Title	Factors influencing the development of empathy and pro-social behaviour among adolescents: A systematic review
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Publication Date	2018-07-25
Publication Information	Silke, Charlotte, Brady, Bernadine, Boylan, Ciara, & Dolan, Pat. (2018). Factors influencing the development of empathy and pro-social behaviour among adolescents: A systematic review. Children and Youth Services Review, 94, 421-436. doi: https://doi.org/10.1016/j.childyouth.2018.07.027
Publisher	Elsevier
Link to publisher's version	https://doi.org/10.1016/j.childyouth.2018.07.027
Item record	http://hdl.handle.net/10379/14917
DOI	http://dx.doi.org/10.1016/j.childyouth.2018.07.027

Factors influencing the development of empathy and pro-social behaviour among adolescents: A systematic review

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1. Introduction

A large body of international research suggests that the presence of empathy and prosocial responding are associated with a wealth of positive social, psychological and personal benefits (Wagaman, 2011). For instance, an array of research suggests that empathy and prosocial responding play an essential role in the development of healthy social and emotional functioning (Shaffer & Kipp, 2010). Specifically, evidence suggests that empathy and prosocial responding are associated with greater quality peer relationships (Dekovic & Gerris, 1994); greater social competence (Saarni, 1990), less prejudice (Dovidio et al., 2000); greater academic achievement (Caprara et al., 2000; Wentzel, 1993), as well as lower aggression (Raskauskas et al., 2010) and antisocial behaviour (Barr & Higgins-D Alessandro, 2009). Notably, research also indicates that engaging in prosocial and empathic behaviour during childhood and adolescence, promotes greater social and cognitive adjustment (Lenzi et al., 2014; Schmidt et al., 2007), and sets the stage for citizenship and responsibility (Hope & Jagers, 2014; Wray-Lake & Syversten, 2011), throughout the lifespan.

Researchers contend that the moral principles relating to empathy and prosocial responding, such as caring, respect, compassion, fairness, perspective taking and avoidance of harm, are critical to the development of social connectedness and the enrichment of civic society (Wagaman, 2011). The development and expression of empathy and prosocial responding during adolescence are essential for cultivating positive social interactions, promoting greater social understanding, and increasing cooperative, sharing and helping behaviours among all individuals and groups in society (Davis, 1994; Eisenberg et al., 2016). Indeed, there is now a growing consensus that society needs to cultivate a greater sense of empathy and 'other-oriented' responding amongst its young people; not only to realise the full potential of its citizens, but to also help foster greater social well-being (DaSilva et al., 2004). Researchers suggest that in order for democracy to thrive, society needs its young people to develop values that motivate them to engage in socially responsible behaviour and actively participate in civic and social life (Malin & Pos, 2015).

However, while the impact that empathy and prosocial responding have on both youth and societal development is well documented (Albanesi et al., 2007; Miller & Eisenberg, 1988; Rossi et al., 2016), knowledge and understanding of the processes by which young people acquire empathy and engage in prosocial behaviours is more limited (Luengo-Kanacri et al., 2016; Miklikowska et al., 2011). First, despite the volume of research in this area, there are few existing articles or reviews that compare or contrast the associations between

different social and/or psychological factors and adolescents' empathic or prosocial intentions/behaviours. Additionally, the extant literature is also limited by a lack of insight into the factors that impact both young people's empathic attitudes and their prosocial behaviours. Although theorists and researchers recognise that empathy and prosocial responding are inter-related concepts (Segal, 2011; Eisenberg et al., 2009), greater understanding of how these concepts are operationalised in the empirical literature is needed.

In order to focus research efforts and inform effective policy and intervention programmes, greater understanding about the psychological and social correlates associated with the expression of both empathic attitudes and prosocial behaviours among young people is warranted. Therefore, the aim of the current study is to conduct a systematic review of the social and psychological factors that are associated with the expression of empathy and prosocial responding during adolescence (e.g. 13-18 years). This age range was selected as research indicates that there are differences between children and adolescents' empathic and prosocial responding (Ferguson & Garza 2011; Van Der Graff et al., 2014), and that adolescence, in particular, may be a central period for prosocial development (Dovidio et al., 2006; Chase-Landsdale et al. 1995; Eisenberg et al., 2006) . This systematic review paper has two specific objectives: 1) To determine what factors are significantly related to the expression of empathic attitudes in adolescents and 2) To examine which factors are significantly associated the expression of prosocial behaviours or tendencies among adolescents. For the purpose of this review, empathy was conceptualised as the ability to emotionally share another person's feelings or emotions (Affective Empathy) and/or the ability to understand another person's emotional state (Cognitive Empathy; Davis, 1994; Jolliffe & Farrington, 2006). Prosocial Behaviour is operationalised as a voluntary, beneficial social behaviour or intention (e.g. helping, caring, sharing, defending & comforting actions or tendencies) directed toward another individual or group (Eisenberg et al., 2009; Padilla-Walker & Fraser, 2014). See Table 1 for an overview of the terminology used in this review.

Table 1

Glossary of Terminology

Affective/ Emotional Empathy	*The ability to emotionally share another person's feelings or emotions.*
Cognitive Empathy/ Perspective Taking	*The ability to understand another person's emotional state.*
Prosocial Intentions/ Prosocial Behaviour	*Voluntary, social behaviours or intentions (e.g. helping, caring, sharing, defending & comforting) intended to benefit another individual or group*
Prosociality	*Conjoined measure of prosocial and empathic responding toward others*
Dire Prosocial Behaviour	*Helping in emergency situations*
Public Prosocial Behaviour	*Helping others in front of spectators*
Anonymous	*Helping others without their knowledge/ recognition*
Emotional	*Helping in an emotionally evocative situation*
Altruistic	*Helping others without personal reward*
Compliant	*Helping others when asked to*

2. Method

The methodological design of this review was informed by the principles set out by the Centre for Reviews and Dissemination (2009) and the systematic review guidelines identified by Rew (2011). Based on these guidelines, transparent and systematic methods were adopted for identifying, describing, synthesising and appraising the available, relevant research. This method involved four phases i) Establishing an Inclusion/Exclusion Criteria, ii) Selecting a Search Strategy, iii) Screening and Data Extraction and iv) Quality Appraisal.

2.1 Inclusion and Exclusion Criteria

Criteria for the inclusion of studies in this review were established by the authors at the outset and adhered to throughout the searching process. A criteria of seven, strict inclusion/exclusion principles were specified:

A. Articles must report on research from an adolescent sample, with a sample age range between 13-18 years or a mean sample age within this range.

B. Articles must focus on assessing the psychological and/or contextual factors which influence the expression of empathic (cognitive and/or affective) attitudes or prosocial behaviours/tendencies toward another person(s).

C. Articles may not focus on genetic or other biological (e.g. neuropsychological, age)[1] differences.

D. Articles must focus on assessments of typically developing adolescents within school or community settings or with non-clinical samples (e.g. adolescents without psychological or behavioural issues).

E. Articles may not focus on effects that are due to intervention or experimental manipulations.

F. Articles must report on original, empirical research studies, published in peer-reviewed journals that are written in the English language.

G. Articles failing to meet the above criteria (A-E) are included if effects for relevant comparison groups or sub-sample analyses are reported separately.

2.2 Search Strategy

In order to identify all relevant research that focused on assessing the contextual or psychological correlates of empathic and prosocial responding among adolescents, extensive electronic database searching was undertaken. First, five target databases were identified; PsycINFO, Web of Science, Embase, ProQuest, and Scopus. Relevant search terms were identified through preliminary searches of the databases and in consultation with a librarian technician, trained in conducting systematic reviews. Search terms (see Table 2) were searched as both keywords and MeSH[2] terms in each database. Search areas included Title, Abstract, Keywords and Topic. Each database was searched for articles published from the onset of records up until July 10th, 2017.

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[1] Neuroimaging studies were excluded due to differences in the operationalisation of empathic responding (e.g. neural activity) in these studies. See Kral et al. (2017) for more information on brain regions associated with empathic responding in adolescents.

[2] MeSH terms are unavailable in Web of Science and Scopus databases. Therefore, keyword only searches were carried out in these databases.

Table 2

Search Terms & Strategy

promot* OR influen* OR associat* OR effect*
AND
"prosocial behav*" OR empath*
AND
adolescen* OR "young pe*" OR youth*

Note: *(*) is used to donate all possible variations of the word.*

2.3 Screening & Data Extraction

Following the above search strategy, initial searches in PsycINFO, Web of Science, Embase, ProQuest, and Scopus returned 5465, 1977, 3178, 782 and 3353 references, respectively. All references were imported into Endnote and assessed for duplicates. Overall, 4395 duplicates were removed which yielded a total of 10,360 unique references. These remaining references were then screened according to the pre-established Inclusion/Exclusion criteria. All articles were screened in the following order: i) Exclusion/Inclusion based on title; ii) Exclusion/Inclusion based on abstract; iii) Exclusion/Inclusion based on full-text article, following recommendations by Mateen (2013).

Both the first and second authors of this paper independently reviewed the title and abstract of each identified reference and determined the potential relevance of each article. In order to determine inter-rater reliability for the title/abstract review, Cohen's Kappa (*k*) was calculated (Haley & Osberg, 1989). In the current study, good inter-rater agreement was observed (k = .66). All disagreements were resolved by a further review of the title/abstract and a consensus agreement. This resulted in the exclusion of 9484 references and the identification of 876 potentially relevant articles. Further screening of the full-text articles was undertaken by one of the authors. Using the same Inclusion/Exclusion criteria, a total of 218 relevant full-text articles were identified. From the 658 articles which were excluded during full-text screening, 40 articles were removed because no available full-text article could be sourced. Where the full-text was not available, corresponding authors were

contacted via email/post at their denoted correspondence addresses. However, only one author responded to the request and provided a full text manuscript. Reasons for exclusion of all other articles were i) not available in the English language, ii) not focused on quantitative data, iii) not an empirical study iv) not focused on typically developing (13-18 year old) adolescents, v) did not report on associations between empathy/prosocial responding and other social/individual factors.

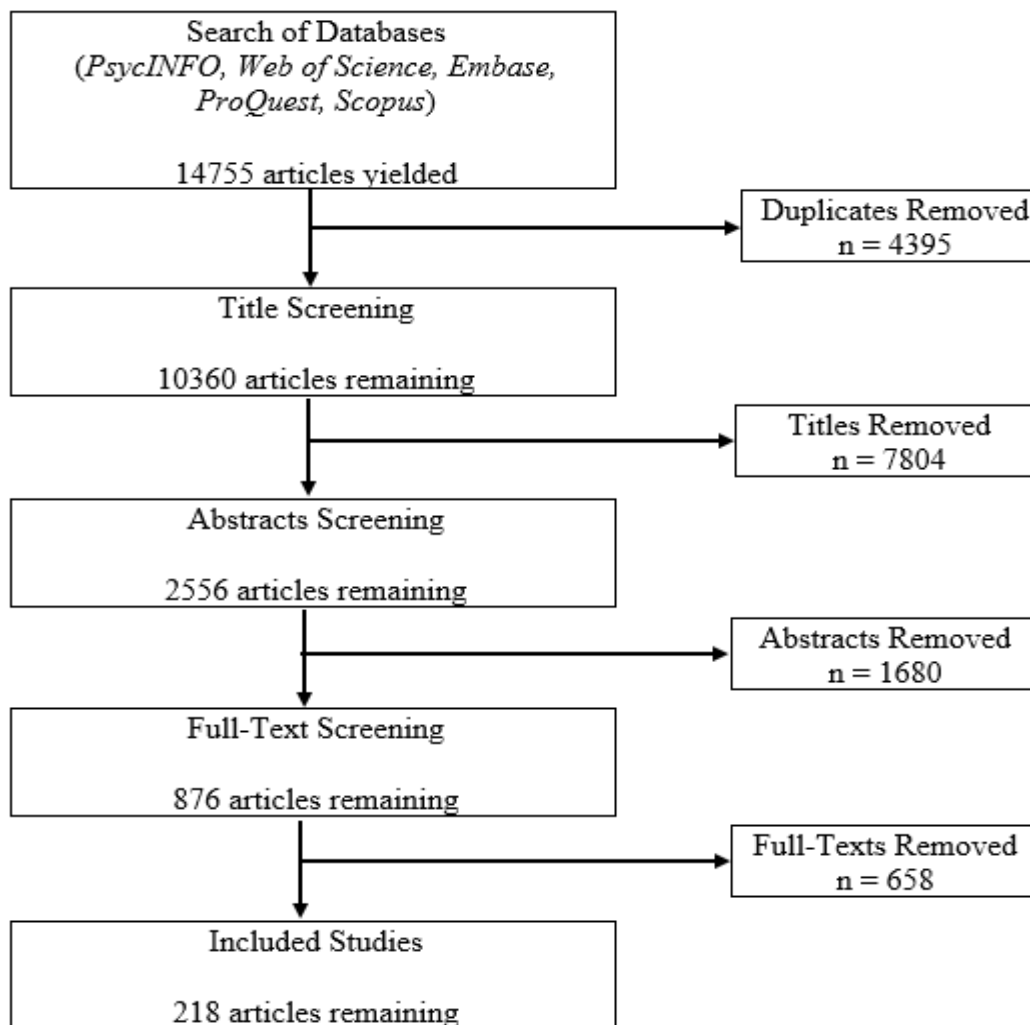For an overview of the literature search and selection process please see Figure 1.

Figure 1. *Screening and selection process of the studies included in this systematic review*

For each included full-text study, data was extracted by the main author and reviewed by the second author. The following main information was extracted from each study;

Author(s), Year, Study Design, Description of Participants (including age, gender, nationality/ethnicity), Number of Participants, Aim of Study, Type of Contextual/ Psychological Factors Assessed, Type of Outcomes Assessed (e.g. Empathy/Prosocial Behaviour), Description of Measurement Tools & Methods Employed, Summary of Statistical Findings and Overall Conclusions.

2.4 Quality Appraisal

All studies identified as meeting the inclusion criteria underwent a critical quality appraisal assessment. The quality of these included studies were reviewed under three headings: *Trustworthiness, Appropriateness* and *Relevance* (Dickson & Gough, 2008). Assessment items for each of these categories were adapted from the Health Evidence Bulletin guidelines and the Joanna Briggs Institute's screening checklist for cross-sectional studies, and based on quality assessments carried out in similar reviews (see Kennan, Brady & Forkan, 2018). A copy of the Quality Appraisal Checklist employed in the current systematic review is included in Appendix A. Following Gough's (2007) weight and value of evidence guidelines, two reviewers (the first and second author) independently appraised each study according to a 10-item checklist. In order to be included in the review, each study had to meet a minimum of 7 (out of 10) of these quality appraisal items *and* satisfy at least 2 items in each category. Where the two authors disagreed, the quality checklist was completed by a third reviewer upon a reading of the full text article. Articles were included if a majority consensus was agreed. This appraisal process resulted in the exclusion of 50 research papers. Studies were often excluded due to poor study design, low sample sizes or insufficient statistical rigour. Thus, a total of 168 unique papers were remaining for inclusion in this review and a narrative description of the findings of these individual studies is provided in the results section.

3. Results

3.1 Characteristics of Included Studies

The findings of a total of 168 independent research articles were subjected to a narrative synthesis for the purpose of identifying and understanding the factors that influence the expression of empathy and prosocial responding among adolescents. First, all included articles were published between 1982 and 2017. It is also important to note that the reviewed studies used a diverse array of methods and procedures (including self, peer, parent and teacher reports) to measure and analyse empathy and prosocial responding among

adolescents. Although a large selection of the studies included in this review (n=54) reported a longitudinal design component, the majority of studies (n=114) report findings from cross-sectional research designs (see Appendix B). Overall, these studies included samples from across 37 different countries. The majority of studies were carried out with adolescents recruited from within the United States (n=64), Italy (n=15), the Netherlands (n=14), and China (n=13). A visual overview of the spread of studies across countries is provided in Figure 2.
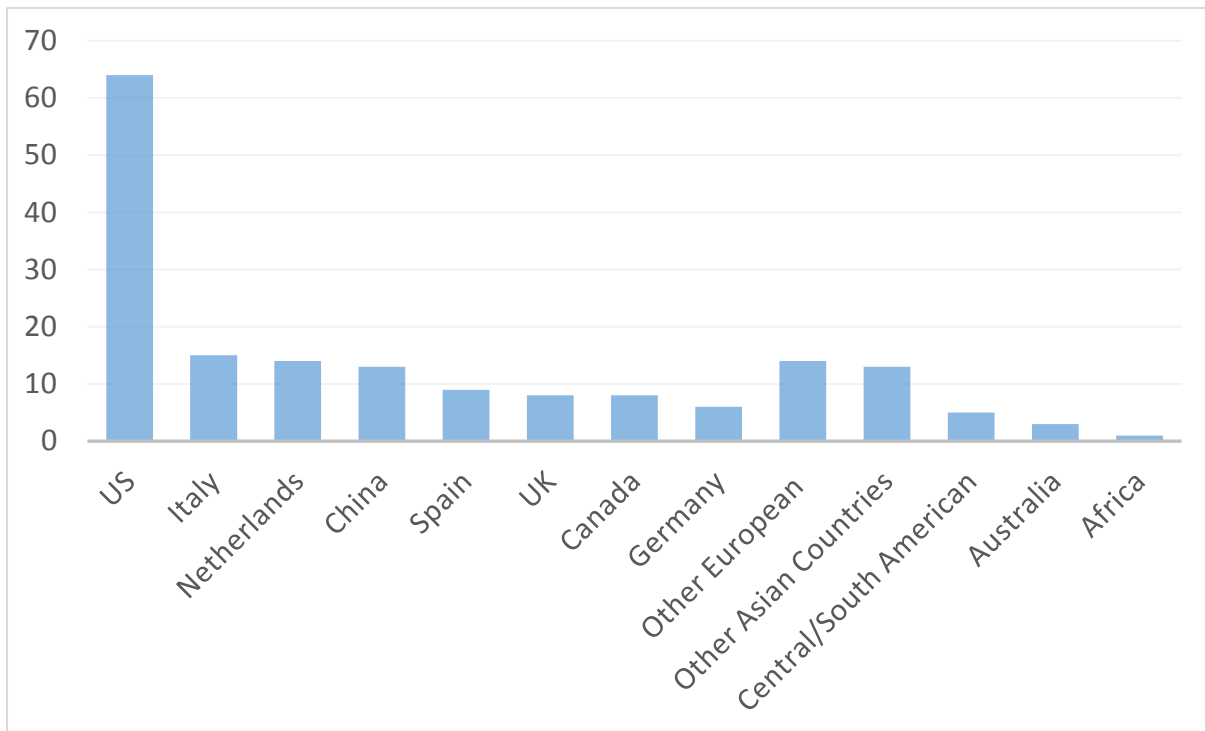

Figure 2. *Number of studies across the different countries*

Of the 168 articles included in this review, only a small number (n=30) included independent assessments of both empathy and prosocial responding. An additional 12 studies reported on adolescents' 'prosociality' (e.g. a conjoint assessment of their prosocial and empathetic responses/tendencies). A further 37 articles reported on the relationship between various psychological/contextual factors and adolescents' (cognitive and/or affective) empathy only, while the majority (n=89) reported on the associations between young people's prosocial behaviours/intentions (including volunteering, caring, helping, charity, sharing, defending and other general prosocial tendencies) and other factors. Among all the included articles, the most frequently used measure to assess empathy was the International Reactivity Index (Davis, 1983), while the most commonly used tool to assess prosocial responding was the Prosocial Tendencies Measure (PTM; Carlo & Randall, 2002; Carlo et

al., 2005). See Appendix B for further information on how constructs were operationalised throughout the different research studies.

A review of the findings reported within these individual studies revealed that adolescents' empathy and prosocial responding appeared to be significantly associated with a variety of different contextual and psychological factors. In order to determine emergent patterns in the data, the findings of all included texts were reviewed and any significant associations between empathy and/or prosocial behaviour and another factor were coded. Codes were generated for each unique individual or contextual correlate reported. Similar codes were grouped to form themes, following a thematic analysis approach (Braun & Clarke, 2006). These emergent themes are described below and provide a summary of the observed research findings.

3.2 Psychological and Social Correlates

3.2.1 Gender

The factor which appeared to be most consistently associated with adolescents' empathy and/or prosocial responding was gender. From the 168 articles included in this review, a total of 115 studies provided evidence of significant gender differences in empathy and/or prosocial responding among adolescents (see Carlo et al., 2012; Chou, 1998; Crandall et al., 2016; Farrell et al., 2016; Machackova & Pfesch, 2016; McGinley et al., 2010; Miklikowska & Hurma, 2011; Molconov, 2014; Ramey et al., 2017; Rutten et al., 2008; Stams et al., 2008; Vossen et al., 2017). The vast majority of these studies (n=104) reported that girls showed statistically higher levels of empathy or prosocial behaviour/intentions than males, with 19 of these articles evidencing that females showed higher levels of empathy or prosocial behaviours/intentions consistently over time. However, it should be noted that one of these studies (Eisenberg et al., 2009) observed that girls only showed greater differences on teacher reports of adolescent prosociality, and that no gender differences were observed when prosociality was assessed by self-report methods. Similarly, although Kumru et al. (2012) observed significant differences in prosocial behaviour between male and female adolescents in Spain, no gender differences in prosocial responding emerged for adolescents in Turkey. In addition, while Pakaslahti, Karjalainen and Keltikangas-Jarvinen (2002) also found that girls appear to engage in higher rates of prosocial responding than boys, this effect was moderated by popularity status and no gender differences were observed between socially rejected or neglected male and female adolescents.

Only two cross-sectional (Albanesi et al., 2007; Jaureguizer, Ibaze & Stauss, 2013) and one longitudinal (Barchia & Bussey, 2011) studies reported that boys showed greater prosocial behaviours/ tendencies than girls. Nonetheless, a small number (n=7) of cross-sectional papers reported conflicting findings, providing evidence to suggest that gender effects may vary depending on the type of empathic attitude or prosocial behaviour being assessed. For instance, Eberly-Lewis and Cotezee (2017) observed that while girls showed greater compliant prosocial tendencies, boys showed higher levels of public prosocial responding. Similar findings were reported by Brittain et al (2013), Carlo et al. (2016), Perenc, Radochonski and Radochonska (2015) and Hardy and Carlo (2005) who also indicated that boys showed higher levels of public prosocial responding, but that girls displayed higher levels of emotional, altruistic, dire and compliant prosocial behaviours. Furthermore, two studies found differential gender effects between empathy and prosocial responding. Findings from Lai, Siu and Shek's (2015) study indicated that while girls showed higher levels of helping intentions, boys showed higher levels of affective empathy. Conversely, McGinley et al. (2010) noted that although being male was associated with higher volunteering intentions and behaviours, girls showed higher dire prosocial behaviours and empathic responding.

All of these above studies assessed gender according to self-reported male or female categories; only one study (Ma, 2005) assessed differences in empathy or prosocial responding in terms of masculinity and femininity, in which it was observed that prosocial responding was positively associated with both masculine and feminine traits. Additionally, it is important to note, while the above findings report on direct significant associations between gender and prosocial/empathic responding among adolescents, findings from 23 papers indicated that gender also appeared to moderate the relationship between empathy/prosocial responding and other factors (Mayberry & Espelage, 2007; Nie et al., 2016; Pozzoli & Gini, 2010; Smith et al., 2016). These moderation effects are described in more detail in the emerging themes below.

3.2.2 Personality Traits & Social Desirability

Another dominant theme to emerge from the literature review, was the link between personality and empathic/prosocial responding. In total, 20 studies suggested that individual personality traits or tendencies are associated with adolescents' empathy and/or prosocial responding. However, this research tended to examine the effects of various different

personality traits and as a result it is more difficult to discern a consistent trend or pattern in the relationship between personality and empathy/prosocial responding. First, findings from two longitudinal papers indicated that resiliency traits are positively associated with both prosociality and volunteering behaviours over time (Alessandri et al., 2014; Atkins et al., 2005). Other correlational findings also indicated that honesty-humility, impulsivity, callousness, extraversion, openness, intelligence, crying proneness, conscientiousness (boys only), and agreeableness (boys only) are all positively associated with empathy or prosocial responding (Algaier et al., 2015; Cheung et al., 1998; Eberly-Lewis & Coetzee, 2015; Francis et al., 2012; Joliffe & Farrington, 2006; Kauten & Barry, 2016; Ma et al., 1996; Van Tilburg et al., 2002). Findings from one additional longitudinal study also supported the link between agreeableness and prosociality over time (Caprara et al., 2009). Interestingly, six studies reported evidence that trait lying or social desirability was also associated with greater self-reported engagement in prosocial behaviours (Kavussanu, 2006; Krauss et al., 2014; Ma, Cheung & Shek, 2007; Rutten et al., 2007; 2008; Stams et al., 2008).

Conversely, ego orientation (Kavussanu, 2006) and psychoticism (Francis et al., 2012; Ma et al., 2007) were found to be negatively associated with adolescents' prosocial responding. Longitudinal research by Brouns et al. (2013) also indicated that greater psychopathic traits were associated with lower cognitive and affective empathy in females, but were only associated with lower affective empathy in males. Ma et al. (2007) also reported a negative relationship between neuroticism and adolescents' prosociality, but Joliffe & Farrington (2006) and Francis et al. (2012) found a positive association between this personality trait and affective empathy. However, in the Joliffe and Farrington (2006) study this correlation was only significant for females. Furthermore, while Barry, Kauten and Lui (2014) indicated that narcissism was associated with lower affective empathy, findings from Eberly-Lewis and Coetzee (2015) indicated that narcissism was positively associated with public and opportunistic prosocial responding. Findings from both Barry, Lui and Anderson (2017) and Kauten and Barry (2016) also revealed that narcissism was positively related with prosocial responding. Crucially, this relationship was only significant for self-reported prosocial behaviours, and was not found to be significantly related to peer, parent or teacher reports of adolescents' prosocial responding.

3.2.3 Personal Values, Knowledge, & Morality

From the strand of research which examined how adolescents' values or moral beliefs/reasoning influenced their empathic attitudes or behaviours, a number of interesting findings emerged. First, 16 articles reported significant associations between adolescents' general prosocial values and their engagement in various prosocial behaviours (Alguilar-Vafaie et al., 2011; Busch & Hofer, 2011; Furrow, King & White, 2004; Ji, Pendergraft & Perry, 2006; Johnston & Krettenauer, 2011; Krauss et al., 2014; Laursen et al., 2016; Lenzi et al., 2013; Padilla et al., 2012; 2007; Pozzoli & Gini, 2010; Pratt et al., 2013; Wentzel, Filisetti & Looney, 2007). However, only three of these papers reported significant links between personal values and prosocial behaviour over time (Lawford, Doyle & Markiewicz, 2013; Padilla et al., 2014; Wray-Lake, Syversten & Flanagan, 2016), while only one longitudinal study suggested a positive link between knowledge and prosocial behaviour (McMahon et al., 2012). In addition, findings from Yang, Fu and Kou (2017) suggested that other personal values, such as striving to live a life of meaning and pleasure, were also positively related to prosocial activity. Similarly, Paciello et al (2013) observed that self-transcendence values were positively, but self-enhancement values were negatively, associated with helping intentions. Notably, only four cross-sectional and studies reported significant associations between prosocial/personal values or knowledge and empathy. Specifically, findings from Fox et al. (2010) indicated that holding supportive attitudes toward victims of bullying was negatively correlated with affective empathy. Furthermore, research indicated that empathy was positively associated with greater social democratic values (Miklikowska & Hurme, 2011), personal responsibility values (Furrow et al. 2014), but that greater political knowledge negatively related to adolescents' empathic attitudes (Miklikowska & Hurme, 2011). One longitudinal study also reported a negative correlation between empathy and prejudice over time (Miklikowska, 2017).

Other research identified a link between adolescents' socio-cognitive moral processes and their empathic and prosocial responding. For example, Laible, Murphy and Augustine (2014) found an association between adolescents' prosocial responding and their moral affect/cognition, however this relationship varied depending on how adolescents' prosocial behaviour was operationalised. In particular, both moral affect and moral cognition had a positive relationship with adolescents' altruistic, emotional and defending behaviour, but adolescents' compliant responding was not found to be associated with their moral cognition. Additionally, both Hardy, Bean and Olsen (2014) and Hardy et al. (2012) reported that adolescents' moral identity was positively related to their prosocial (charity & civic

engagement) behaviours and affective empathy, respectively. Moreover, findings by Paciello et al. (2012; 2013) suggested that moral disengagement was negatively related to both empathy and prosocial responding. Inconsistently, however, Hardy et al. (2014) indicated that higher levels of moral disengagement were negatively linked to engagement in charity work, but positively related to prosocial civic or community engagement among adolescents. Research by Molchanov (2014) indicated that adolescents' affective empathy was significantly associated with their moral dilemma solving. In addition, evidence from 8 other correlational studies suggested that adolescents' prosocial moral reasoning and empathic/prosocial responding are linked. In general, this research indicated that greater prosocial moral reasoning was positively linked to prosocial (Paciello et al., 2012; 2013; Rutten et al., 2005; Wyatt & Carlo, 2002) and empathic (Paciello et al., 2012; Stams et al., 2008) responding. Notably, Furrow et al. (2004), Kumru et al (2012) and Llorca-Mestre, Malonda-Vidal and Samper-Garcia (2017) indicated that other-oriented, internalised and stereotypic prosocial moral reasoning styles were related to greater empathy and prosocial responding, while hedonistic and approval oriented prosocial moral reasoning appeared to be negatively related to prosocial responding. Conversely, Carlo et al (1996) reported that hedonistic, approval-oriented, needs-oriented and internalised reasoning were all positively related to male adolescents' prosocial behaviour, while female adolescents' prosocial behaviours were only significantly associated with internalised reasoning.

3.2.4 Self-Beliefs, Emotion Regulation & Social Skills

Findings from the reviewed articles also indicated that adolescents' perceptions of themselves, such as their self-esteem or self-efficacy beliefs, and emotional regulation skills were also significantly associated with their prosocial and empathic responding. First, a number of studies (n=11) highlighted a link between adolescents' beliefs about their ability (e.g. efficacy) to enact social change, socially engage with others, or respond effectively to others' emotions and their prosocial responding (Alessandri et al., 2009; Bandura et al., 2003; Caprara et al., 2009; Carlo et al., 2017; Christoph, Gniewosz and Reinders, 2014; Gini et al., 2008; Kauten & Barry, 2016; Lichter et al., 2002; Lenzi et al., 2013; McMahon et al., 2012; Wentzel et al., 2007). However, the majority of these studies were correlational and only four papers provided evidence of an association between self-efficacy and prosocial responding over time. Furthermore, only one study provided evidence to suggest that self-efficacy and empathy were related (Barchia & Bussey, 2011), although this relationship was only found for affective empathy, it was observed to be significant across multiple time points.

Other research indicated that adolescents' prosocial responding was significantly associated with their self-views/concepts and self-esteem. Namely, five cross-sectional research papers observed positive associations between adolescents' prosociality or prosocial responding and their self-evaluations (Carlo, Basilo & Knight, 2016); commitment to a sense of identity (Busch & Hofer, 2011); feelings of personal meaning (e.g. sense of purpose & achievement of goals [boys only]; Furrow et al., 2004), personal growth (Ma et al., 2007) and optimistic outlooks for their future (Alguilar-Vafaie et al., 2011). However, similar correlational research by Evans and Smokowski (2015) indicated that future optimism was only positively associated with prosocial (e.g. defending) behaviour in females - and negatively linked with prosocial responding for males. Three additional longitudinal studies indicated that adolescents' agency or feelings of personal effectiveness (Christoph et al., 2014), self-awareness (Reinders & Youniss, 2006) and self-concepts (Crocetti et al., 2016) were positively linked to prosocial (e.g. helping, kindness & donating) responding over time. Notably, Christoph et al. (2014) also observed that ideology changes (e.g. changes in one's self-portrait) were associated with lower helping behaviours. Crucially, only one of these studies also reported significant links between adolescents' self-evaluations and their empathic responding. Specifically, findings by Furrow et al. (2004) suggested that perceptions of greater personal meaning was significantly correlated with greater cognitive and affective empathy.

Additionally, five studies identified significant links between adolescents' self-esteem and prosocial/empathic responding; although inconsistent patterns of relationships were observed across these five studies. For instance, longitudinal research reported a positive relationship between self-esteem and prosociality and prosocial behaviour over time (Fu, Padilla-Walker & Brown 2017; Zuffiano et al. 2014). However, Fu, Padilla-Walker and Brown (2017) noted that when this relationship was tested in a structural equation model, self-esteem was only found to be significantly related to self-reported prosocial behaviour toward strangers, and had no significant relationship with prosocial responding toward friends or family. Similarly, Sadhra et al. (2015) reported a positive relationship between self-esteem and peer-reported helpfulness and kindness but appeared to be negatively associated with self-reported empathy. Furthermore, Machackova et al. (2016) also noted that higher self-esteem was associated with lower empathy, while Evans and Smokowski (2015) found a negative link between self-esteem and defending behaviour.

Further research highlighted a significant relationship between adolescents' social or emotional skills and their empathic/prosocial responding. In particular, three correlational (Hardy et al., 2014; Nie et al., 2016; Wentzel et al., 2007) and five longitudinal studies (Alessandri et al., 2014; Carlo et al., 2012a; Padilla-Walker et al., 2014; 2015; 2016) reported positive links between emotional regulation skills (e.g. effortful control, self-regulation, emotional awareness or emotional self-control) and adolescents' prosociality or prosocial behaviour. Moreover, a number of findings suggested that prosocial responding may be negatively related to emotional reactivity or instability (Carlo et al., 2012a; 2012b; Laible et al., 2014) or other emotional/psychological issues, such as depressive affect (Harper et al., 2016; Jessor & Turbin, 2014; Laible, Murphy & Augustine, 2014; Padilla-Walker et al., 2015; Van Rijeswik et al., 2016; Wentzel et al., 2007 [boys only]; Yang et al., 2017). Interestingly, Davis et al. (2016) observed that greater depressive affect was significantly linked to lower altruistic behaviour over time, but positively linked to public prosocial responding. Additionally, Padilla-Walker et al. (2014) observed that anxiety was actually positively linked to greater prosocial responding toward friends. In contrast, only one study reported a significant association between adolescents' emotional regulation and their empathic attitudes (Rieffe & Camodeca, 2016).

It is also important to note that conflicting findings emerged in relation to the association between adolescents' prosocial/empathic responding and personal distress. Notably, some findings suggested that there was a positive relationship between adolescents' feelings of personal distress and their empathic (Paciello et al., 2012; Rieffe & Camodeca, 2016) or prosocial responding (Eberly-Lewis & Coetzee, 2015), while other findings indicated that personal distress had a negative relationship with empathy (Furrow et al., 2004) and prosocial behaviour (Eberly-Lewis & Coetzee, 2015; Furrow et al., 2004; Paciello et al., 2012). Furthermore, a small collection of research suggested that adolescents' other social-emotional skills, such as their coping (Pozzoli & Gini, 2008), non-attachment (*e.g. mindfulness, well-being, autonomous regulation etc;* Sadhra et al., 2015), socio-emotional processing (*e.g. assertion, self-control;* Lozado et al., 2017) and other social skills (Albanesi et al., 2007; Anastacio et al., 2016; Kauten & Barry, 2016; Wentzel et al., 2007) were also significantly related to their empathic and prosocial responding.

3.2.5 Empathy & Previous Prosocial Responding

Of the 30 articles which included independent assessments of both empathy and prosocial responding, 28 provided evidence to suggest that empathy and prosocial responding in adolescents were significantly related. In general, research showed a positive relationship between cognitive (Alberio et al., 2009; Barr & Higgins-D'Alessandro, 2007; Carlo et al., 2012; Furrow et al., 2004; Gini et al., 2008; Llorca-Mestre et al., 2017; Machackova et al., 2016; Markstrom et al., 2010; Mesurado et al., 2014; Rieffe & Camodeca, 2016; Wentzel et al., 2007) and affective (Alberio et al., 2009; Barr & Higgins-D'Alessandro, 2007; Carlo et al., 2012; Furrow et al., 2004; Gini et al., 2008; Llorca-Mestre et al., 2017; Mesurado et al., 2014; Paciello et al., 2012; Rieffe & Camodeca, 2016; Stams et al., 2008; Thompson & Gullone, 2008) empathy and prosocial behaviour. Additionally, although evidence from several longitudinal studies also supported a positive relationship between empathy and prosocial responding over time (Harper et al., 2014; Padilla-Walker et al., 2014a; 2014b; 2015b; 2016), this research only measured affective empathy.

Nonetheless, when examining the relationship between empathic and prosocial responding, a number of other interesting trends emerged. For example, Sadhra et al. (2015) first noted that empathy and prosocial responding appeared to be significantly and positively related, but this relationship became non-significant when other factors (e.g. self-esteem, non-attachment) were added to the model. Additionally, Barchia and Bussey's (2011) longitudinal research found that empathy was significantly linked with greater defending behaviour, but only for girls. Furthermore, Gini et al. (2009) reported a significant link between greater defending behaviour and affective empathy, but observed a non-significant link with cognitive empathy. Similarly, while Machackova and Pfetsch (2016) observed that both cognitive and affective empathy were positively associated with greater defending behaviour (in traditional bullying situations), only affective empathy was associated with greater online defending behaviours. Other research also found that the relationship between empathy and prosocial responding appeared to vary, depending on the type of prosocial response assessed. Namely, Laible et al. (2014) indicated that defending, altruistic and emotional prosocial responding were positively related to both cognitive and affective empathy, but that adolescents' compliant prosocial tendencies were only significantly related to affective empathy. Moreover, Davis et al. (2018) reported a significant, positive link between dire, emotional and compliant prosocial behaviour, and both cognitive and affective empathy, but found that affective empathy was positively associated altruism, while cognitive empathy was negatively associated with altruism. Likewise, research by Carlo et al (2017)

also suggested that affective empathy was positively related to compliant, dire, emotional and anonymous prosocial responding but negatively related to altruistic and public prosocial tendencies. In addition, Eberly-Lewis & Coetzee (2015) showed that although affective and cognitive empathy were associated with higher levels of dire, compliant and emotional prosocial behaviours, affective empathy was also linked with lower public and opportunistic responding, and McGinley et al. (2010) indicated that affective and cognitive empathy were associated with greater dire prosocial responding but lower volunteering. Findings from one longitudinal study also revealed that affective empathy was significantly associated with helping intentions, but not with actual prosocial behaviours. Other research by Jolliffe and Farrington (2006) and Anastacio et al (2016) suggested that affective and cognitive empathy were positively correlated, while ten independent longitudinal studies (Brouns et al., 2013; Krahe & Moller, 2010; Mestre et al., 2017; Miklikowska, 2017; Miklikowska et al., 2011; Padilla-Walker et al., 2014a; Van Lissa et al., 2012; 2014; Vossen et al., 2017; Yoo et al., 2013) also indicated that positive associations in adolescents' empathic responding could be evidenced over time.

Similarly, evidence from 17 longitudinal studies suggested that adolescents who report engaging in previous prosocial behaviours show higher levels of prosocial responding (Bandura et al., 2003; Barchia & Bussey, 2011; Barry & Wentzel, 2006; Caprara et al., 2009; Cheung & Ngai, 2015; Crandall et al., 2016; Crocetti et al., 2016; Davis et al., 2016; Eberly & Montemyor, 1999; Fu et al., 2017; Padilla-Walker, 2014a; 2014b; 2015b; Sage & Kavussanu, 2008; Wright, 2014; Yoo et al., 2013) or prosociality (Zuffiano et al., 2014) over time. Ten other correlational studies also purported that adolescents' prosocial behaviour correlates positively with other forms of prosocial responding (Albanesi et al., 2007; Chou, 1998; Hardy et al., 2009; 2015; Jaureguizar et al., 2013; Kauten & Barry, 2016; Laible et al., 2014; Machackova & Pfetsch, 2016; McGinley et al. 2010) or prosociality (Albert et al., 2016). Furthermore, Law and Shek (2011) noted that adolescents' volunteering intentions correlated positively with their volunteering behaviours. Nonetheless, other research noted inconsistent relationships between different forms of prosocial behaviours. For instance, one study reported a negative connection between community service and later prosocial behaviour (Christoph et al., 2014). Davis et al. (2018) found that while public, emotional and dire prosocial responding correlated positively with each other, negative associations were found with altruism; a finding which was echoed in the longitudinal research by Brittain et al. (2013). Moreover, Eberly-Lewis and Coetzee (2015) observed that although dire, compliant

and emotional prosocial responding were significantly related to each other, they tended to show no link with either public or altruistic responding, while Hardy and Carlo (2005) evidence that kind, prosocial behaviour and public prosocial responding were not related.

3.2.6 Parents, Siblings & Family Dynamics

Parental influences were also one of the most widely investigated contextual correlates of empathy and prosocial behaviour among adolescents. In sum, 35 correlational and 22 longitudinal studies independently reported that aspects of the parental or family context are significantly associated with adolescents' empathic or prosocial responding. Of these individual papers, six studies reported that greater levels of parent-child connection or attachment correlated positively with prosocial responding (Coyne et al., 2010; 2013; Eberly & Montemayor, 1998; Nie, Li & Vazsonyi, 2016) and empathy (Thompson & Gullone, 2008; You et al., 2015), with one longitudinal study observing a positive relationship between attachment quality and prosocial behaviour toward parents over time (Eberly & Montermayor 1999). Several (n=6 correlational; n=10 longitudinal) studies also provided evidence to suggest that democratic, authoritative parenting styles, characterised by warm, responsive, supportive and open communication practices are also linked with higher levels of prosocial behaviour (Carlo et al., 2007; 2017; Eberly & Montermayor 1999; Gerardy et al., 2015; Harper et al., 2014; Karmarkar & Ghosh, 2012; Kerestes, 2006; Lawford, Doyle & Markiewicz, 2012; Padilla-Walker et al., 2012; 2014b; 2015a; Van Goethem et al., 2014) and empathic responding (Adams et al., 1982; Fousiani et al., 2016; Harper et al., 2014; Miklikowska 2011; Miklikowska & Hume, 2011; Padilla-Walker et al., 2014b; Van Der Graff et al., 2012). However, some inconsistencies in these trends were observed. Specifically, Adams et al. (1982) reported that sympathetic parenting was associated with higher levels of empathy, although this effect was only significant for male adolescents and not females. Similarly, Miklikowska (2011) observed differential effects for maternal and paternal support on empathic responding; it was noted that while paternal support appeared to correlate with increased cognitive empathy, maternal support was associated with greater affective empathy, but only for girls. Furthermore, findings from Carlo et al. (2017) indicated that parents' discursive communication and responsiveness was positively associated with compliant prosocial responding, but were not significantly associated with adolescents' empathic, dire, anonymous, emotional or public responding, while responsiveness was negatively associated with altruism. Research (n=11) also demonstrated that parental monitoring and control had significant associations with adolescent empathy and prosocial

responding. Generally, this research indicated that parental monitoring and supervision are associated with greater prosocial (Aguilar-Vafaia et al., 2011; Kerestes, 2006; Jessor & Turbin 2014; Krauss et al., 2014; Padilla et al., 2016; Yoo, Feng & Day, 2013) and empathic (Joliffe & Farrington, 2006; Padilla et al., 2016; Yoo, Feng & Day, 2013) responding, but that high levels of hostile control or conflict (Fousiani et al., 2016; Karmarkar et al, 2012; Van Lissa et al., 2016; 2014) are associated with lower empathy and prosocial behaviours. However, only three of these studies were longitudinal.

In addition to the effects of parental relationship quality and practices, a number of studies showed that parental modelling of empathic attitudes/behaviours was positively related to adolescents' own prosocial behaviours. For instance, correlational research by Hardy, Carlo & Roesch (2009) Jessor and Turbin (2014), Wyatt and Carlo (2002) and Van Goetham et al. (2014) and Lai et al. (2015), demonstrated that parental modelling of civic engagement or prosocial behaviour was linked to higher levels of adolescent prosocial responding. However, although parental modelling did not appear to be linked to empathy, findings from two longitudinal studies suggested that adolescent empathy was positively associated with parental empathy (Van Lissa et al. 2014) and negatively associated with parental prejudice (Miklikowska et al., 2017). Moreover, Mesurado et al. (2014), Padilla-Walker et al. (2007) and Wyatt and Carlo (2002) observed that parental expectations for prosocial responding was associated with significantly higher levels of prosocial behavioural responses among adolescents. Other longitudinal research by McGinley et al. (2010) suggested a positive link between parental encouragement to volunteer and affective empathy and volunteering behaviour in adolescents. Similarly, Carlo et al. (2007) showed that parental encouragement of volunteering and promotion of perspective taking/compassion were positively linked with adolescents' empathy and compliant, anonymous and dire prosocial tendencies. Conversely, Carlo et al. (2007) evidenced a significant link between parental encouragement and lower altruistic responding.

Approximately 17 studies also examined the effects of parental income and education (e.g., socio-economic status) on adolescents' prosocial and empathic responding. In general, the results of these correlational (Chou, 1998; 1999; Evans & Smokowski, 2015; Jessor & Turbin 2014; Karmarkar & Ghosh, 2012; Kerestes, 2006; Michaelson, Robinson & Pickett, 2014) and longitudinal (Atkins, Hart & Donnelly, 2005; Chowhan & Stewart, 2007; Crandall et al., 2016; Lichter, Shanahan & Gardner, 2002; Yoo et al. 2013) studies tended to suggest that higher levels of parental income and/or parental education are associated with higher

prosocial behaviour. However, two studies reported some contrasting evidence; one longitudinal study (Call et al. 1995) suggested that lower family income was associated with lower levels of home helping behaviours, but higher levels of work prosocial helping, while Davis et al. (2018) indicated that greater socio-economic disadvantage, was associated with higher altruistic behaviour, but lower public prosocial behaviours. Furthermore, in relation to the link between parent's socio-economic status and adolescents' empathic responding, only 3 papers appeared to observe a significant link (Joliffe & Farrington, 2006; Miklikowska, 2017; Padilla et al., 2009).

Finally, findings also pointed at a significant relationship between adolescents' prosocial and empathic responding and aspects of the wider family dynamic. Namely, 7 studies identified positive family environments (characterised by supportive and cohesive family relationships) as being positively related to empathy (Estevez et al., 2016; Lopez et al., 2008; Ma et al., 1996) and prosocial behaviour (Crandall et al., 2016; Hur et al., 2017; Jaureguizar et al., 2013; O'Brien & Kauffman, 2013) in adolescents. Two studies reported on the role of siblings, where results suggested that sibling affection was associated with greater empathic and prosocial responding among adolescents concurrently (Perenc et al., 2015) and over time (Harper et al., 2014). Other correlational (Evans & Smokowski 2015, Jessor & Turbin, 2014; Lai et al., 2015; Michaelson et al., 2014) and longitudinal (Call et al., 1995; Lichter et al. 2009; Padilla-Walker et al., 2015a; 2015b; 2016) research reported that adolescents' empathic and prosocial responding may also be associated with household size or family structure. Notably, Padilla-Walker et al. (2015a) observed that adolescents from single-parent families also evidenced lower levels of kindness and generosity – but apparently only toward strangers, as no differences were found in adolescents' prosocial responding toward friends or family. Additionally, Lichter et al. (2009) noted that belonging to a female headed household was associated with lower volunteering behaviours for males, but not for females.

3.2.7 Friends, Peers & Popularity

Another dominant theme to emerge from the literature was the association between adolescents' prosocial and empathic responding and the behaviours/values of, and/or their relationships with, peers and friends. In particular, research (n=12) suggested that quality, peer friendships are positively associated with both adolescents' empathic attitudes and their prosocial behaviours (Barr & Higgins-D'Allessandro, 2007; Evans & Smokowski 2010;

Jessor & Turbin, 2014; Krauss et al., 2014; Lenzi et al., 2013; Lopez et al., 2008; Plenty et al. 2015). It should be noted, however, that the research by Barr and Higgins- D'Alessandro (2007) demonstrated that positive peer relationships in schools were associated with greater affective empathic responding in males, but was not significant for females. In contrast, Lopez et al. (2008) reported that peer affiliation in schools was positively associated with affective empathy for females, but not for males. Longitudinal research by Padilla-Walker et al. (2015a) and Harper et al. (2014) indicated that quality peer connection was associated with higher levels of prosocial responding among adolescents over time. Similarly, Padilla-Walker et al. (2014b) found an indirect, positive relationship between peer connection and prosocial behaviour, via empathy.

A substantial number of papers (n=14) also provided evidence to suggest that adolescents' own prosocial behaviours are significantly linked with the type of norms, values and behaviours modelled by the peer group. Cross-sectional research shows that adolescents whose peers model prosocial behaviours, promote prosocial values and norms, or discourage deviant/aggressive behaviour also show higher levels of a variety of prosocial behaviours (Farrel, Thompson & Mehari, 2016; Jessor & Turbin, 2014; Lai et al., 2015; Laursen et al., 2014; Ma et al., 1996; 2007; Padilla-Walker et al., 2007; Pozzoli & Gini, 2010; Wentzel et al., 2007). Other research by Van Goethem et al. (2012) found a positive association between best friend volunteering behaviours and adolescents' frequency of volunteering, however this relationship appeared to be stronger for older rather than younger adolescents. Conversely, research by McGinley et al. (2010) found that friend volunteering behaviour was negatively associated with adolescents' frequency of volunteering. Moreover, only three longitudinal studies (Barry & Wentzel, 2006; Berger & Rodkin, 2011; Padilla-Walker et al., 2012) provided evidence of a positive correlation between friend prosocial values or norms and self-reported prosocial behaviours/prosociality among adolescents. However, Padilla-Walker et al. (2012) did not observe a significant relationship when prosocial behaviour was measured by parent reports and Barry and Wentzel (2006) noted that friend's prosocial modelling was only associated with adolescents' prosocial behaviour, when interaction frequency was low and friend affection was high. Additionally, while significant associations between friend attitudes/behaviours and adolescents' empathic attitudes were also reported, this relationship appeared to be more tenuous and was only observed in one cross-sectional (Padilla-Walker et al., 2009) and one longitudinal (Miklikowska, 2017) study.

Significant associations between adolescents' empathic/prosocial responding and other aspects of the peer context were also noted. For example, two longitudinal research studies (Miklikowka, 2017; Eisenberg et al., 2009) suggested that adolescents with intergroup (e.g. cross ethnic) friendships tended to display higher levels of prosocial behaviour. Cao and Lin (2015) demonstrated that frequency of association with friends online was positively correlated with engagement in online defending behaviour and Pattiselanno et al. (2015) observed a significant relationship between clique size/hierarchy and prosocial responding in boys/girls (respectively). Additionally, a small number of studies provided evidence to suggest that adolescents' popularity or social status among their peers was associated with prosocial responding. More specifically, this research suggests that more 'popular' or 'socially preferred' adolescents tend to engage in higher levels of prosocial responding (Albanesi et al., 2007; Gerardy et al., 2015; Pakaslanti et al., 2002; Pattiselanno et al., 2015 ; Sadhra et al., 2015). In keeping with this trend, evidence from three longitudinal studies also supported a link between popularity and prosocial responding (Berger & Rodkin, 2011; Van Rijeswik et al. 2016; Wright, 2014). Furthermore, two cross-sectional studies reported a significant relationship between adolescent popularity and empathy. Notably, however, Estevez et al. (2016) indicated that having a social reputation as a non-conformist or rule-breaker was positively correlated with empathic responding, while Lopez et al. (2008) found that, for boys, perceived popularity was negatively associated with empathy.

3.2.8 Schools

Twenty-two papers indicated that aspects of the school context are significantly associated with adolescents' empathic and prosocial responding. Findings from a small number of studies (Evans & Smokowski, 2015; Krahe & Moller, 2011; Ma et al., 1996; Schwartz et al., 2007) proposed that greater academic achievement was positively associated with higher levels of prosocial responding. Notably, however, a number of interesting moderating effects were observed by the longitudinal research in this area. First, Van Rijeswik et al. (2016) suggested that high academic achievers appear more likely to engage in helping behaviours. Nonetheless, the evidence also suggested that these adolescents may only be more likely to help other similar peers and, in fact, appear less likely to help low academically achieving students. Other longitudinal research by Carlo et al. (2017) found a positive association between adolescents' academic grades and their dire and compliant prosocial responding, but not with their emotional prosocial tendencies. Similarly, while Padilla et al. (2012) also observed a positive relationship between adolescents' academic

values and subsequent prosocial behaviour toward the family, this relationship appeared to be impacted by the types of parental practices employed. Furthermore, Lichter et al. (2002) evidenced a negative relationship between volunteering and higher academic grades for girls and a non-significant relationship for boys. Additionally, it is also important to note that, only one (longitudinal) study Krahe and Moller (2010) reported a significant link between empathy and higher academic achievement.

Other research indicated that positive, democratic school environments and norms are associated with greater prosocial (Barchia & Bussey, 2011; Krauss et al., 2011; Lai et al., 2014, O'Brien & Kauffman, 2013) and empathic responding (Barchia & Bussey, 2011; Barr & Higgins-D'Alessandro, 2007; You et al., 2015) among adolescents. Interestingly, Estevez et al. (2016) found that empathy was positively correlated with positive attitudes toward authority and negatively correlated with perceptions of injustice. Conversely, Lopez et al. (2008) found that empathy was positively correlated with negative attitudes toward authority and perceptions of injustice. Other evidence suggests that teacher support is significantly linked to prosocial responding (Evans & Smokowski 2015; Estevez et al., 2016; Jaureguizar et al., 2013; Lopez et al., 2008; Plenty et al., 2005), while Jessor and Turbin (2014) and Cheung and Ngai (2017) indicated that adolescents' prosocial behaviour was positively influenced by the level of school monitoring and sanctions, as well as the availability of counselling services within the school. One US study by Voight, Gellar and Nation (2013) suggested that higher levels of inter-ethnic mixing may have negative effects on prosocial behaviour among adolescents. Specifically, this research reported that as the class enrolment numbers of African-American students increase, prosocial behaviour decreases, but only in Caucasian adolescents. Notably, only one study (Barr & Higgins-D'Alessandro, 2007) suggested that student-teacher relationships and educational opportunities (e.g. type of education received) within the school had significant links with empathy.

3.2.9 Neighbourhoods, Culture & Ethnicity

A number of studies (n=11) proposed that adolescents' cultural background and neighbourhood context may also have associations with prosocial responding. Research suggested that residential stability, neighbourhood cohesion and control, quality of adult-youth interaction, and community connectedness and social support were all associated with greater prosocial responding among adolescents (Albanesi et al., 2007; Barry et al., 2014; Jessor & Turbin, 2014; Lenzi et al., 2013; O'Brien and Kauffman, 2013; O'Brien & Wilson,

2011; Ramey et al. 2017; Schwartz et al., 2013). One study also evidenced regional differences in adolescents' level of prosocial responding (Karmarkar & Ghosh, 2012), while two studies indicated that neighbourhood size may also play an important role, with adolescents from smaller towns evidencing higher levels of prosocial behaviour (Albanesi et al., 2007) and empathy (Molconov, 2014) than adolescents from larger, urban towns. It should be noted, however, that of these 11 studies, only two were longitudinal and only one reported significant links between neighbourhood characteristics and adolescents' empathic responding.

In addition, 19 studies provided evidence to suggest that adolescents' prosocial or empathic responding may be impacted by their cultural or racial/ethnic identities. Specifically, research appeared to indicate that adolescents from Caucasian/ European (e.g. 'white') ethnic groups tended to display higher levels of empathy (Padilla-Walker et al., 2009; Wentzel et al., 2007) and prosocial behaviour (Atkins, Hart & Donnelly, 2005; Evans & Smokowski, 2015; Lichter et al., 2002; Voight et al., 2013; Wentzel et al., 2007) than those from African-American (e.g. 'Black') or Native-American ethnic groups. Only two exceptions to this trend were observed; findings from Ji et al. (2006) indicated that adolescents from multi-ethnic backgrounds tended to display higher levels of altruistic behaviour than adolescents from Caucasian-White ethnicities, and longitudinal research by Call et al. (1995) indicated that Caucasian-American adolescents were less likely to exhibit caring behaviours in the home than native-American adolescents. Notably, research by Lozado et al. (2017) indicated that higher levels of racial pride among Black adolescent males was associated with higher levels of prosocial responding. Moreover, while Eisenberg et al (2009) suggested that minority-majority ethnic status was not directly associated with adolescents' prosociality, minority status moderated the effect of cross-religion friendship on prosociality (for girls).

Moreover, evidence from cross-cultural research has suggested that adolescents of US nationality show higher levels of prosocial behaviour than those of Canadian or Hispanic nationalities (Carlo et al 2016; Ji, Prendergast & Perry 2006; Schwartz et al., 2008). Outside of the US, Spanish adolescents were observed to show higher levels of empathy (Estevez et al., 2016) and prosocial behaviour (Kumru et al., 2012) than adolescents from either Turkey or Mexico. Additionally, Mesurado et al. (2014) reported that Argentinian adolescents displayed higher levels of empathy and prosocial behaviour than adolescents from Spain or Colombia, however, Spanish adolescents were found to show higher levels of empathy and

prosocial behaviour than Colombian adolescents. Furthermore, Busch and Hoper (2011) noted that prosocial responding was higher in Cameroonian, compared with German, adolescents. Other research by Carlo et al. (2016) indicated that biculturalism was positively associated with prosocial responding, while Brittain et al. (2013) reported that cultural (e.g. Mexican-American) values were positively associated with dire, compliant, anonymous, emotional, and public prosocial responding, but were negatively associated with altruistic behaviours. Law and Shek (2011) also found that cultural beliefs were linked to higher levels of prosocial behaviour in Chinese adolescents. Similarly, Jessor and Turbin (2014) observed that culture moderated the relationship between other contextual protective/risk factors and prosocial responding in adolescents from the US and China.

3.2.10 Media Exposure

A total of 14 papers reported on the significant relationship between media (television, social media, computer & video game) and empathy/prosocial responding in adolescents. A small number (n=7) of correlational and longitudinal research indicated that exposure to media violence is associated with both lower prosocial behaviour (Gentille et al., 2009; Krahe & Moller, 2011; Padilla-Walker et al., 2015b) and empathy (Gentile et al., 2009; Krahe & Moller, 2010; Siyez & Baran, 2017; Vossen et al., 2017; Wei, 2007). Conversely, exposure to prosocial media content appears to be positively associated with helping, cooperating, sharing and empathy (Gentile et al., 2009; Siyez & Baran, 2017). Crucially, Ferguson (2011) did not observe any direct relationship between video game violence and prosocial responding, but did find that adolescents whose parents were more involved in gaming, and who also frequently played action games, showed higher levels of prosocial responding.

Other contrasting evidence also emerged in relation to the relationship between empathy/prosocial responding and the frequency of media use. Namely, while some findings (n=3 correlational studies; n=3 longitudinal studies) appeared to suggest that length of time spent watching television or playing video games was negatively associated with prosocial responding (Chowhan & Stewart, 2007; Gentile et al., 2009; Padilla-Walker et al., 2015b), other research showed that childhood use of social media, frequent online interactions with friends, and length of time using computers were positively related to adolescents' empathic and prosocial responding (Cao & Lin, 2015; Vossen & Vaulkenburg, 2016; Wei, 2007). Similarly, parental use of social media, technological knowledge and active monitoring of

child social media use also appeared to be positively linked with prosocial responding (Coyne et al., 2010; 2013; Ferguson, 2011) and, over time, with affective empathy (Padilla-Walker et al., 2016).

3.2.11 Sports, Religion & Other Group Membership

Research also indicated a significant association between adolescents' involvement in sport, religious affiliation and other club membership, and their engagement in prosocial activity. In particular, one longitudinal (Linver, Roth & Brooks-Gunn, 2009) and three correlational (Albanesi et al., 2007; Carreres et al., 2012; Michaelson et al., 2014) studies indicated that belonging to a sports team was associated with greater prosocial responding among adolescents. Three other correlational (Kavussanu, 2006; Kavussanu et al., 2006; Rutten et al., 2007, 2008) and two longitudinal (Bruner et al., 2011; Sage & Kavussanu 2008) research studies also suggested that specific aspects of the team environment, such as in-group affect, coach relational support, socio-moral team atmosphere or motivational team climate, are positively linked to adolescents' prosocial responding. However, it is important to note that although Rutten (2007) observed a significant relationship between the team environment and male adolescents' prosocial behaviour on the playing field – no association was found with their off-field prosocial responding. Additionally, Kuvussanu (2006) also found that the length of time adolescents spent in a team was negatively correlated with their prosocial responding. Furthermore, only one study (Chowhan & Stewart 2007) reported a link between prosocial behaviour and participation in non-team sports; although, this study did observe that participation in both organised sport and unorganised physical activity was linked with greater prosocial responding over time. Similarly, only one study reported a significant association between any aspect of the sporting context and adolescents' empathic responding (Ettekel et al., 2016). Notably, this research reported a positive link between team motivational climate and affective empathy only.

Fifteen other studies also identified religiosity as an important correlate of adolescents' empathic and prosocial responding. In general, adolescents who reported high spiritual beliefs or religious orientation showed higher levels of prosociality (Albanesi et al., 2007; Evans & Smokowski, 2015; Eisenberg et al., 2011; Furrow, King & White, 2004; Hardy & Carlo, 2005; Ji et al., 2006; Krauss et al., 2014; Lichter et al., 2002; Linver et al., 2009; Markstrom et al., 2010; Michaelson et al., 2014; O'Brien & Kuffmann, 2013; Ramey et al., 2017). However, of this research only two studies (Lichter et al., 2002; Linver et al.,

2009) were longitudinal. Additionally, it should be noted that the Hardy and Carlo (2005) study observed that religiosity was associated with higher altruistic, complaint and anonymous prosocial behaviour, but was not related to adolescents' dire, public or emotional responding. Moreover, only three studies reported a positive link between religiosity or religious commitment and empathy (Francis et al., 2012; Hardy et al., 2012; Markstrom et al., 2010).

Furthermore, a number of articles (n=10) noted that membership in other clubs/groups also appears to be positively associated with adolescents' empathic/prosocial responding. In particular, Carreres et al. (2012) found evidence to suggest that although youth involvement in sports is associated with greater prosocial responding, youths that are involved in sports *and* other group activity appear to show the highest level of prosocial behaviours. Similarly, other research shows that members of volunteering, music, cultural, and other extra-curricular groups (e.g. girl guides, after school clubs), show higher levels of prosocial engagement than non-members (Albanesi et al., 2007; Chou 1999; Krauss et al. ,2014; O'Brien & Kuffmann, 2013; Schwartz et al., 2013). Furthermore, three longitudinal research studies provided further evidence of a link between club membership/involvement in activities and greater prosocial responding (Atkins et al., 2005; Chowhan & Stewart 2007; Linver et al. 2009). Notably, Ramey et al. (2017) proposed that it is youth's level of psychological engagement with the activities that is associated with greater levels of prosocial responding, while Schwartz et al. (2013) argued that it is the quality of the adolescent-mentor relationship. Crucially, no research study reported a link between empathy and club involvement.

3.2.12 Victimisation and Aggression

Overall, 26 studies (Bandura et al., 2003; Bruner et al., 2014; Carlo et al., 2012; Coyne et al., 2011; Hardy et al., 2015; Harper et al., 2016; Jaureguizar et al., 2013; Jessor & Turbin, 2014; Johnston & Krettenauer, 2011; Kavussanu, 2006; Kavussanu et al., 2006; Kerestes, 2006; Krahe & Moller, 2011; Krahe & Moller, 2010; Krauss et al., 2014; Laible et al., 2014; Ma et al., 1996; Padilla-Walker et al., 2012; 2015a; 2016; Pattiselanno et al., 2015; Pozzoli & Gini, 2010; Sage & Kuvussanu, 2008; Schwartz et al., 2007; Stams et al 2008; Wyatt & Carlo, 2002; Wright, 2014) reported that aggression and antisocial or delinquent behaviours are associated with lower prosocial responding. Additionally, 17 studies provided evidence of a negative relationship between aggression, bullying or delinqueny and adolescents' empathic responding (Anastacio et al., 2016; Barry et al., 2014; Carlo et al.,

2012; Estevez et al., 2016; Euler et al., 2017; Gini et al., 2007; Harper et al., 2014; Krahe & Moller, 2010; Laible et al., 2014; Llorca-Mestre et al., 2017; Lopez et al., 2008; Mayberry & Espelage, 2007; Padilla et al., 2016; Rieffe & Camodeca, 2016; Topcu & Erdur-Baker, 2012; Van Der Graff et al., 2012; You et al., 2015). However, the majority of this research relies on correlational evidence, with prosocial behaviour or empathy assessed at one time point only. Furthermore, it is important to note that, Machackova et al. (2010) found that higher aggressive beliefs were positively associated with greater online prosocial defending behaviours, while longitudinal research by Barchia and Bussey (2011) and McMahon et al. (2012) also suggested that aggressive beliefs were positively associated with higher defending and helping behaviours. Similarly, Gini et al. (2008) reported that greater cognitive empathy was negatively associated with active defending. In addition, Jaureguizar et al. (2013) noted that engagement in criminally delinquent behaviours was also associated with greater prosocial responding toward parents

Interestingly, conflicting findings were found in relation to the effect of previous victimisation, discrimination or risk on adolescents' prosocial responding. For example, longitudinal research by Barcia and Bussey (2011) reported that previous victimisation was positively associated with defending behaviours, whereas Cao and Lin (2015) only observed a positive relationship between victimisation and defending in girls. Likewise, McMahon's et al (2012) longitudinal research also found evidence to suggest that exposure to violence in early life has a negative relationship with adolescents' prosocial responding, but only for those who also show high levels of impulsivity. Additionally, other longitudinal research noted that although previous discrimination was linked to higher levels of public prosocial responding, it was also found to be negatively related to emotional, altruistic and compliant (for girls only) prosocial behaviour (Davis et al., 2016; Brittain et al., 2016). Moreover, Kerestes (2006) found that adolescent exposure to war and persecution was associated with lower teacher reports of helping and altruism, but was not significantly related to either self or peer reported prosocial responding. Finally, although Lozado et al. (2017) did observe a positive correlation between discrimination experiences and prosocial responding, it is important to note that no significant relationship was found when these factors were entered into a regression model. No study suggested a link between empathy and discrimination/victimisation experiences among adolescents.

3.2.13 Target Characteristics

Finally, the examination of the literature included in this review also revealed that the expression of empathy and prosocial responding among adolescents may be related to certain target/recipient characteristics. For example, research by Albert et al. (2016) indicated that adolescents were more likely to defend targets with intellectual disabilities than other 'typically developing' targets. Similarly, Machackova et al. (2010) observed that adolescents' empathic responding to victims of bullying was significantly linked to their relationship with the victim, while longitudinal evidence from Van Rijeswik et al. (2012) suggested that adolescents appear more likely to help others who they perceive as being 'similar' to themselves. Other research suggested that differences in prosocial responding may be related to the gender of the target/recipient as both correlational and longitudinal research by Eberly and Montemayor (1998; 1999) revealed that adolescents direct higher levels of prosocial behaviours toward their mothers than their fathers. In addition, Jaureguizar et al. (2014) noted differences in adolescents' prosocial responding toward their parents and their teachers. Notably, several other longitudinal studies also found differences in the type of prosocial behaviours directed toward family, friends, and strangers (Fu et al., 2017; Padilla-Walker et al., 2015a; 2015b). Moreover, longitudinal research from Padilla-Walker et al. (2014a) suggested that adolescents' level of prosocial responding is significantly related to their perceptions of the 'cost of responding'.

4. Discussion

The aim of this research was to conduct a systematic review of the published, empirical literature that has previously investigated the social and psychological correlates of empathy and prosocial responding among adolescents. This review employed a rigorous and systematic searching methodology and underwent a thorough quality appraisal, which resulted in the inclusion of 168 independent research articles. Overall, these findings indicated that adolescents' empathy and prosocial responding are associated with a wide variety of individual (e.g. Age, Personality, Self-Efficacy, Self Esteem/Self-Concept, Emotional Regulation, Social Skills, Personal Values, Knowledge, Moral Reasoning & Empathy) and contextual (Gender, Parents/Family, Peers, Schools, Media, Neighbourhood, Culture, Sports, Club Membership, Religion, Target Characteristics, Victimisation, Aggression & Previous Prosocial Tendencies) factors. Thus, this review is beneficial as it provides collective evidence to affirm that adolescents' empathic attitudes and prosocial

behaviours are associated with both socialisation processes and individual differences. These findings have important implications as they suggest that theory, research and policy attempting to generate greater understanding of the expression of empathy and prosocial responding among adolescents, may benefit from exploring this topic from a socio-ecological perspective.

Additionally, when examining the research themes which emerged from this review, several notable trends in the data were apparent. First, the factor which was found to be most consistently related to both adolescents' empathic and prosocial responding was their gender. Typically, this research suggested that female adolescents showed higher levels of empathic and prosocial responding than boys (Carlo et al. 2017; Gentille et al., 2009; 2014; Harper et al. 2014; Miklikowska et al., 2011; Padilla-Walker et al., 2009; Van Lissa et al., 2016), although some research observed inconsistent findings (Barchia & Bussey, 2011; Carlo et al., 2016; Hardy & Carlo, 2005). Nonetheless, throughout this body of research, gender appeared to be analysed as a dichotomous variable, consisting of either 'male' or 'female' sex categories. While one study included assessments of 'gender roles' (Ma, 2005), this research still defined gender identity according to a binary set of traits (e.g. masculinity or femininity). However, researchers now argue that these binary taxonomies, such as male/female or masculine/feminine, fail to capture the complexity of individual gender (Halperin, 2002; Valocchi, 2005). Moreover, despite the volume of longitudinal research (n=37) that included assessments of gender, only 19 of these studies examined the relationship between gender and empathic/prosocial responding over time, while no study appeared to recognise the potential for gender fluidity over time. Thus, further research that acknowledges gender as a non-binary, non-static identity and correspondingly explores its relationship with adolescents' empathic/prosocial attitudes and behaviours over time may be warranted. This type of research may be particularly relevant given the observation that gender not only has a direct relationship with empathy and prosocial responding, but also appears to moderate the relationship between other individual or social factors and adolescents' empathic/prosocial behaviour (see Lichter et al., 2002; Miklikowska, 2011; Smith et al., 2016). Thus, further research in this area would be beneficial as it would help increase understanding about both the direct and indirect relationships that exist between adolescents' gender identity and their engagement in prosocial activity or expression of empathy, which in turn may help inform the development of more targeted policy and intervention strategies.

Furthermore, it is important to note, that while an examination of the data from these included studies appeared to evidence consistent links between adolescents' prosocial responding and numerous social/individual factors, few significant effects were reported in relation to adolescents' empathic responding. For instance, a substantive collection of research indicated that active participation in religion (n=12), sports (n=11) and other club activities (n=8) were positively associated with greater prosocial behaviour in adolescents. However, only four studies showed a significant link between either religion or sports and adolescents' empathic responding, and no research identified a significant link between any form of club membership and empathy. Similarly, out of the multiple (n=35) studies reporting significant relationships between self-efficacy, emotional regulation, self-esteem or self-concept and prosocial responding, only seven studies reported significant relationships between any of these constructs and adolescents' empathic attitudes. Thus, it seems that the relationship between these social and psychological factors and adolescents' empathic attitudes, is more tenuous, or less explored than the link with adolescents' prosocial responding. It is important that research investigates the associations between different individual and social factors, and both adolescents' empathic attitudes and their prosocial behaviour. Future research addressing this issue, would benefit the literature as it would enable greater inferences to be made about which social and psychological factors are associated with both greater empathic attitudes *and* greater prosocial behaviours among young people. This information is essential in order to help inform and guide other experimental research or intervention strategies.

Relatedly, it is also important to comment on the observed relationship between empathy and prosocial responding among adolescents. While only 30 papers in this review were found to include separate assessments of both empathy and prosocial behaviour, the majority of this research evidence a significant, positive relationship between adolescents' empathy and their prosocial responding, both concurrently and over time (Barr & Higgins-D'Alessandro, 2007; Machackova et al., 2016; Mesurado et al., 2014; Paciello et al., 2012; Padilla-Walker et al., 2015b; 2016). This finding has important implications as it provides further support to the existing theoretical and research literature which claims that there is a strong, cyclical relationship between empathy and prosocial responding (Segal, 2011; Verplanken & Holland, 2002; Youniss & Yates, 1997). Nonetheless, while findings from these papers suggested that empathic and prosocial responding are positively linked, other evidence also emerged to suggest that the nature of the relationship between empathy and

prosocial responding may depend on which aspect of empathy (e.g. cognitive or affective) or which type of prosocial response is being assessed. For example, research indicated that affective empathy, but not cognitive empathy, was associated with greater defending (Gini et al., 2007) and compliant (Laible et al., 2014) prosocial behaviours. Similarly, some evidence emerged to suggest that cognitive (Davis et al., 2018) and affective (Carlo et al., 2007) empathy may be positively associated with dire, emotional and anonymous prosocial tendencies, but negatively associated with more altruistic forms of prosocial responding. Hence, these findings suggest that future research should not only include assessments of both empathy and prosocial behaviour, but also give further consideration to how the operationalisation of these constructs may influence the direction or strength of the relationship observed.

Notably, when examining how empathy and prosocial responding were operationalised by the articles included in this review, large discrepancies across these 168 individual research studies were observed (see Appendix B). In particular, although 131 articles reported how the expression of prosocial responding among adolescents is significantly related to various individual and social factors, the *type* of prosocial behaviour or response assessed, varied greatly between studies. Some research reported on adolescents' general 'prosociality' (Alessandri et al., 2009; Llorca et al., 2008), others reported on adolescents' engagement in specific (e.g. volunteering, defending, helping, comforting) activities (Barchia & Bussey, 2011; Ferguson et al., 2011), while others assessed adolescents tendencies to engage in different types (e.g. dire, emotional, public, altruistic etc) of prosocial responding (Carlo et al., 2016; Hardy & Carlo, 2005). Similarly, different operationalisations in adolescents' empathic responding were also apparent, with some researchers only including measures of affective (Padilla-Walker et al., 2014b; 2015b) *or* cognitive (Smith et al., 2016) empathy. Crucially, preliminary evidence from a number of articles reviewed here suggested that the manner in which empathy and prosocial responding are operationalised may also affect the type of relationship that is observed between them and various social/individual factors (see Barry et al., 2017; Brittain et al., 2013; Eisenberg et al., 2009; Hardy & Carlo, 2005; Perenc et al., 2015). For example, Carlo et al. (2007) evidenced that adolescents' engagement in moral conversations with parents was associated with higher affective empathy, as well as greater dire, public and anonymous prosocial responding, but lower altruistic responding. However, research examining the link between these various social/individual predictors and different forms of empathy and prosocial behaviour appears

to be limited. Thus, greater consideration to how empathy and prosocial responding are defined and measured across these separate research studies is warranted, and future research may benefit from further exploring how these various different social/psychological factors relate to these various different aspects of adolescents' empathic and prosocial responding.

Furthermore, another important finding to emerge from this review was the observation that adolescents' empathy and prosocial responding appears to vary, depending on the situational context, or characteristics of the target (Fu et al., 2017; Jaureguizar et al., 2014; Padilla-Walker et al., 2015a; 2015b). In particular, a small body of evidence suggested that adolescents may show different levels of empathic and prosocial responding depending on their relationship with (e.g. friend, family, stranger), or perceptions of (e.g. similarity), the target, as well as other situational constraints (e.g., urgency of responding; cost of responding). This is an important finding as it suggests that adolescents' empathic and prosocial responding may be relational; in other words, they may be directed toward particular people, in particular situations (Van Rijeswik et al. 2016). However, it is important to note that of the 168 studies included in this review, only 10 studies investigated this link. Therefore, in order to understand more about why empathy might be shown to some people and not others, or why adolescents may engage in prosocial action in one context but not in another, further research examining adolescents' empathic and prosocial responding, across multiple different contexts and toward different relational targets, is needed.

Finally, when discussing the implications or generalisability of these reviewed research findings it is also important to comment on the cultural representativeness of the data collected. In total, samples from across 36 different nationalities were represented in the findings of these individual research papers. However, although the number of countries represented in this overall research is large, approximately 60% of this research represents individuals from four countries (US, Italy, Netherlands and China), with almost 40% of research coming from the United States alone. Consideration about the predominance of research from these countries may be important, given the emerging findings which suggested that adolescents' empathic and prosocial responding appears to vary across different countries and regions (Busch & Hofer, 2011; Ji et al., 2006; Mesurado et al., 2014). Additionally, it is important to acknowledge, that while the majority of research reviewed here collected information about the ethnic/racial identity of the participants sampled, few studies actively examined how, or if, empathic/prosocial responding was associated with adolescents' ethnic or racial identity. Hence, more research may be needed in order to

generate greater understanding of the similarities, or differences, in the expression of empathy and prosocial behaviours among adolescents from different countries, ethnicities or cultures.

4.1 Implications for Research, Policy & Practice

These review findings have important implications for educators, youth organisations, policy makers, researchers, and other bodies/organisations who are interested in developing a greater understanding of the expression of empathy and prosocial responding among adolescents. The findings from this review are important as they highlight how adolescents' empathic attitudes and behaviours are associated with numerous different social/individual factors and provide evidence in support of the social-ecological approach (Bronfenbrenner, 1992).. Specifically, findings suggest that the expression of empathy and prosocial behaviour among adolescents is related to their exposure to key environmental processes (e.g. parental modelling, extra-curricular activities, school/neighbourhood climate), as well as their individual skills and values (e.g. self-efficacy beliefs, values, emotion regulation). These findings also highlight a number of limitations within the current empathy/prosocial behaviour literature base and provide practical recommendations for future research initiatives. In particular, more research is needed to further understand how and why adolescents' empathy and prosocial responding may vary across certain social/cultural contexts, or toward different social targets. Additionally, it is important that future research recognises the importance of providing clear, standardised operationalisations of both empathy and prosocial behaviour, in order to allow for greater comparison of effects across studies and greater understanding of the relationship between different social/individual predictors and different forms of empathy and prosocial behaviours. By strengthening the knowledge base and providing more tangible, empirical evidence as to the nature of empathic and prosocial expression among adolescents, research can help inform more focused policy and intervention strategies.

4.2 Strengths & Limitations

This review is among the first to examine the existing evidence on the psychological and social correlates of empathy and prosocial behaviour in adolescents, and advances understanding in this area by systematically collating and comparing the available research findings. These findings provide important learning opportunities for future research and intervention in the area of youth empathy and prosocial responding. However, there are a

number of limitations associated with this review, which are important to recognise. First, article searches were limited to five databases. Although these databases were identified as the most relevant for the topic, it is important to acknowledge that they may not have exhausted all the available research on the reviewed topic. Additionally, it should be noted that due to the volume of research in this area, this search was limited to published articles. Therefore, it is important to acknowledge that the articles reviewed here may be subject to some form of publication bias (Fellicitas-Muller et al., 2013), or that other topically relevant articles may not have been included in this review. However, this practice of limiting review searches to published literature only, is commonly adopted in numerous other systematic reviews (see Berzigotti et al., 2014; Collier et al., 2013; Dennison et al., 2009), as a method of controlling the volume of research reviewed or ensuring the quality of research reported.

Furthermore, it is also important to acknowledge, that this paper provides a narrative overview of current quantitative research only. While reviewing information from both qualitative and quantitative research can be beneficial, it is also recognised that synthesising evidence from both qualitative and quantitative research in one review can be difficult (Greenwood et al., 2014). A decision to focus on quantitative data was made in order shed light on the social/psychological relationships that are *significantly* (statistically) related to empathy and/or prosocial responding among adolescents. Nonetheless, further reviews examining the qualitative literature in this area may be advantageous, and may help proffer explanations for some of the conflicting or mixed findings that were observed. Finally, while this narrative synthesis is beneficial in highlighting consistencies and inconsistencies within the current research base, and identifying areas for future research, it is not possible to make inferences about the direction of the relationship between these social/psychological factors and adolescents empathic/prosocial responding, due to the observational nature of the research reviewed. While a review of the experimental/intervention literature in this area (see Malti et al., 2016) is also advantageous, given the broad and multifaceted nature of the research question, it was beyond the scope of this review to include both observational and experimental/intervention research.

4.3 Conclusion

In conclusion, this systematic review of the literature indicates that adolescents' empathy and prosocial behaviours are associated with a large number of individual and social factors. However, limitations with how empathy and prosocial responding have been

operationalised make the comparison of findings across studies difficult. Overall, insight into the factors that are associated with greater empathic and prosocial responding in adolescents, across different situational and cultural contexts, or toward different targets, is limited. Further research that addresses these limitations and expands knowledge in this area is needed.

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