-78. https://doi.org/10.1006/jado.1999.0292

[162] Lichter EL and McCloskey LA. The Effects of Childhood Exposure to Marital Violence on Adolescent Gender-Role Beliefs and Dating Violence. Psychology of Women Quarterly, 2004, **28**(4): 344-357.
https://doi.org/10.1111/j.1471-6402.2004.00151.x

[163] Connell RW and Messerschmidt JW. Hegemonic Masculinity: Rethinking the Concept. Gender Society, 2005, **19**(6): 829-859.
https://doi.org/10.1177/0891243205278639

[164] Mueller V, Jouriles EN, McDonald R, *et al*. Adolescent Beliefs About the Acceptability of Dating Violence: Does Violent Behavior Change Them?. Journal of Interpersonal Violence, 2013, **28**(2): 436-450.
https://doi.org/10.1177/0886260512454716

[165] Sulak TN, Saxon TF and Fearon D. Applying the Theory of Reasoned Action to Domestic Violence Reporting Behavior: The Role of Sex and Victimization. Journal of Family Violence, 2014, **29**(2): 165-173.
https://doi.org/10.1007/s10896-013-9569-y

[166] Connell RW, 1995, Masculinities, Polity, Cambridge.

[167] Messerschmidt JW, 1993, Masculinities and Crime: Critique and Reconceptualization of Theory, Rowan and Littlefield, Lanham, MD.

[168] Connell RW, 2005, Masculinities, 2nd ed, Polity, Cambridge.

[169] Felson RB, 2002, Violence and Gender Reexamined, American Psychological Association, Washington, DC.
https://doi.org/10.1037/10470-000

[170] Hunnicutt G. Varieties of Patriarchy and Violence Against Women: Resurrecting "Patriarchy" as a Theoretical Tool. Violence Against Women, 2009, 15(5): 553-573.
https://doi.org/10.1177/1077801208331246

[171] Damant D, Lapierre S, Kouraga A, *et al*. Taking Child Abuse and Mothering Into Account: Intersectional Feminism as an Alternative for the Study of Domestic Violence. Affilia: Journal of Women and Social Work, 2008, **23**(2): 123-133.
https://doi.org/10.1177/0886109908314321

[172] George J and Stith SM. An Updated Feminist View of Intimate Partner Violence. Family Process, 2014, 53(2): 179-193.
https://doi.org/10.1111/famp.12073

[173] Cutbush S, Williams J, Miller S, *et al*. 2012, Electronic Dating Aggression Among Middle School Students: Demographic Correlates and Associations with Other Types of Violence. Poster presented at the American Public Health Association annual meeting, October 27-31. San Francisco, CA, viewed April 7, 2015.
http://www.rti.org/pubs/apha12_cutbush_poster.pdf

[174] Korchmaros JD, Ybarra ML, Langhinrichsen-Rohling J, *et al*. Perpetration of Teen Dating Violence in a Networked Society. Cyberpsychology, Behavior, and Social Networking, 2013, **16**(8): 561-567.
https://doi.org/10.1089/cyber.2012.0627

[175] Smith PH, White JW and Holland LJ. A Longitudinal Perspective on Dating Violence Among Adolescent and College-Age Women. American Journal of Public Health, 2003, **93**(7): 1104-1109.
https://doi.org/10.2105/AJPH.93.7.1104

[176] Friedlander LJ, Connolly JA, Pepler DJ, *et al*. Extensiveness and Persistence of Aggressive Media Exposure as Longitudinal Risk Factors for Teen Dating Violence. Psychology of Violence, 2013, 3(4): 310-322.
https://doi.org/10.1037/a0032983

[177] Manganello J A. Teens, Dating Violence, and Media Use: A Review of the Literature and Conceptual Model for Future Research. Trauma, Violence and Abuse, 2008, **9**(1): 3-18.
https://doi.org/10.1177/1524838007309804

[178] Cohen LD and Felson M. Social Change and Crime Rate Trends: A Routine Activity Approach. American Sociological Review, 1979, **44**(4): 588-608.
https://doi.org/10.2307/2094589

[179] Gottfredson M and Hirschi T, 1990, A General Theory of Crime, Stanford University Press, Stanford, CA.

[180] Ngo FT and Paternoster R. Cybercrime Victimization: An Examination of Individual and Situational Level Factors. International Journal of Cyber Criminology, 2011, **5**(1): 773-793.

[181] Mann C J. Observational Research Methods. Research Design II: Cohort, Cross Sectional, and Case-Control Studies. Emergency Medicine Journal, 2003, **20**(1): 54-60.
https://doi.org/10.1136/emj.20.1.54

[182] Sellers CS, Cochran JK and Winfree LT, 2003, Social Learning Theory and Courtship Violence: An Empirical Test, in Social Learning Theory and the Explanation of Crime, ed. by Akers R L and Jensen G F, Transaction Publishers, New Jersey, 109-128.
https://doi.org/10.4324/9781315129594-5

[183] Levine DT and Edwards CS. Attachment, Adolescent Girls and Technology: A New Marriage of Ideas and Implications for Youth Work Practice. Youth and Policy, 2014, **112**: 74-94.

[184] Mir Llinares F, 2011, La oportunidad criminal en el ciberespacio. Aplicacin y desarrollo de la teora de las actividades cotidianas para la prevencin del cibercrimen. Revista Electrnica de Ciencia Penal y Criminologa, num. 13-07, cited in Agustina J R. Understanding Cyber Victimization: Digital Architectures and the Disinhibition Effect. International Journal of Cyber Criminology, 2015, **9**(1): 35-54.

Table 4. Summary of adolescent dating violence and abuse risk factors and studies

Table 4-1 Summary of adolescent dating violence and abuse risk factors and studies

Risk factor area	Subcategory	Victimisation	Instigation	Involvement
Peer influence	Friends with experience of dating violence	Arriaga and Foshee (2004)	Arriaga and Foshee (2004)	
	Peer group relational aggression	Ellis et al. (2013)	Ellis et al. (2013)	
	Friends who use dating violence		Foshee et al. (2013)	
	Number of friends using dating violence		Foshee et al. (2010)	
	Friends who are victims of dating violence		Foshee et al. (2001)	
	Having a friend who has been the victim of dating violence	Foshee et al. (2004)		
	Early involvement with anti-social peers		Schnurr and Lohman (2013), Schnurr and Lohman (2008)	
	Increase in involvement with antisocial peers		Schnurr and Lohman (2008)	
	Being victimised by peers	Brooks-Russell et al. (2013)		
	Escalation in peer victimisation			Hipwell et al. (2014)
Family influence	Exposure to parental intimate partner violence	Tschann et al. (2009)	Tschann et al. (2009)	
	Hostility (psychological abuse) in parent marriage		Stocker and Richmond (2007)	
	Mother's experience of domestic violence		Schnurr and Lohman (2013)	
	Exposure to mother-to-father intimate partner violence		Moretti et al. (2014), Temple et al. (2013)	
	Family conflict		McNaughton-Reyes et al. (2014)	
	Experience more family violence from parents		Richards et al. (2014)	
	Harsh parenting practices			Lavoie et al. (2002)
	Initial harsh punishment from parents			Hipwell et al. (2014)
	Increasing harsh punishment from parents			Hipwell et al. (2014)
	Harsh physical punishment from mothers		Schnurr and Lohman (2008)	
	Been hit by an adult with the intent to harm	Foshee et al. (2004)		
	Low levels of hostility with father during early adolescence		Schnurr and Lohman (2008)	
	Mother-child hostility		Schnurr and Lohman (2008)	
	Relationship with mother	Cleveland et al. (2003)		
	Low parental monitoring		Schnurr and Lohman (2013)	Lavoie et al. (2002)
	Trauma-related symptoms		Wolfe et al. (2004)	
	Trauma-related anger		Wolfe et al. (2004)	
	Living in stably two-parent home		Schnurr and Lohman (2008)	

Table 5. Summary of adolescent dating violence and abuse risk factors and studies

Table 4-2 Summary of adolescent dating violence and abuse risk factors and studies

Risk factor area	Subcategory	Victimisation	Instigation	Involvement
Personal aggression	Delinquency	Foshee et al. (2004)	Espelage et al. (2014)	Lavoie et al. (2002)
	Fighting		Cleveland et al. (2003)	
	Been in a physical fight with a peer			
	Aggression against peers		Foshee et al. (2010), McNaughton-Reyes et al. (2014)	
	Peer aggression and rape myth acceptance		McNaughton-Reyes and Foshee (2013)	
	Physical bullying		Foshee et al. (2014)	
	Bully perpetration		Espelage et al. (2014)	
	Antisocial behaviour			
	Hostility in friendships		Stocker and Richmond (2007)	
	Sibling aggression		Espelage et al. (2014)	
	Early adolescent aggressive-oppositional problems at home	Makin-Byrd et al. (2013)	Makin-Byrd et al. (2013)	Makin-Byrd et al. (2013)
	Adolescent aggressive-oppositional problems at school	Makin-Byrd et al. (2013)		
Psychological adjustment & personal competencies	Anxiety	Brooks-Russell et al. (2013)	Foshee, McNaughton-, and Ennett (2010)	Connelly et al. (2010)
	Attachment anxiety		Ulloa et al. (2014)	
	High sensitivity to interpersonal rejection		Moretti et al. (2014)	
	Depression / Being depressed	Cleveland et al. (2003), Foshee et al. (2004)	Foshee et al. (2010), McCloskey and Lichter (2003)	
	Depressive symptoms		Schnurr and Lohman (2013), Ulloa et al. (2014)	
	Low self-esteem	Foshee et al. (2004)		
	Externalising behaviour problems		Schnurr and Lohman (2008), Schnurr and Lohman (2013)	
	Anger		Foshee et al. (2010)	
	Relationship conflict (hostility, conflict)			
Substance use	Alcohol use	Brooks-Russell et al. (2013)	Foshee et al. (2001), Temple et al. (2013)	
	Total drinking behaviours	Cleveland et al. (2003)		
	Frequency of drinking behaviours	Cleveland et al. (2003)		
	Heavy alcohol use		McNaughton-Reyes et al. (2014)	
	Drug use	Raiford et al. (2007)		
	Marijuana use		Foshee et al. (2010), McNaughton-Reyes et al. (2014)	
	Hard drug use		McNaughton-Reyes et al. (2014), Temple et al. (2013)	
	Drug and alcohol use		Schnurr and Lohman (2013), Schnurr and Lohman (2008)	

Table 6. Summary of adolescent dating violence and abuse risk factors and studies

Table 4-3 Summary of adolescent dating violence and abuse risk factors and studies

Risk factor area	Subcategory	Victimisation	Instigation	Involvement
Attitudes	Attitudes accepting of dating violence		Foshee et al. (2001)	Connelly et al. (2010)
	Acceptance of male-to-female dating violence		Lichter and McCloskey (2004)	
	Traditional beliefs about the family	Lichter and McCloskey (2004)	Lichter and McCloskey (2004)	
	Gendered dating scripts	Lichter and McCloskey (2004)	Lichter and McCloskey (2004)	
	Attitudes accepting of aggression			
	Less understanding of healthy relationships	Raiford et al. (2007)		
Past dating violence	Prior adolescent dating violence victimisation	Tschann et al. (2009)	McNaughton-Reyes et al. (2014), Tschann et al. (2009)	
	Prior adolescent dating violence instigation		Temple et al. (2013)	
	Prior individual relational aggression		Ellis et al. (2013)	
	Own use of physical aggression (risk for partner's use)		O'leary and Smith Slep (2003)	
	Partner's use of physical aggression (risk for own use)		O'leary and Smith Slep (2003)	
	Physical dating aggression and rape myth acceptance		McNaughton-Reyes and Foshee (2013)	
Educational / intelligence factors	Academic difficulties		Schnurr and Lohman (2013)	
	Grade Point Average	Cleveland et al. (2003)	Cleveland et al. (2003)	
	School attachment (low levels of)	Cleveland et al. (2003)		
	Verbal IQ		Cleveland et al. (2003)	
Media exposure	Aggressive media usage	Friedlander et al. (2013)	Friedlander et al. (2013)	Connolly et al. (2010)
	Viewed X-rated movies	Raiford et al. (2007)		
Sexual attitudes and behaviours	Sex desirability		Cleveland et al. (2003)	
	Relative timing of sex and love		Cleveland et al. (2003)	
	Past sexual behaviour (No. of sexual partners)		Cleveland et al. (2003)	
Social status	High social status		Foshee et al. (2013)	
Demographics	Being of a race other than white	Richards et al. (2014)	Foshee et al. (2001), Richards et al. (2014)	

Table 7. Summary of adolescent dating violence and abuse protective factors and studies

Protective factor area	Subcategory	Victimisation	Instigation
Peer influence	High quality friendships		Foshee et al. (2013)
	Friends with pro-social beliefs		Foshee et al. (2013)
	Increased levels of social support from friends	Richards, Branch, and Ray (2014)	Richards, Branch, and Ray (2014)
Psychological adjustment & personal competencies	Higher empathy		McCloskey and Lichter (2003)
Educational factors	Higher average grades	Richards, Branch, and Ray (2014)	Richards, Branch, and Ray (2014)
Substance use	Marijuana use	-	Foshee, McNaughton-Reyes, and Ennett (2010)

Table 8. Summary of technology-assisted adolescent dating violence and abuse risk correlates and studies

Table 6-1 Summary of technology-assisted adolescent dating violence and abuse risk correlates and studies

Risk factor area	Subcategory	Victimisation	Instigation	Involvement
Other dating violence experience	Physical ADVA			Epstein-Ngo et al. (2014)
	Physical ADVA victimisation	Cutbush et al. (2010), Zweig et al. (2013), Zweig et al. (2014)	Cutbush et al. (2010)	Dick et al. (2014)
	Physical ADVA instigation	Cutbush et al. (2012)	Cutbush et al. (2010), Cutbush et al. (2012), Zweig et al. (2013)	
	Psychological ADVA victimisation	Cutbush et al. (2010), Cutbush et al. (2012), Zweig et al. (2013), Zweig et al. (2014)	Cutbush et al. (2010)	
	Psychological ADVA instigation	Cutbush et al. (2010), Cutbush et al. (2012)	Cutbush et al. (2010), Cutbush et al. (2012), Korchmaros et al. (2013), Zweig et al. (2013)	
	Sexual coercion victimisation	Zweig et al. (2013), Zweig et al. (2014)	Zweig et al. (2013)	
	Sexual coercion instigation			
	Sexual ADVA victimisation	Cutbush et al. (2010)	Cutbush et al. (2010)	Dick et al. (2014)
	Sexual ADVA instigation		Cutbush et al. (2010)	
	Being a victim of offline ADVA	Hinduja and Patchin (2011)		
	Being an instigator of offline ADVA		Hinduja and Patchin (2011)	
	Stalking victimisation	Cutbush et al. (2010)	Cutbush et al. (2010)	
	Stalking instigation		Cutbush et al. (2010)	
Other sexual aggression experience	Non-partner sexual assault victimisation			Dick et al. (2014)
	Sexual harassment victimisation	Cutbush et al. (2012)		
	Sexual harassment instigation		Cutbush et al. (2012)	
Peer influence	Peer aggression	Cutbush et al. (2010)	Cutbush et al. (2010)	
	Being a victim of cyberbullying	Hinduja and Patchin (2011), Zweig et al. (2013)		
	Bullying victimization		Van Ouytsel et al. (2017)	
	Perceived social norms of peers		Van Ouytsel, Ponnet, and Walrave (2017)	
Personal aggression	Committing a greater variety of deviant behaviours	Zweig et al. (2014)		
	Being an instigator of cyberbullying		Zweig et al. (2013)	
	Bullying perpetration		Van Ouytsel et al. (2017); Peskin et al. (2017)	

Table 9. Summary of technology-assisted adolescent dating violence and abuse risk correlates and studies

Table 6-2 Summary of technology-assisted adolescent dating violence and abuse risk correlates and studies

Risk factor area	Subcategory	Victimisation	Instigation	Involvement
Psychological adjustment and personal competencies	Having higher levels of depressive symptoms	Zweig et al. (2014)		
	Having higher levels of anger/hostility	Zweig et al. (2014)		
Sexual health and behaviours	Contraceptive non-use	Zweig et al. (2014)		Dick et al. (2014)
	Reproductive coercion			Dick et al. (2014)
	Having had sexual activity in ones lifetime			
	Having had sexual intercourse		Van Ouytsel et al. (2017)	
	Using alcohol or drugs before having sex		Van Ouytsel et al. (2017)	
Family influence	Having observed intrusive controlling behaviors by the father		Van Ouytsel, Ponnet, and Walrave (2017)	
Physical health	Poor physical health		Van Ouytsel et al. (2017)	
Substance use	Substance use (alcohol and cigarettes and the misuse of over-the-counter and prescription medications)		Van Ouytsel et al. (2017)	
Attitude	Endorsement of gender stereotypes		Van Ouytsel, Ponnet, and Walrave (2017)	
	Norms for violence for boys against girls		Peskin et al. (2017)	
Environment	Community violence exposure			Epstein-Ngo et al. (2014)
Relational	Length of the romantic relationship	Van Ouytsel, Ponnet, and Walrave (2016)		
	Having a current boyfriend/girlfriend		Peskin et al. (2017)	
Online risk behaviour	Sharing passwords with a significant other	Hinduja and Patchin (2011)		
	Engagement in online risk behaviour	Van Ouytsel, Ponnet, and Walrave (2016)		
	Engagement in sexting with the romantic partner	Van Ouytsel, Ponnet, and Walrave (2016)		
	Amount of social networking site use	Van Ouytsel, Ponnet, and Walrave (2016)		
Demographics	Being female	Cutbush et al. (2010), Zweig et al. (2014)	Van Ouytsel, Ponnet, and Walrave (2017)	
	Being older		Van Ouytsel, Ponnet, and Walrave (2017)	

Table 10. Ecological systems

System	Definition
Macrosystem	• Broadest level of analysis[d] • Overarching sociocultural influences including belief systems, attitudes, bodies of knowledge[c] • Factors that maintain gender inequality, gender role norms and pro-violence societal norms[d]
Exosystem	• Represents the linkages between the family and the broader culture and/or integration within a community[b] • Socio-demographic factors and family structure[c]
Microsystem	• A pattern of activities, social roles and interpersonal relations[a] • Risk factors that arise from the characteristics of families and individuals[b] • Includes the attributes, behaviours and attitudes of adolescents, the family and peer group[c]
Ontogenetic system (individual)	• Risk/protective factors that arise from within the individual as a function of physiology, cognitions, learned behavioural responses or predispositions and emotional responses[b]

Note: [a] Bronfenbrenner (1994); [b] Dutton (1995); [c] Connolly *et al*. (2010); [d] Bowen and Walker (2015) [53,55-57]

Table 11. Areas of risk/protector factor in relation to the ecological framework proposed in Table 7

System	Risk/protective factor
Macrosystem	Attitudes; Media Exposure; Educational
Exosystem	Family influence; Demographics; Environment; Social status
Microsystem	Peer Influence; Family Influence; Personal aggression; Psychological Adjustment and Personal Competencies; Attitudes; Past/Other ADVA; Sexual Attitudes, Behaviours and Health; Other Sexual Aggression; Relational factors; Online Risk Behaviours
Ontogenetic system (individual)	Psychological Adjustment and Personal Competencies; Substance Use; Intelligence

Table 12. Summary and Methods of ADVA Risk Factor Studies

Table 9-1 Summary and Methods of ADVA Risk Factor Studies

Authors	Sample	Design	Instrument	Type of Violence	Victimisation Risk	Perpetration Risk	Involvement Risk
Arriaga & Foshee (2004)	US N = 526 12-17 years	Longitudinal	Self-report questionnaire 2 waves, 6 months	Physical violence	Friends with experience of dating violence (female only)	Friends with experience of dating violence (female only)	-
Brooks-Russell, Foshee, & Ennett (2013)	US N = 2,566 8-12th grade	Longitudinal	Self-report questionnaire 4 waves, 2 years	Physical violence	Alcohol use (females only) Anxiety (females only) Being victimised by peers	-	-
Cleveland, Herrera, & Stuewig (2003)	US N = 603[f] 16-17[#] years	Longitudinal	Interview 2 waves, 1 year	Physical violence	Grade Point Average (female only) Relationship with mother (female only) School attachment (low levels of female only) Total drinking behaviors (female only) Frequency of drinking (female only) Depression (female only)	Grade Point Average (male only) High verbal IQ (male only) Sex desirability (male only) Relative timing of sex and love (male only) Number of sexual partners (male only) Fighting (male only)	-
Connolly et al. (2010)	Canada N = 627 14-19 years	Longitudinal	Self-report questionnaire 2 waves, 1 year	Physical violence	-	-	Attitudes accepting of aggression Relationship conflict (hostility, conflict) Aggressive media use (mediated by violence tolerant attitudes)
Ellis, Chung-Hall & Dumas (2013)	US N = 598 14-17 years	Longitudinal	Self-report questionnaire 2 waves, 6 months	Verbal, physical, sexual, threatening and relational aggression	Peer group relational aggression	Peer group relational aggression Individual relational aggression	-
Espelage et al. (2014)	US N = 1,162 10-20 years	Longitudinal	Self-report questionnaire 7 waves, 5 years	Physical, verbal emotional abuse, and sexual coercion	-	Bully perpetration Sibling aggression (male only) Delinquency (male only)	-
Foshee et al. (2014)	US N = 1,154 6-8th grade	Longitudinal	Self-report questionnaire 2 waves, 2 years	Physical violence	-	Physical bullying	-
Foshee et al. (2013)	US N = 3,412 7-12th grade	Longitudinal	Self-report questionnaire 5 waves, 2.5 years	Physical violence	-	Friends who use dating violence High in social status (female only)	-
Foshee, McNaughton-Reyes, & Ennett (2010)	US N = 1,666 8-10th grade	Longitudinal	Self-report questionnaire 2 waves, 6 months	Physical violence	-	Depression (female only) Marijuana use (female only) Aggression against peers (female only) Anxiety (white youth) Anger (black youth) Number of friends using dating violence	-

Table 13. Summary and Methods of ADVA Risk Factor Studies

Table 9-2 Summary and Methods of ADVA Risk Factor Studies

Authors	Sample	Design	Instrument	Type of Violence	Victimisation Risk	Perpetration Risk	Involvement Risk
Foshee et al. (2004)	US N = 1,291 8-9th grade	Longitudinal	Self-report questionnaire 4-5 waves, 4-5 years	Serious physical (P) and sexual (S) violence	Been hit by an adult with the intention of harm (P) Low self-esteem (P - male only) Been in a physical fight with a peer (P - male only) Having a friend who has been the victim of dating violence (S - female only) Being depressed (S - female only)	-	-
Foshee *et al.* (2001)	US N = 1,186 8-9th grade	Longitudinal	Self-report questionnaire 2 waves, 1.5 years	Physical and sexual violence	-	Friends who are victims of dating violence (female only) Alcohol use (female only) Attitudes accepting of dating violence (male only) Being of a race other than white (female only)	-
Friedlander et al. (2013)	Canada N = 484 14-17 years	Longitudinal	Self-report questionnaire 3 waves, 3 years	Physical violence	Aggressive media usage (mediated by violence-tolerant attitudes)	Aggressive media usage (mediated by violence-tolerant attitudes)	-
Hipwell et al. (2014)	US N = 475[a] 10-17 years	Longitudinal	Interview 8 waves, 8 years	Physical violence	-	-	Initial and increasing harsh punishment (female only) Escalation in peer victimisation (female only)
Lavoie et al. (2002)	US N = 717[b] 10-18 years	Longitudinal	Self-report questionnaire 6 waves, 8 years	Physical and psychological violence	-	-	Harsh parenting practices (male only) Low parental monitoring (male only) Antisocial behaviour (i.e. delinquency and substance abuse) (male only)
Lichter & McCloskey (2004)	US N = 208 13-21 years	Longitudinal prospective	Interview 2 waves, 7-9 years	Physical and sexual violence	Traditional beliefs about the family Gendered dating scripts	Traditional beliefs about the family Gendered dating scripts Acceptance of male-to-female dating violence	-
Makin-Byrd et al. (2013)	US N = 401 7-12th grade	Prospective Longitudinal	Interview 12 waves, 12 years	Physical violence	Early adolescent aggressive-oppositional problems at home Adolescent aggressive-oppositional problems at school	Early adolescent aggressive-oppositional problems at home	Early adolescent aggressive-oppositional problems at home
McCloskey & Lichter (2003)	US N = 296 10-16 years	Longitudinal	Interviews 3 waves, 8 years	Physical violence	-	Depression; following exposure to marital violence and adolescent aggression toward peers (female only)	-

Table 14. Summary and Methods of ADVA Risk Factor Studies

Table 9-3 Summary and Methods of ADVA Risk Factor Studies

Authors	Sample	Design	Instrument	Type of Violence	Victimisation Risk	Perpetration Risk	Involvement Risk
Moretti et al. (2014)	US N = 139[c] 13-24 years	Prospective Longitudinal	Self-report questionnaire 2 waves, 5 years	Physical and psychological violence	-	Exposure to maternal intimate partner violence (female only) High sensitivity to interpersonal rejection (female only)	-
O'leary and Smith Slep (2003)	US N = 206 16.5 mean age	Longitudinal	Self-report questionnaire 2 waves, 3 months approx.	Physical and verbal dating violence	-	Own use of physical aggression predicted partner's use of physical aggression Partner's use of physical aggression predicted own use of physical aggression	-
Raiford et al. (2007)	US N = 522[d] 14-18 years	Longitudinal	Self-report questionnaire and interview 2 waves, 1 years	Physical and verbal violence	Less understanding of healthy relationships (female only) Drug use (female only) Viewed X-rated movies (female only)	-	-
McNaughton-Reyes et al. (2014)	US N = 2455 8-12th grade	Longitudinal	Self-report questionnaire 4 waves, 2 years	Physical violence	-	Marijuana use (female only) Hard drug use (male only) Heavy alcohol use Family conflict Peer aggression Dating abuse victimisation	-
McNaughton-Reyes and Foshee (2013)	US N = 459[b] 8/9th-11/12th grade	Longitudinal	6 waves, 4 years	Sexual dating violence	-	Physical dating aggression (and rape myth acceptance) Peer aggression and rape myth acceptance	-
Richards, Branch, & Ray (2014)	US N = 346[a] 7-12th grade	Longitudinal	In-home interview 2 waves, 1 year	Physical (P) and emotional (E) violence	Being of a race other than White (P) (female only)	Experience more family violence from parents (P) (female only) Being of a race other than White (P) (female only)	-
Schnurr & Lohman (2013)	US N = 765[e] 10-20 years	Longitudinal	Interview 3 waves, 6 years	Physical violence	-	Drug and alcohol use Low parental monitoring Academic difficulties Involvement with antisocial peers Mother's experience of domestic violence (male and Hispanic female only) Externalizing behaviors (African-American females only) Depressive symptoms (male only)	-

Table 15. Summary and Methods of ADVA Risk Factor Studies

Table 9-4 Summary and Methods of ADVA Risk Factor Studies

Authors	Sample	Design	Instrument	Type of Violence	Victimisation Risk	Perpetration Risk	Involvement Risk
Schnurr & Lohman (2008)	US N = 765[e] 10-20 years	Longitudinal	Interview 3 waves, 6 years	Physical violence	-	Early involvement with antisocial peers Increase in involvement with antisocial peers Early drug and alcohol use (female only; Hispanic male only) Low levels of hostility with father during early adolescence (female only) Externalizing behaviour problems (marginally) (female only) Living in stably two-parent home (African-American females) Mother-child hostility (Hispanic females only) Harsh physical punishment from mothers (Hispanic females only)	-
Stocker & Richmond (2007)	US N = 110 14-19 years	Longitudinal	Self-report questionnaire 2 waves, 3 years	Hostility (Psychological violence)	-	Hostility in parents marriages Hostility in friendships	-
Temple et al. (2013)	US N = 734 9-11[th] grade	Longitudinal	Self-report questionnaire 2 waves, 1 year	Physical violence	-	Alcohol use Hard drug use Exposure to (mother-to-father) interparental violence Past dating violence perpetration	-
Tschann et al. (2009)	US N = 150 16-21 years	Longitudinal	Interviews 3 waves, 1 year	Physical and verbal violence	Interparental violence Dating violence victimisation at 6 months	Interparental violence Dating violence victimisation at 6 months	-
Ulloa, Martinez-Arango and Hokoda (2014)	US N = 140 13-18 years	Longitudinal	Self-report questionnaire 2 waves, 10 months	Physical dating violence	-	Attachment anxiety Depressive symptoms	-
Wolfe et al. (2004)	Canada N = 1317 14-19 years	Longitudinal	Self-report questionnaire 2 waves, 1 year	Physical, emotional, and threatening violence	-	Trauma-related symptoms (predicted emotional abuse for males) Trauma-related anger (predicted dating violence for females)	-

Note: a Female only sample; b Male only sample; c Females drawn from a juvenile detention centre; d African American female adolescents residing in high-risk social environments; e Primarily African-American and Hispanic low-income sample; f 603 opposite sex couples; g Age 16-17 years is based on mean age at wave 2 of 17 years

Table 16. Summary and Methods of ADVA Protective Factor Studies

Authors	Sample	Design	Instrument	Type of Violence	Victimisation Protector	Perpetration Protector
Foshee, McNaughton-Reyes, & Ennett (2010)	US N = 1666 8-10th grade	Longitudinal	Self-report questionnaire 2 waves, 6 months	Physical violence	-	Marijuana use (males only)
Foshee et al. (2013)	US N = 3412 7-12th grade	Longitudinal	Self-report questionnaire 5 waves, 2.5 years	Physical violence	-	High quality friendships Friends with pro-social beliefs (female only)
McCloskey and Lichter (2003)	US N = 296 10-16 years	Longitudinal	Interview 3 waves, 8 years	Physical violence	-	Higher empathy
Richards, Branch and Ray (2014)	US N = 346[a] 7-12th grade	Longitudinal	In-home interview 2 waves, 1 year	Physical (P) and emotional (E) violence	Increased levels of social support from friends (E) (female only) Higher average grades (P) (female only)	Increased levels of social support from friends (P and E) (female only) Higher average grades (P) (female only)

Note: [a] Female only sample

Table 17. Summary and Methods for TAADVA Risk Correlate Studies

Table 11-1 Summary and Methods for TAADVA Risk Correlate Studies

Authors	Sample	Design	Instrument	Victimisation Risk	Perpetration Risk	Involvement Risk
Cutbush et al. (2010)	US N = 4282 Mean age 14.3 years	Cross-sectional	Self-report questionnaire (Picard 2007) Lifespan	Female sex Psychological abuse perpetration or victimisation Physical dating violence victimisation Sexual dating violence victimisation Stalking victimisation Peer aggression	Psychological dating abuse perpetration or victimisation Physical dating violence perpetration or victimisation Sexual dating violence perpetration or victimisation Stalking perpetration or victimisation Peer aggression	-
Cutbush et al. (2012)	US N = 1430 Mean age 12.3 years	Cross-sectional	Self-report questionnaire (Picard 2007) Lifespan	Psychological dating abuse perpetration or victimisation Physical dating violence perpetration Sexual harassment victimisation	Psychological dating abuse perpetration Physical dating violence perpetration Sexual harassment perpetration	-
Dick et al. (2014)	US N = 1008[a] 14-19 years	Cross-sectional	Self-report questionnaire Previous 3 months	-	-	Physical dating violence victimisation Sexual dating violence victimisation Unwanted sexual assault Contraceptive nonuse Reproductive coercion
Epstein-Ngo et al. (2014)	US N = 210[b] 14-20 years	Cross-sectional	Self-report questionnaire Previous 2 months	-	-	Physical dating violence Community violence exposure
Hinduja and Patchin (2011)	US N = 4400 11-18 years	Cross-sectional	Self-report questionnaire Lifespan	Being a victim of offline dating violence Being a victim of cyberbullying Sharing passwords with a significant other	Being a perpetrator of offline dating violence	-
Korchmaros et al. (2013)	US N = 615 14-19 years	Cross-sectional	Self-report questionnaire Previous 12 months	-	Perpetrating psychological dating aggression	-
Van Ouytsel et al. (2017)	US N = 705 Mean age 17.96 years	Cross-sectional	Self-report questionnaire (Picard 2007) Previous 6 months	-	Having had sexual intercourse Using alcohol or drugs before having sex Poor physical health Substance use (alcohol and cigarettes and the misuse of over-the-counter and prescription medications) Bullying victimization or perpetration	-
Van Ouytsel, Ponnet, and Walrave (2016)	Belgium N = 466 16-22 years	Cross-sectional	Self-report questionnaire Previous 6 months	Engagement in online risk behaviour Length of the romantic relationship Engagement in sexting with the romantic partner Amount of social networking site use	-	-

Table 18. Summary and Methods for TAADVA Risk Correlate Studies

Table 11-2 Summary and Methods for TAADVA Risk Correlate Studies

Authors	Sample	Design	Instrument	Victimisation Risk	Perpetration Risk	Involvement Risk
Van Ouytsel, Ponnet, and Walrave (2017)	Belgium N = 466 16-22 years	Cross-sectional	Self-report questionnaire Previous	-	Being female Being older Perceived social norms of peers Endorsement of gender stereotypes Having observed intrusive controlling behaviors by the father	-
Peskin et al. (2017)	US N = 424 11-12 years	Cross-sectional	Self-report questionnaire (Picard 2007) Lifespan	-	Norms for violence for boys against girls, Having a current boyfriend/girlfriend, and Participation in bullying perpetration	-
Zweig et al. (2013)	US N = 3745 12-18 years	Cross-sectional	Self-report questionnaire Previous 12 months	Sexual coercion Physical dating violence Psychological dating abuse Being a victim of cyberbullying	Sexual coercion Physical dating violence Psychological dating abuse Being an instigator of cyberbullying	-
Zweig et al. (2014a)	US N = 3745 12-18 years	Cross-sectional	Self-report questionnaire Previous 12 months	Being female Committing a greater variety of deviant behaviours Having had sexual activity in ones lifetime Having higher levels of depressive symptoms Having higher levels of anger/hostility Physical dating violence victimisation Psychological dating violence victimisation Sexual coercion victimisation	-	-

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CASE STUDY

Internal business communication through social media: A case study of a university specialized in business education

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Abstract: In present era, usage of social media is very common. This study used interview questionnaire to explore employees' behaviors and beliefs towards usage of social media and further its role and importance as an internal communication tool in Zhejiang Gongshang University, Hangzhou, China. Ten employees of university from different departments were interviewed about their views regarding different factors related to use of social media and further its role as an internal communication tool. It was found that the most frequently used social media were WeChat and QQ. ZJGSU University employees believed that social media were convenient, instant medium for communication (sharing pictures and videos) and they may enhance flow and effectiveness of internal communication in ZJGSU. The study found that although employees generally have a good perception about social media but there is need for improvement for either adopting a proper enterprise social media or proper utilization of WeChat for effective internal communication. As the sample size in this study was small so it limits generalization and external validity of the findings, yet its focus on the different factors and benefits of using social media integrates to its originality with the thought that social media may help enhance the flow and effectiveness of internal communication in an organization.

Keywords: social media, internal communication, social response

1 Introduction

With modernization, the way of communication is moving to new direction due to the new social media platforms. It was observed in a study that social media can afford users ability to easily "consume (read, listen, watch, download, search, buy), create (personalize, aggregate, contribute), share (publish, upload) facilitate (tag, recommend) and communicate (send, post comments, chat, rate)"[1] .

Last few years have seen a rapid growth in the use of social media. Yearly survey of the McKinsey Global Institute (2013)[2] regarding embracing and using social technology within enterprises revealed that organizations' usage of Web 2.0 Technologies like live video calling and sharing, blogs and micro-blogging and social networking during 2007 and 2013 has been increased from 50 percent to 68 percent.

Above literature clarifies the need and importance of communication and it also highlights that use of social media in organizations is increasing day by day particularly for internal communication. Internal communication in general is defined as a flow of communication among people within the organization. The platforms provided by social medias make employees communicate within the organization regardless of time and space and hierarchy. A study[3] in this regard has given a broader definition of such social media which make workers to: (1) convey or share messages to anyone and anytime in the organization; (2) adding, editing and organizing texts and files linked with them or others; (3) see the conversations, files and messages sent, modified and organized by any member of the organization regardless of time and space.

Social media like Youtube, Facebook, Twitter, Myspace and LinkedIn are extensively used in higher education for internal as well as external communication. Studies have explained that lecturers more frequently use Youtube and Facebook among the various social medias[4] . Exploring the use of social media and further its role and importance for internal communication in university like Zhejiang Gongshang University (ZJGSU) may be useful.

The main objective of this study is to explore the usage of social media in Zhejiang Gongshang University and further its role and importance for internal communica-

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tion. Different sub-objectives are as under: (1) To find out the different factors related to usage of social media; (2) To identify the benefits of using social media; (3) To find out how employees of ZJGSU use social media for internal communication; (4) To find out if ZJGSU employees believe that social media usage can help enhancing flow and effectiveness of internal communication

As more and more people are using social media in their daily lives, it is important to look at these tools as an internal communication tool as well. As researchers of a study believes that people will demand the more the same benefits and features inside of the organization which they experience from the use of social media in their lives outside of the organization[5] .

It is really important for this study as researchers will look for the university employees' perception about usage of social media and further its role and importance for internal communication. With all the benefits of social media tools available for communication, researchers are particularly interested in how employees can use these tools effectively to enhance internal communication with other employees within the organizations.

2 Review of literature

For the understanding on as how the usage of social media tools in the organization in the form of internal communication work, review of existing literature is necessary. Two theories are available related to development of purpose of my study.

First one is social information processing theory of computer mediated communication developed by Joseph Welters. This theory compares computer-mediated communication with face-to-face communication. Face to face communication is important for developing an interpersonal relationship and computer mediated communication also has power to establish this relation but only difference is that it requires more time to develop interpersonal relationship as compared to face to face communication[6] .

Above theory focuses on the need of bonding and desire of connection with others always or still present at that time when communicating through computer-mediated communication like face to face communication[6] . This theory is important to my study to provide the base because every social media requires some tools or computer mediated communication to understand.

Second, communicative action theory developed by Habermas (1984) can also help better understand present study[7] . Habermas (1984) communicative action theory is "the inter-action of at least two subjects capable of speech and action who establish interpersonal relations (whether by verbal or by extra-verbal means)". Habermas's theory of communicative action is to get conclusion by developing the mutual understanding and discussion between two or more people[8] .

More suitability of this theory is that it is more focused on the employees' communication and helps to know perception of the employees towards social media as a tool of internal communication. The reason is the assumption that social media usage as form of tool may enhance the communication at the workplace and it is also the need of employees in current era of technological and revolutionary world.

2.1 Social media at workplace

First social networking site, sixdegrees.com, was started in 1997 by Boyd & Ellison.[9] There are huge number of accessible social media sites and tools for users in which some of them are very famous social media sites like Facebook, WhatsApp, Twitter, Skype, LinkedIn, Bebo, Friendster, *etc*.[10] The basic purpose of these sites is to enhance the communication by providing different features and platform without physical presence of users.

The study of Prescient Digital media indicates the interest of social media tool in an organization and as per result 90 percent organizations are using, Blogs, Wikis, Status Updates, Comments and ranking as social media tool. As per, now a day's social media is used to integrate and cooperate in an organization between the business experts as a form of communication and also involves in professional decision making process. Most reliable information attained by experts from online networks because of social media interaction.

Steve Crescenzo (2009)[11] describes in his article that social medias have remarkable impact on commutation efficiency in an organization. Social media and advancement of technologies reduce the barriers of communication between one and another. You can communicate and get the information from any of person of the world without waiting their return call or their physical presence.

2.2 Importance of social media in internal business communication

Usage of social media is not subject to only chatting and general communication. Internal communication is very important for smooth functioning of any organization whether you talk about the communication between management and employees or just between the co-workers of your organization. The effective communication among employees increases the chances of suc-

cess and performance of the organization as well[12] . At the same time, prior to launching any move of such communication for the effectiveness, corporate business aspects are required to be considered. For instance, the cultural dimensions of corporate social responsibility are of paramount importance for crafting business strategies.[13]

Gray and Robertson (2005)[14] define effective communication as "how well we all successfully connect with and engage others every day, taking them on our personal journey of ideas". If a company is using the social media as a form of internal communication it can enjoy the remarkable benefits as most of the users of social media are aware of its features and tools, so there is no need to spend more time to learn and create something new in it. One can also make the group and create online forum of co-workers and share and get up to date information without need of their physical presence or arranging conference meeting.[5]

Specifically, it is found that the success of high performing organizations is "due to the increased productivity generated by effectively communicating business goals to employees, strategically linking rewards to job performance, and making employees feel connected to their organization and its goals and values".[12] The next important need is the implementation of internal e-commerce which is experienced in service delivery firms of China[15] , but has not yet witnessed in education sector. Behavior is learnt through education. The morale, behavior and commitment of the employee move towards positive direction, when the performance of the companies is compared who have strong effective communication system as compared to low profile companies.

3 Methodology and data analysis

This study was completed in 17 days of short time period. Population of the study was employees of ZJGSU of China based in Hangzhou city. Sample of ten employees of ZJGSU was selected by convenience sampling due to short time period. A self-administered open ended interview questionnaire comprising of ten questions was used for collection of information and data particularly related to usage of social media and its role and importance for internal communication in ZJGSU.

Data was collected from ten employees of universities working in different departments by a personal interview. Responses of the interviewees were noted and recorded. Interviews were converted into transcripts and were further coded into ten themes according to interview questionnaire. Responses were further calculated percentage wise and interpreted accordingly.[17]

4 Results

Interview questionnaire was comprised of 10 questions as already mentioned in Methodology section. 60% of the respondents were females whereas 40% of the respondents were males. 50% of the respondents were in the age bracket of 20-30 years, 40% of the respondents were in the age bracket of 35-50 years and 10% of respondents were in the age bracket of 55-60 years. Reponses as recorded and noted are described below as per interview questionnaire.

(1) Use of social media: 90% of the respondents are using WeChat and QQ social medias for communication purposes whereas 10 percent are using emailing and phone with a very little use of QQ. No such respondent was found who abandoned the use of social media.

(2) Social media tools help enhance communication: 90% of the respondents were agreed that social media tools help enhance communication with others and 10% were not sure about it.

(3) Factors influencing to adopt social media: 80% of the respondents replied that convenience is the main influencing factor for adopting social media. Remaining related it with different factors like wide scope, group chat, easy access, functions of tool and to be familiar with technology.

(4) Factors influencing to continue to use the social media: 50% of the respondents were of the view that they will continue to use the social media because of convenience factor. 30% of the respondents mentioned easy communication and source of information as factors, 20% of the respondents referred sharing of life activities and experiences as a factor whereas 10% considered habit as a factor influencing to continue to use the social media.

(5) Functions of social media employees usually or normally use: 100% of the respondents use texting (chatting, chit chat or messaging) function of social media in normal routine. 30% of the respondents also reported sharing pictures and videos function, 20% of the respondents mentioned audio and video calling function as their normal usage in daily life.

(6) Benefit of use of social media: 40% of the respondents reported linkage with others (family, friends and co-workers) as an important benefit of using social media. 30% of the respondents mentioned convenience, 20% of the respondents mentioned instant communication as benefits of usage of social media.

(7) Method of internal communication in ZJGSU: 70% of the respondents are using WeChat as a method of

internal communication in ZJGSU. 50% of the respondents are also using email and 40% of the respondents are using phone for communicating with other employees in ZJGSU.

(8)Employees' satisfaction with the flow of internal communication in ZJGSU: 60% of the respondents were found to be averagely satisfied with the flow of internal communication in ZJGSU. 20% of the respondents were very satisfied whereas 10% of the respondents were not satisfied at all with flow of internal communication in ZJGSU.

(9) Social media tools may help enhance internal communication in ZJGSU: 90% of the respondents were agreed with the role of social media tool for enhancing internal communication in ZJGSU whereas 10% of the respondents were not sure about it.

(10) Social media tools may help enhance effectiveness of internal communication in ZJGSU: 80% of the respondents were agreed that social media tools will surely help enhance effectiveness of internal communication whereas 20% of the respondents were not sure about it.

5 Discussion

Present study was very helpful for understanding the role of social media in the daily activities of employees of ZJGSU with further focus on the communication within the organization. It provided an overview of not only about social media use in general but also about the important role of social media for internal communication in an organization. Organizations are focusing not only on internal communication but also on usage of technology with the advancement in robotics and sociotechnical solutions.[18]

With the importance and consideration of corporate social responsibility in businesses[19] , I came up with interesting findings about social media. WeChat can be said as the main social media which the university employees mostly use for interacting with each other. Although, employees of ZJGSU have a good general perception about the social medias and their uses but researchers believe that most of the participants were not eager and motivated for using the social media as a proper tool for internal communication in ZJGSU.

Studies have already described different benefits of transparency in businesses[18] and, usage of social media for internal communication like several features to interact and sharing of information and updates with no physical movement may also enhance transparency in the businesses. Further social media leads to effective communication system and ultimately generating increased productivity.[5, 12] Most of the respondents are somewhat satisfied with the flow of internal communication in ZJGSU. However, researchers observed that some of the participants were not sure that social media may help enhance the flow and effectiveness of internal communication in ZJGSU even after they were briefed about the importance and uses of an enterprise social media.

6 Limitations, future research direction and conclusion

There are few limitations of this study. Seventeen days of short time period was the main limitation of the study. Detailed investigation could be carried out with the availability of more time which may further lead to more knowledge and more information by covering most of the aspects. Study surely may have different findings in case if more number of respondents from ZJGSU were interviewed. Due to small sample size, study lacks generalization and external validity of findings[20] .

Future research may be carried out to find out the development and training needs if any and reasons for lack of motivation and eagerness for using the social media as a proper tool for internal communication in ZJGSU. Same is also necessary due to the reason that some employees doubt that social media may help enhance the flow and effectiveness of internal communication in ZJGSU.

Despite of fact that time period for the study was really very short, study succeeded to find out the different factors and benefits of using social media and further integrating the same with the thought that role of social media is important towards enhancing the flow and effectiveness of internal communication in an organization.

References

[1] Mustafa SE and Hamzah A. Online Social Networking: A New Virtual Playground, 2011. http://www.ipedr.com/vol5/no2/69-H10184.pdf

[2] McKinsey Global Institute, Business and Web 2.0: An Interactive Feature, 2013. http://www.mckinsey.com/insights/business_technology/business_and_web_20_an_interactive_feature

[3] Leonardi PM, Huysman M and Steinfield C. Enterprise Social Media: Definition, History and Prospects for the Study of Social Technologies in Organisations. Journal of Computer-Mediated Communication, 2013, **19**(1): 19. https://doi.org/10.1111/jcc4.12029

[4] Moran M, Seaman J and Tinti-Kane H. Teaching, Learning, and Sharing: How Today's Higher Education Faculry Use Social Media. Babson Survey Research Group, **2011**: 32.

[5] Mitchell J, Ferrabee D and Wright M. How is Your Company or Client Using Social Media for Employee Communication? Communication World, 2008, **25**(5): 17.

[6] Kuchi T. Computer Mediated Communication: Social Interaction and the Internet. Information Society, 2009, **22**(2): 55-56.
https://doi.org/10.1080/01972240500388271

[7] How A. The Theory of Communicative Action. Volume I. Reason and the Rationalization of Society, by Jurgen Habermas. Journal of the British Society for Phenomenology, 2014, **18**(2): 192-194.
https://doi.org/10.1080/00071773.1987.11007808

[8] Deflem M. The Boundaries of Abortion Law: Systems Theory from Parsons to Luhmann and Habermas. Social Forces, 1998, **76**(3): 775-818.
https://doi.org/10.2307/3005694

[9] Boyd DM. Social Network Sites: Definition, history, and scholarship. Journal of Computer-Mediated Communication, 2007, **13**(1): 210-230.
https://doi.org/10.1111/j.1083-6101.2007.00393.x

[10] Social Media Today. 40 Most Popular Social Networking Sites of the World, 2010.
http://socialmediatoday.com/soravjain/195917/40-most-popular-social-networking-sites-world

[11] Crescenzo S. Is the next Alfred Hitchcock in the Cube Down the Hall? Communication World, 2009, **26**(6): 10-11.

[12] Brandon MC. (1995). Employee communication: From Nice Necessity. Communication World, 1995, **12**(3): 20.

[13] Farooq Q, Hao Y and Liu X. (2019). Understanding Corporate Social Responsibility with Cross-Cultural Difference: A Deeper Look at Religiosity. Corporate Social Responsibility and Environmental Management, **2019**: 1-7.
https://doi.org/10.1002/csr.1736

[14] Gray R and Robertson L. Effective Internal Communication Starts. Communication World, 2005, **22**(4) 26-30.

[15] Farooq Q, Fu P, Hao Y, *et al*. A Review of Management and Importance of E-Commerce Implementation in Service Delivery of Private Express Enterprises of China. SAGE Open, 2019.
https://doi.org/10.1177/2158244018824194

[16] Hakim C. Research design: successful designs for social and economic research. Nature, 2000, **4546** :1332-1333.
https://doi.org/10.1038/1781332b0

[17] Blackstone A. Sociology Inquiry Principles: Qualitative and Quantitative Methods (V 10), 2012.
https://2012books.lardbucket.org/books/sociological-inquiry-principles-qualitative-and-quantitative-methods/index.html

[18] Zhang L, Farooq Q, Zhang Y, *et al*. (2019). Fair Value and Mispricing: How Domestic Earnings Transparency of Listed Firms Leads to Global Financial Stability. European Journal of International Management, 2019 (In Press).
https:/doi.org/10.1504/EJIM.2020.10019072

[19] Hao Y, Farooq Q and Zhang Y. Unattended social wants and corporate social responsibility of leading firms: R elationship of intrinsic motivation of volunteering in proposed welfare programs and employee attributes. Corporate Social Responsibility and Environmental Management, 2018, **25**(6): 1029-1038.

[20] Leung L. Validity, reliability, and generalizability in qualitative research. Journal of Family Medicine and Primary Care, 2015, **4**(3): 324-327.
https:/doi.org/10.4103/2249-4863.161306

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