



Influence of Parenting Styles on Behavioural and Emotional Outcomes among University of Ghana Undergraduate Students

Rona Bioh^{1*}, Regina Durowaa², Bernard Kumasenu³ and Cecilia Gyekye⁴

¹*Vine Christian School, Box KD 714, Kanda, Accra, Ghana.*

²*Non-Formal Education Division, Ministry of Education, P. O.Box MD 2032, Kaneshie, Ghana.*

³*Ghana Immigration Service, P.O.Box MD 512, Madina, Accra, Ghana.*

⁴*Department of Psychology, University of Ghana, P.O.Box LG 84, Legon, Ghana.*

Authors' contributions

This work was carried out in collaboration between all authors. Author RB designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors RD and BK managed the analyses of the study. Author CG managed the literature searches. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/AJESS/2018/44322

Editor(s):

(1) Dr. E. Seda Koc, Faculty of Education Classroom Teaching, Hacettepe University, Turkey.

Reviewers:

(1) Jasjit Kaur Delow, Panjab University Chandigarh, India.

(2) Sylvester J. O. Odanga, University of Kabianga, Kenya.

(3) Lucy Macharia, Kiambu Institute of Science and Technology, Kenya.

(4) Ruchi Galundia, Maharana Pratap University of Agriculture & Technology, India.

Complete Peer review History: <http://prh.sdiarticle3.com/review-history/26683>

Original Research Article

Received 22 July 2018
Accepted 02 October 2018
Published 19 October 2018

ABSTRACT

Parents, to a large extent, determine the behavioural and emotional outcomes of their children. This study investigated the influence of parenting styles on behavioural and emotional outcomes (aggression and assertiveness) among University of Ghana undergraduate students. The study also examined gender differences in behavioural and emotional outcomes. One hundred and sixty (160) respondents were selected conveniently from the population to complete the Parenting Styles Inventory, Assertiveness Scale and the Aggressive Behaviour Questionnaire. The multivariate analysis of variance was used in data analysis. The findings indicated that authoritative parents nurtured more assertive and less aggressive students compared with authoritarian and permissive parents. Authoritarian parents also nurtured more aggressive students compared to permissive

*Corresponding author: E-mail: ronabioh1@gmail.com;

parents. There was however no significant difference in assertiveness between students with permissive and those with authoritarian parents. Gender was not a significant predictor of aggression and assertiveness. Generally, this study indicates that parents play a significant role in determining behaviour and emotional outcomes of their children.

Keywords: Parenting styles; behavioural; emotional outcome; authoritative parenting; permissive parenting; authoritarian parenting.

1. INTRODUCTION

Family plays a substantial role in the formation of behavioural and emotional outcomes among children. The early experiences of a child in the family shape their behaviour [1]. Parents direct the path of their children based on acceptable societal standards. In Ghana, more emphasis is placed on parents in the upbringing of their children [2]. However, paucity of research exists on the influence of parenting styles on behavioural and emotional outcomes in Ghana. It is based on this that the present study is conducted to assess how parenting styles influence the emotional and behavioural outcomes of students in Ghana.

Parenting styles involve how parents relate with their children and the behaviours they demonstrate in the presence of their children [3]. Parenting styles pave way for the interaction between the parent and the child. Parenting styles can be classified into three; authoritarian, authoritative and permissive [3]. Authoritarian parenting is characterized by strict rules. Children are expected to follow the rules or face the consequence that is punishment. Permissive parents expect few behavioral outcomes from their children though they do not set rules to control the behaviour of their children [4]. Once the child reach adolescent stage, permissive parents give more room for freedom and show abrupt decreases in monitoring the activities of the children [5]. Authoritative parents on the other hand provide more support to their children, encourage the children to participate in verbal conversation, make the children aware of the reasons behind what they expect from them, and use shaping to reinforce their objectives [4]. The sort of style parents adopt can influence the behavioural and emotional outcomes of their children [6]. In this study, aggression and assertiveness are the behavioural and emotional outcomes considered.

There are many forms of aggression with the most frequent ones ranging from social and verbal aggression to physical and more serious kinds of violence. Examples of aggressive

behaviours include threatening, fighting, rape and gossiping [7]. In early childhood, aggression develops when there is a stress stimulus like parental abuse, wrongful conduct towards children, poor relationship between parents and children [8]. These characteristics of parenting breed aggression in their children later in life [9]. Children whose parents use corporal punishment such as the authoritarian parents are more prone to develop aggressive tendencies [10].

Assertiveness on the other hand is the psychological and behavioural ability to stand for your wish to be treated as you deserve [2]. It involves the expression of opinions, needs, and feelings without ignoring others opinions, needs, and feelings [11]. Assertiveness helps to strengthen healthy interpersonal relationship with others at work, at home, in school, and in the neighborhood [6]. Assertiveness can be explained both verbally and non-verbally. Non-verbal assertiveness includes direct eye contact, body language and facial expressions. Any kind of isolation or withdrawal from the parents and significant others can negatively affect the self confidence and self-esteem of the children [12]. Thus, the different parenting styles play a very important role in determining the level of assertiveness of the children [6].

Subject to the style parents adopt, children would develop different behavioural and emotional outcomes [11]. Authoritarian parents set limits when performing their roles and force their children to obey their rules. These parents offer little demand on self-regulation of the children [13]. These children have the tendency to develop high levels of aggression and low levels of assertiveness, because punishment is the means of showing the child how to obey. There is also little room for children to express their feelings which prevents them from becoming assertive [14]. The isolation and withdrawal attitude of permissive parents negatively affect the assertiveness of the children [13].

An individual's biological disposition also influences their level of self-esteem and aggression [14]. Individual biological disposition

such as being a male or female defines their roles in certain parts of the world such as Ghana [15]. In Ghana and some parts of Africa, men are anticipated to be tough and ambitious whereas women are expected to be tender and submissive. This imposes a limit on the magnitude to which males and females can demonstrate assertive and aggressive behaviours [14].

2. LITERATURE REVIEW

Many studies [14,16,17,18] have indicated a significant impact of parenting styles on aggression. A study conducted by Lokoyi [4] indicated a positive correlation between authoritarian parenting style and aggression, whereas, authoritative and permissive parenting styles had negative relationships with aggressive behaviours among adolescents. No gender difference on aggression emerged among the study sample. A study by Raya et al. [19] also revealed that authoritarian and permissive parenting styles breed aggressiveness in adolescents. However, [20] indicated no correlation between parenting styles and aggression.

Studies have also established relationship between parenting styles and assertiveness. A study conducted by Dagnev and Asrat [21] revealed higher level of assertiveness among children with authoritative parents as opposed to parents using other parenting styles. Another study by Alayi et al. [22] also indicated that the assertiveness of children with authoritative parenting style was higher than those in permissive and authoritarian parenting. The study did not find any significant gender impact on assertiveness. Similarly, [10] found a negative correlation between authoritarian parenting style and assertiveness. Permissive and authoritative parenting styles were found to correlate positively with assertiveness.

Existing studies so far have revealed contradictory findings on the impact of parenting styles on behavioural outcomes. Gender differences in behavioural outcomes have also produced inconsistencies. As such, there is paucity of studies conducted on the effect of parenting styles on behavioural and emotional outcomes in Africa and Ghana to be specific. With differences in parenting styles between African countries and European countries, findings in the European countries cannot be generalized to the Sub-Saharan Africa [11]. On

the basis of this, the present study is conducted to assess the impact of parenting styles on behavioural outcomes such as aggression and assertiveness. The study also investigated gender differences in aggression and assertiveness) using University of Ghana undergraduate students as the population.

Consequently, the researchers hypothesised that students with authoritative parents will be more assertive and less aggressive than students with authoritarian and permissive parents. Again, it was predicted that students with permissive parents will be more assertive and less aggressive than students with authoritarian parents. With regard to gender, the researchers predicted higher levels of aggression and assertiveness among male students compared to female students.

3. METHODS

3.1 Research Design

The researchers adopted the survey research design. Survey captures thoughts and behaviours of people. The specific survey that was utilized by the researchers was the cross-sectional survey design. Cross-sectional survey involves collecting data from among many respondents at a point in time. The cross-sectional survey was used because a large data were collected from among many students at a point in time.

3.2 Population

University of Ghana undergraduate students formed the population for this study. The population has a catholic display of personalities from different parental upbringing. The different parental background of individuals within the population has a greater propensity to influence the development of different behavioural and emotional outcomes.

3.3 Participants

One hundred and sixty (160) respondents were selected for the study using the convenience sampling. The convenience sampling was adopted because only respondents who were available and willing to participate were recruited for the study. Among the respondents of this study, there were equal representation of males ($n=80$) and females ($n=80$). The age of the respondents ranged from 18 to 27 years. Majority

Table 1. Demographic characteristics of the respondents

Demographic	Male (n = 80)	Female (n =80)	Total (n = 160)
Age range			
Below 20 years	17	21	38
20 – 25 years	33	39	72
Above 25 years	30	20	50
Religion			
Christianity	52	56	108
Islamic	28	24	52
Level of study			
Level 100	12	14	26
Level 200	25	17	42
Level 300	20	18	38
Level 400	23	31	54

of the respondents (n=108) were Christians. The respondents were selected from the four undergraduate levels of study, namely: level 100 (n=26), level 200 (n=42), level 300 (n=38) and level 400 (n=54). (See Table 1 for description of the demographic characteristics).

3.4 Measures

Data on parenting styles, assertiveness and aggression were respectively collected using the Parenting Styles Inventory (PSI) [23], the Modified Assertiveness Scale (MAS) [24] and the Aggressive Behaviour Questionnaire (ABQ; 4). The scales used are described below.

The PSI has three subscales, of 5-items each developed to measure the three components of parenting style: authoritarian, authoritative, and permissive. There are five responses to each item of the scale. The responses ranged from “1 (Strongly Disagree)” to “5 (Strongly Agree)”. Each of the three dimensions of the PSI has been found valid and reliable, with a .79 for the authoritarian, .87 for the authoritative and .82 for the permissive [23]. Total scores for each component ranged from 5 to 25. The dimension with the highest score as indicated by the respondents was used as the parenting style adopted by the parents. An item on the PIS is “my parents hardly ever praise me for doing well.”

The Modified Assertiveness Scale (MAS) contains 10 items use to measure the general personal assertiveness of individual between 12 and 45 years. The MAS is measured on a four-point response format ranging from not at all like me (1) to just like me (4) with a reliability coefficient of .82 [24]. Total scores ranging from 0 – 60 was awarded for the MAS with a higher score indicating higher level of assertiveness. An

item on the scale is “when someone steps in front of me in a line, I do not like them get away with it.”

The ABQ is a 10-item self-report scale designed to measure aggression. The response options of the ABQ are anchored on a 4–point response format ranging from strongly disagree (1) to strongly agree (4). The scale has a reliability of .82 [4]. Scores ranging from 10 – 40 was awarded with higher score indicates higher level of aggression. An item on the questionnaire include: “I stare at someone or give a dirty looks or other negative eye contacts with someone.”

3.5 Procedure

The ethicality of this study was first observed through approval of the head of the Psychology Department, University of Ghana before commencing with data collection. The students were contacted in their halls of residence and their lecture halls. The purpose of the study was explained to the students. Their consent was obtained and their level of study was ascertained before administering the questionnaires. Each respondent took approximately 25 minutes to complete the questionnaire.

4. DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1 Data Analysis

The Statistical Package for Social Science was used in analyzing the gathered data from the respondents. Three hypotheses were tested in the study. The differences in assertiveness and aggression between students from authoritative, authoritarian and permissive parenting styles as proposed in hypotheses 1 and 2 were analyzed using the multivariate analysis of variance

(MANOVA) (see Table 2). Where a significant difference was observed, the multiple comparison was used to assess where the differences exist (Table 3). The MANOVA again was used to analyse the differences in scores on assertiveness and aggression between males and females as proposed in hypothesis 3 (see Table 4). The MANOVA was used in analyzing all the hypotheses because the study was interested in discovering the effect of either parenting styles or gender on more than one dependent variable (assertiveness and aggression). The dependent variables (assertiveness and aggression) were measured on an interval scale.

4.2 Results

The summary of the MANOVA results are presented in the Tables 2, 3 and 4.

The results of the study presented on Table 2 indicate a significant impact of parenting styles on aggression ($F_{(2, 157)} = 33.172, p < 0.01$) and assertiveness ($F_{(2, 157)} = 16.326, p < 0.01$). Assessing the multiple comparison results shown on Table 3, the differences in mean scores of aggression between all the three parenting styles were significant ($p < .05$). This means that students with authoritarian parenting had significantly higher levels of aggression ($M=30.80, SD=.69$), followed by students with permissive parenting ($M=25.26, SD=.71$) and then students with authoritative parenting ($M=22.80, SD=5.74$) in that order (see Table 2).

With regard to assertiveness, the multiple comparison results (Table 3) showed that the mean scores on assertiveness of students with authoritative parents ($M=34.54, SD=1.08$) was significantly higher than students with authoritarian parents ($M=28.07, SD=1.02$) and those with permissive parents ($M=26.38, SD=1.04$) ($p < .05$). Thus the first hypothesis that “students with authoritative parents will be more assertive and less aggressive than students with authoritarian and permissive parents” was supported.

However, the difference in assertiveness score shown in Table 3 between students with permissive and authoritarian parents was not significant ($p > .05$). The second hypothesis that “students with permissive parents will be more assertive and less aggressive than students with authoritarian parents” was partially supported.

The findings of the study revealed an insignificant gender difference in aggression ($F_{(1, 158)} = 2.180, p > 0.05$) and assertiveness ($F_{(1, 158)} = 2.682, p > 0.05$). This means that the levels of aggression ($M=27.15, SD=.48$) and assertiveness ($M=30.16, SD=.92$) among males was not significantly different from the levels of aggression ($M=25.71, SD=.69$) and assertiveness ($M=28.45, SD=.93$) (See Table 4) among females. Thus, the third hypothesis (there will be higher levels of aggression and assertiveness among male students than among female students) was not supported.

Table 2. Influence of parenting styles on behavioural and emotional outcomes

	Authoritative Mean (SD)	Authoritarian Mean (SD)	Permissive Mean (SD)	F	Df	p
Aggression	22.80 (.74)	30.80 (.69)	25.26 (.71)	33.172	(2, 157)	.000*
Assertiveness	34.54 (1.08)	28.071 (1.02)	26.38 (1.04)	16.326	(2, 157)	.000*

* $P < 0.01$ level (1-tailed test)

Table 3. Multiple comparisons of parenting styles on behavioural and emotional outcomes

		Aggression			Assertiveness		
		1	2	3	1	2	3
1.	Authoritative	-	-	-	-	-	-
2.	Authoritarian	8.00*	-	-	6.46*	-	-
3.	Permissive	2.45*	5.54*	-	8.15*	1.68	-

* $P < 0.05$ level (1-tailed test)

Table 4. Gender differences in behavioural and emotional outcomes

	Males Mean (SD)	Females Mean (SD)	F	Df	p
Aggression	27.15 (.48)	25.71 (.69)	2.180	(1, 158)	.142
Assertiveness	30.60 (.92)	28.45 (.93)	2.682	(1, 158)	.103

4.3 Discussion

The results of the study indicate that students with authoritative parents have higher level of assertiveness and lower level of aggression than students with authoritarian and permissive parents. This confirmed the prediction that students with authoritative parents will be more assertive and less aggressive than students with authoritarian and permissive parents. Students with authoritarian parents also had higher level of aggression than students with permissive parents. However, the difference in assertiveness between students with permissive and authoritarian parents was not significant. The second prediction that students with permissive parents will be more assertive and less aggressive than students with authoritarian parents was partially supported.

This higher level of assertiveness among participants with authoritative parenting styles compared to permissive and authoritarian parenting styles corroborates with earlier studies that indicated that participants of authoritative parents nurture assertiveness in their children compared to authoritarian and permissive parents [22,21,25]. Similarly, [10] observed higher level of assertiveness among adolescents of authoritative parents compared to those with authoritarian and permissive parents. As explained by Baumrind [3], authoritative parents are more democratic. The disciplinary methods of authoritative parents are supportive and not castigatory. The democratic nature of authoritative parenting and their disciplinary methods inculcate assertiveness among children. Unlike the authoritative parents, authoritarian parents and permissive parents are not democratic. The discipline methods of authoritarian and the isolation and withdrawal attitude of the permissive parents are punitive which affect the development of assertiveness among their children.

Observations of the findings of the study also indicated that students with authoritarian parents had significantly higher levels of assertiveness compared to students with authoritative and permissive parents. Moreover, permissive parents had children with higher levels of assertiveness compared to authoritative parents. These findings corroborate with extant studies that revealed that authoritarian parents breeds aggression among children than permissive and authoritative parents [16,17,19]. Similarly, [4] found permissive parents to nurture children who

are more aggressive than authoritative parents. The significantly higher levels of aggressiveness among participants with authoritarian parenting compared to those with authoritative and permissive parenting can be explained with the learning theory which posits that aggressive behaviours are learnt through observation, reinforcement or association. When parents adopt parenting styles that are aggressive in nature, their children will observe and imitate them. Because authoritarian parenting is associated with aggressiveness, the children also learn to be aggressive.

The study found no significant difference in the levels of aggression between males and females. This suggests that among the respondents, no significant difference exists between males and females on their levels of aggression. This finding corresponds with extant study which found no significant difference on levels of aggression between females and males [4,19].

Finally, the study found higher level of assertiveness among males compared to females. This finding confirms earlier studies which found higher level of assertiveness among males compared to females [10,25]. As explained by Addai et al. [26], women are still perceived as sex objects and trophies accorded with little respect in some societies as demonstrated in the media-adverts, musical clips, bill boards and magazines. Moreover, some societies perceive women as the object of men when they get marriage. Women are only described using their beauty, whilst men are described as intelligent beings. This has the tendency to make women less assertive. Moreover, as proposed by Addai et al. [26], sex difference in assertiveness is also based on traditionally established stereotype. Certain behaviours are said to be male oriented. For example, being assertive is said to be male dominant behaviour. Females are more likely to encounter disbelief or even hostility from others when they engage in this male dominant assertive behaviour.

5. LIMITATIONS AND FUTURE RESEARCH RECOMMENDATIONS

Like many researches, this study had some methodological difficulties that need to be considered in the interpretation of the findings. First of all, the researchers utilized the convenient sampling technique which makes it difficult for every member of the population to

take part in the study. Future research can make use of the probability sampling technique. The study was also correlational in nature which does not give room for causal inferences. The correlation method used only establishes the strength and direction of the relationship between parenting styles and behavioural outcomes. Users of the evidence here should therefore be aware of this and use the information for descriptive purposes only. Longitudinal research designs may provide better understanding of the impact of parenting styles on behavioural and emotional outcomes.

6. CONCLUSION AND IMPLICATIONS

Findings from the study have proven that authoritative parenting breeds higher levels of assertiveness and lower levels of aggression than authoritarian and permissive parenting. Authoritative parenting also promotes higher aggression in children than permissive parenting though both permissive and authoritarian parents ensure equal level of assertiveness. Considering the negative consequences of authoritarian and permissive parenting on behavioural and emotional outcomes, parents must create an environment that ensure good and cordial relationships, dialogue, explanations and consistent communication to be able to develop good behavioural and emotional outcomes. It is also critical for parents to be equipped with apt skills and knowledge needed for better guidance for positive behavioural and emotional outcomes of their children.

No sex difference was observed on level of assertiveness and aggression. The lack of gender differences in both assertiveness and aggression indicates that females and males might be affected by parenting styles in the same direction or the difference between them is negligible. Again, interacting with diverse nature of people might help in determining the behavioural outcomes of both males and females similarly.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Nyarko K, Addai P, Amissah MC. Influence of childhood attachment on adolescents' interpersonal relationship and self-esteem among undergraduate students of the university of Ghana. *British Journal of Education, Society & Behavioural Science*. 2015;5(3):368-376.
2. Lightsey OR, Barnes PW. Discrimination, attributional tendencies, generalized self-efficacy, and assertiveness as predictors of psychological distress among African Americans. *Journal of Black Psychology*. 2007;33(1):1-7.
3. Baumrind D. The influence of parenting style on adolescent competence and substance use. *Journal of Early Adolescence*. 1991;11(1):56-95.
4. Lokoyi OLO. Parenting styles as correlates of aggressive behaviour among in-school adolescent with mild intellectual disability. *Psychology and Behavioral Sciences*. 2015;4:94-100.
5. SadeghKhani A, AliAkbari M, Jooybari AA. The comparison of Parenting Style Methods of 7-9 year old students' mother with stubbornness disorder in Ilam City. *Exceptional Individuals Periodical Magazine*. 2012;90:114-116.
6. Reshvanloo TF, Hejazi E. Perceived parenting styles, academic achievement and academic motivation: A causal model. *International Journal of Education and Applied Sciences*. 2014;1(2):94-100.
7. McLoughlin N, Rucklidge JJ, Grace CR, McLean PA. Can callus-unemotional traits and aggression identify children at high-risk of anti-social behavior in a low socioeconomic group. *Juvenile Family Violence*. 2010;25:701-712.
8. Sadeghi Z. Parenting skills and cognitive-behavioral therapy. *New Events of Psychotherapy*. 2010;11:43-56.
9. Hardy M, Beers B, Burgess C. Personal experiences and perceived acceptability of sibling aggression. *Journal of Family Violence*. 2009;25:65-71.
10. Jenaabadi H, Pourghaz A, Efteghari O. Investigating the relationship of parenting styles and assertiveness of male high school students. *Journal of Psychology & Behavioral Studies*. 2014; 2(4):116-120.
11. Onyeizugbo U. Effects of gender, age, and education on assertiveness in a nigerian sample. *Psychology of Women Quarterly*. 2003;27(1):1-11.
12. Bahri N. The effect of assertiveness education on self-esteem of girl students by using group counseling. *Peyke Noor*. 2010;29:124-137.

13. Safdar S, Zahrah SM. Impact of parenting styles on the intensity of parental and peer attachment: Exploring the gender differences in adolescents. *American Journal of Applied Psychology*. 2016;4(2): 23-30.
14. Hoskins D. Consequences of parenting on adolescent outcomes. *Collage Review of the books Societies*. 2014;4:506-531.
15. Ahmad R, Imran H, Khanam S, Riaz Z. Gender differences in specific self-esteem of adolescents. *Asian Journal of Social Sciences & Humanities, Asia*. 2013;2(2).
16. Argys LM. Birth order and risky adolescent behavior. *Economic Inquiry*. 2006;44:215-133.
17. Lotfi AA, Vaziri SH, Lotfi KF. Relationship between maternal parenting style and child's aggressive behavior. *International Conference on Education & Educational Psychology*. 2012;69:1276–1281.
18. Skopp NA, McDonald R, Jouriles EN, Rosenfield D. Partner aggression and children's externalizing problems: Maternal and partner warmth as protective factors. *Journal. Fam. Psychol*. 2007;21:459–467.
19. Raya FA, Pino M, Ruiz-Olivares R, Herruzo J. Relationship between parenting style and aggression in a Spanish children sample. *Procedia - Social and Behavioral Sciences*. 2013;82:529–536.
20. Ahadi S, Hejazi M, Foumany GE. The relationship between parenting styles and adolescent's identity and aggression. *Indian Journal of Fundamental and Applied Life Sciences*. 2014;4:1171-1178.
21. Dagnev A, Asrat A. The role of parenting style and gender on assertiveness among undergraduate students in Bahir Dar University. *Saudi Journal of Humanities and Social Sciences*. 2017;2(3):223–229.
22. Alayi Z, Khamen ZA, Gatab TA. Parenting style and self-assertiveness: Effects of a training program on self-assertiveness of Iranian high school girls. *Procedia - Social and Behavioral Sciences*. 2011;30:1945-1950.
23. Darling N, Toyokawa T. Construction and validation of the parenting style inventory II. The Pennsylvania State University: Internal Publication; 1997.
24. Lee DY, Hallberg ET, Slemon AG, Haase RF. An assertiveness scale for adolescents. *Journal of Clinical Psychology*. 1985;41(1):51-57.
25. Seyrdowleh G, Barmas H, Asadzadeh H. Comparison of pupils' social skills and assertiveness with parenting styles. *International Journal of Education and Applied Sciences*. 2014;1(3):147-152.
26. Addai P, Ofori IN, Bioh R, Avor J. Attitude towards women in managerial positions: A study among undergraduate students of the University of Ghana. *International Journal of English Literature and Social Sciences*. 2017;2(5):1-8.

© 2018 Bioh et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:
The peer review history for this paper can be accessed here:
<http://prh.sdiarticle3.com/review-history/26683>