HOW THE QUALITY OF PARENTAL ATTACHMENT, PARENTAL CONTROL AND MONITORING INFLUENCES ADOLESCENT SECRECY

By

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Abstract

The importance of adolescent disclosure and adolescent secrecy has been extensively demonstrated in existing literature (Jäggi et al., 2016; Solís et al., 2015; Frijns et al., 2010; Keijsers et al., 2009; Kerr & Stattin, 2000). Majority of research (Solís et al., 2015; Laird et al., 2013; Keijser et al., 2010) has mostly focused on exploring Adolescent disclosure and its relevance to the strictness of parental control and parental monitoring. Previous research has found that overall greater disclosure and less secret-keeping between parent and child are associated with greater psychosocial adjustment and better family relationships (Solís et al., 2015; Frijns & Finkenauer, 2009; Laird et al., 2013). Although researchers have significantly explored adolescent 'disclosure' and concluded that adolescent 'secrecy' is a separate, distinct construct (Finkenauer et al., 2002; Frijns et al., 2010), there has been very little research on adolescent 'secrecy' or 'secret-keeping'. The present study addresses the three most influential predictors of adolescent development specifically, parental attachment, parental control, parental monitoring and their impact on adolescent secret-keeping. Adolescents' living situations (living with parents or away from parents) were also explored in relevance to secret-keeping. Participants (*N* = 765, 57.6% male, 42.3% female) in the study were adolescents aged 16 to 19 years who completed an online questionnaire assessing their parent-child attachment, the strictness of parental control and parental monitoring, as well as how frequently they kept information hidden or private from their parents (secrets). Findings indicate that the quality of parental attachment predicts the frequency of adolescent secret-keeping. Particularly, adolescents who are more securely attached are more likely to keep secrets from their parents. Further, parental monitoring predicts adolescent secret-keeping, but parental control is unlikely to. Female adolescents who lived away from home were more likely to keep secrets from their parents. These findings demonstrate the significant role the parent and environment have in contributing to adolescents' likelihood to keep secrets or divulge information.

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Attestation of Authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

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Ethics Approval

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Introduction

To date, there are around 1.6 million adolescents, representing about 33% of the population in New Zealand (Child and Youth Wellbeing NZ, 2019). Adolescence is a transitional period that occupies the majority of an individual's life. It is the phase between childhood and adulthood where the individual belongs to the age group of 10 to 20 years old (Sawyer et al., 2018). Adolescents are in a period when they may not identify as a 'child' or 'adult' (Sawyer et al., 2018). Adolescence is the critical phase of biological, cognitive, social, and physical growth where the individual undergoes major role transitions and many first experiences (Arnett, 2010; Jäggi et al., 2016). For instance, during adolescence, individuals will begin to consider future careers, explore romantic relationships, new feelings, self-identity, form close friendships, strive for independence from their parents, engage in risk-taking behaviours, and begin to experience hormonal changes and physical growth (Richter, 2006). It is the time for the formation of personal preferences, values, beliefs, different interests, activities, and roles (Sawyer et al., 2018). As a result, researchers have focused on adolescence and various factors that influence or contribute to significant social and behavioural changes during this time (Kerr & Stattin, 2000; Smetana, 2008; Laird et al., 2013; Tilton-Weaver, 2014; Solís et al., 2015).

During adolescence, the influence of parenting largely affects and shapes the individual's behaviour going into adulthood (Hoskins, 2014). The role of parenting substantially contributes to adolescents' outcomes, such as greater educational outcomes, peer and romantic relationships, higher aspirations, and greater emotional regulation (Steinberg, 2001; Morris et al., 2021). Parents who are supportive and are more involved with their children may positively shape their child's emotional, social, and behavioural development, whereas neglectful and inconsistent parenting might result in a challenging adolescence defined by behavioural issues, mental health problems, substance and alcohol abuse, delinquency, and anger outbursts (Hoskins, 2014).

Influence of Parenting Styles on Adolescent Secret-keeping

According to Baumrind (1966), a developmental psychologist best known for the exploration of parenting styles and their outcomes, parenting is a complex activity involving many different behaviours that work individually and together to affect the behaviour of children. From the perspective of Baumrind (1966), “Parenting behaviours and parenting styles influence the development and maintenance of adolescents' problematic behaviours and outcomes” (Baumrind, 1966, p. 897). The root or result of many social, emotional, and behavioural problems in adulthood stems from the adolescent’s family environment, specifically the individual’s parents (Hoskins, 2014). Research suggests that the family environment provides the basis for children’s behaviour. It is where children’s behaviour is learned, encouraged, manifested, and suppressed (Dishion & Patterson, 2006; Hoskins, 2014).

Over many decades, the parental role has been primarily to prepare children for adulthood through setting rules and discipline (parental control) (Hoskins, 2014). Specifically, through adolescence, externalising behaviours such as underage drinking, deviant peer affiliation, drug use, and aggressive behaviours begin to arise (Hoskins, 2014). Based on the dimension of parental control, Baumrind (1966) established four main parenting styles namely authoritative, authoritarian, permissive, and neglectful/uninvolved parenting. Parenting styles are distinguished by high or low responsiveness and high or low control/demandingness (Baumrind, 1996). Parental responsiveness is evaluated by parental warmth, support, and involvement towards the child (Baumrind, 1996). Where parental control is determined by strictness and conformity of rules, and discipline to the parent’s expectations (Baumrind, 1996). Authoritative parents have high levels of both responsiveness and demandingness to their children’s needs, often responding with supportive behaviours rather than harsh behaviours (Baumrind, 1966). Authoritative parents have clear rules and expectations of their children’s behaviour and are more likely to follow consistent rules and reasoning to help their children understand what is expected of them. They provide a nurturing and supportive environment,

fostering a healthy and strong parent-child relationship (Baumrind, 1966). Research has suggested this parenting style results in more positive adolescent outcomes and well-being, such as low levels of depression and high levels of school performance (Steinberg, 2000; Gonzalez et al., 2002; Hoskins, 2014). Adolescents who have been brought up with an authoritative parenting approach are less likely to engage in externalising behaviours, specifically drug and alcohol use (Steinberg, 2000; Gonzalez et al., 2002; Hoskins, 2014). Furthermore, adolescents with either one authoritative parent (mother or father) or both authoritative parents reported greater well-being, higher life satisfaction, and higher self-esteem than adolescents with no authoritative parent (Milevsky et al., 2008; Hoskins, 2014). Authoritative parents also exhibit higher levels of parental monitoring (Luyckx et al., 2011). As a result, adolescents who had authoritative parents had the best behavioural outcomes; specifically, they were less likely to engage in smoking and drinking behaviours compared to adolescents with other parenting styles (Jackson et al., 1998; Jackson, 2002; Huver et al., 2007).

The second parenting style Baumrind (1966) described is authoritarian parenting, characterised by low responsiveness and high demandingness. Authoritarian parents place great emphasis on obedience and conformity, expecting children to conform to rules and restrictions without explanation (Baumrind, 1966). They engage in strict control, discourage open communication, and have low trust and engagement in their children's activities and behaviours (Hoskins, 2014). Children with authoritarian parents tend to have low levels of self-esteem, poor social skills, and high levels of depression (Milevsky et al., 2008; Hoskins, 2014). Additionally, adolescents with authoritarian parents are associated with more externalising or problematic behaviours such as delinquency, substance and alcohol use, risky cyber behaviours, and problematic eating behaviours (Baumrind, 1991; Hoeve et al., 2008; Romm & Metzger, 2021).

The third parenting style is permissive parenting, characterised by high levels of responsiveness and low levels of control/demandingness (Baumrind, 1966). Permissive parents tend to not set rules and or behavioural expectations for adolescents; they avoid using discipline to correct bad behaviour and are lenient towards their children's behaviour (Baumrind, 1991; Hoeve et al., 2008; Romm & Metzger, 2021). They are likely to allow their children to regulate their activities and behaviour instead of enforcing limits or consequences (Baumrind, 1991; Hoeve et al., 2008; Romm & Metzger, 2021). Permissive parents are likely to monitor their children until their children reach adolescence, where there is a steep decline in monitoring, often resulting in an increase in problematic behaviour during adolescence (Luyckx et al., 2011). Adolescents with permissive parents report a higher frequency of substance use and school misconduct once their parents stop monitoring them (Querido et al., 2002).

Lastly, neglectful or uninvolved parenting defined as low in responsiveness and demandingness has been suggested to have the greatest negative impact on adolescent outcomes (Hoskins, 2014). Neglectful/uninvolved parents fail to monitor and respond to their children's needs and necessities, tend to not encourage open communication or self-regulation, and are overall not involved in childrearing (Baumrind et al., 2010). Therefore, the parent-adolescent relationship is largely non-existent, leading adolescents of neglectful/uninvolved parents to frequently engage in delinquent behaviours such as vandalism, theft, assault, and rape (Hoeve et al., 2009; Hoskins, 2014). In addition, adolescents with neglectful/uninvolved parents drank, smoked, and used drugs twice as much as adolescents who had authoritative parents (Adalbjarnardottir & Hafsteinsson, 2001; Hoskins, 2014). Adolescents who had either one or both parents who were neglectful/uninvolved had lower self-esteem and more depressive symptoms than adolescents without a neglectful/uninvolved parent (Milevsky et al., 2008; Hoskins, 2014). In particular, if the mother was the neglectful/uninvolved parent, adolescent outcomes were significantly worse than if the father was uninvolved (Simons & Conger, 2007;

Hoskins, 2014). Overall, adolescents who have neglectful/uninvolved parents tend to have more problematic and negative outcomes in all emotional, behavioural, and social aspects.

The Importance of Open Communication

Parent-adolescent communication involves verbal and non-verbal expressions of ideas, feelings, thoughts, and information between parent and adolescent (Noller & Bagi, 1985). Parent-adolescent communication predicts parental knowledge about their adolescents' day-to-day activities (Bumpus & Hill, 2008). Parents who regularly ask and show interest and engagement regarding what the adolescent does in their day-to-day life are more likely to have adolescents who get into the habit of voluntarily disclosing information without the need for parents to demand information (Bumpus & Hill, 2008).

Out of the various influential factors contributing to adolescent behaviours, the importance of communication between parents and children is heavily stressed due to its impact on adolescent outcomes. To illustrate, good parent-child communication leads to numerous positive social, cognitive and behavioural adolescent outcomes, such as greater relationship quality between parent and child, enhanced adolescent ability to better manage social relationships, greater social skills, higher self-esteem, the ability to self-regulate emotions, better academic performance, and are less likely to engage in problematic behaviours (excessive drinking, smoking, and drug use) (Keijsers & Poulin, 2013). Adolescents who may not engage in frequent communication with their parents or have parents who may not encourage or promote open communication are more likely to have adolescents who are less likely to frequently disclose and instead might withhold information, keeping more secrets (Laird et al., 2013; Baudat et al., 2020).

One key behaviour facilitated by positive communication between parents and adolescents which results in positive outcomes for adolescents is adolescent disclosure (Cumsille et al., 2010; Padilla-Walker et al., 2018; Dykstra et al., 2020). Adolescent disclosure

refers to the process of communication where adolescents share their thoughts, experiences, emotions, and relevant personal information with their parents, friends, and individuals who are important to them (Kerr & Stattin, 2000; Stattin & Kerr, 2000). Due to adolescents' increasing need and want for independence and autonomy from their parents and spending less time under parental supervision, voluntary disclosure from the adolescent becomes particularly important for the parent to know how the adolescent spends their unsupervised leisure time (Keijsers et al., 2010). In order for parents to maintain their parental role in shaping the adolescent's behaviours, the reliance on communication is greater than during childhood (Sillars et al., 2005). To illustrate, research has demonstrated that frequent adolescent disclosure leads to greater academic, social, and emotional outcomes (Darling et al., 2006). Specifically, adolescents who share information about their day-to-day whereabouts, activities, and connections with their parents tend to report lower levels of delinquency, school misbehaviour, depressed mood, and drug and alcohol use (Darling et al., 2006). Rather, they show higher levels of self-esteem, a balanced mood, better school performance, and are less likely to be involved with peers who engage in problematic behaviours (Darling et al., 2006).

Adolescent disclosure is largely dependent on the individual's relationship and dynamics with their family and friends (Smetana et al., 2006; Keijsers et al., 2010). If the adolescent shares a trusting relationship with the other individual, they are more likely to disclose information (Smetana et al., 2006; Keijsers et al., 2010). For instance, Rudy and colleagues (2022) found that adolescents who disclosed more predicted greater parent-adolescent closeness. Furthermore, adolescents who have authoritative parents are more likely to fully disclose to their parents, even on sensitive topics that raise disagreements between parent and child (Darling et al., 2006).

Aside from adolescent disclosure significantly contributing to the likelihood of adolescent outcomes, adolescent disclosure is the most significant contributor to parental knowledge. Parental knowledge refers to information the parent has about their children's whereabouts and

activities, especially when the child is not at home and cannot be supervised (Kerr & Stattin, 2000; Stattin & Kerr, 2000). Adolescents disclosure is the primary source of parental knowledge, allowing the parent to keep track of the adolescent's activities and behaviour (Marshall et al., 2005). Parental knowledge is the most powerful predictor of adolescent adjustment (i.e., an individual's ability to adapt and navigate challenges and new experiences that occur with the transition from childhood to adolescence) (Stattin & Kerr, 2000; Jäggi et al., 2016). Research has suggested that adolescents who openly communicate and share personal information may be less vulnerable to negative outcomes and problematic behaviours (Frijns et al., 2010). Hence, adolescents who frequently disclose may be less susceptible to delinquent behaviours and are more likely to have positive adjustment outcomes (such as greater academic scores, peer relationships, and sports achievements) (Keijsers et al., 2010; Frijns et al., 2010). Moreover, adolescent disclosure allows parents to effectively offer support and address misbehaviour or problems the adolescent is facing, ensuring misbehaviour is restricted and kept under control (Frijns et al., 2010).

Distinction between Adolescent 'Disclosure' and 'Secrecy'

Extensive research has proposed that adolescent disclosure encompasses two separate constructs, disclosure and secrecy, which use distinct cognitive processes (Frijns et al., 2010). To explain, adolescent "secrecy" or "secret-keeping" is when the adolescent is unlikely to share information with anyone (parents or peers). The adolescent chooses to withhold information or keep aspects such as thoughts, emotions, and experiences private from close individuals in their lives (Finkenauer et al., 2002). This requires extra effort from the adolescent to consciously and consistently hide or conceal information from their parents and or peers. It is harder to achieve than adolescent 'disclosure', requiring the adolescent to use their judgement to perceive what information to keep secret, who to tell, and the appropriate time to tell (Frijns et al., 2010; Jäggi et al., 2016). The difference between adolescent secrecy and adolescent

disclosure is when an adolescent discloses, this behaviour is voluntarily and the adolescent is willing to share their thoughts, emotions, experiences, and relevant information (whereabouts, personal life, and connections) (Jäggi et al., 2016).

Adolescents tend to frequently keep around two secrets to themselves per day and two secrets from their parents over two weeks (Smetana et al., 2010; Lavoie et al., 2017; Dykstra et al., 2020). Research has demonstrated that adolescents report discussing topics like schoolwork, social issues, and future plans with their parents; however, they tend to avoid discussing issues that are personal, like dating (Youniss & Smollar, 1985; Noller & Callan, 1990; Smetana et al., 2006). There are four main topics that adolescents tend to either keep secret or disclose to parents, including personal issues (e.g., preferences, romantic life, friendships), moral issues (e.g., fairness and others' welfare), conventional issues (e.g., agreement on norms and rules), and prudential issues (e.g., regarding the adolescent's safety, health, or comfort) (Smetana et al., 2006; Darling et al., 2006; Cumsille et al., 2010; Yeo, 2021).

The likelihood of adolescents disclosing information or keeping secrets is greatly dependent on a wide range of factors that include gender, peer influence, living environment, cultural and societal norms, and family dynamics (Stattin & Kerr, 2000; Smetana et al., 2006; Keijsers et al., 2010). Keeping secrets, as suggested by past studies (Smetana et al., 2006; Keijsers et al., 2009; Laird et al., 2013; Solís et al., 2015; Dykstra et al., 2020), may vary depending on the adolescent's age and gender. Females, compared to males, are more likely to disclose to their mothers than males are to disclose to either parent (mother or father) (Keijsers et al., 2010; Rose et al., 2012). This could be due to personality and gender characteristics, where females are more talkative and prefer to express their stress and or problems verbally (Rose et al., 2012). Finkenauer and colleagues (2002) found that early adolescents and late adolescents (i.e., 12 to 13-year-olds and 16 to 18-year-olds), who frequently kept more secrets, had poorer parent-child relationships and an increased depressive mood. Moreover, adolescent girls are more willing to communicate with their mothers than fathers, whereas adolescent boys

reported communicating and sharing information equally with both parents (Noller & Callan, 1990; Smetana et al., 2006). Previous studies (Stattin & Kerr, 2000; Keijsers et al., 2009; Finkenauer & Meeus, 2010; Padilla-Walker et al., 2018) have suggested that girls, in comparison to boys, are more likely to divulge information and are more likely to keep fewer secrets as they are less likely to engage in delinquent behaviour and thus are less likely to need to conceal, lie or hide information from their parents. Parents are also more likely to grant greater autonomy to girls, especially if they are the first-born daughters, than they are to boys, increasing girls' likelihood to share information with their parents than boys tend to (Bumpus et al., 2001; Padilla-Walker et al., 2018). To illustrate, girls who are the firstborn in the family tend to be given higher levels of decision-making input; however, this is not the same with sons, especially if they are the second-born child (Bumpus et al., 2001). Parents are likely to grant greater autonomy to their daughters but not their sons as a result of boys being more likely to engage in problematic behaviour in adolescence, with generally higher levels of problematic behaviour than girls (Bumpus et al., 2001).

As adolescents grow older, they become less dependent on their parents and rely more on their peers. They begin to keep more secrets, likely due to increased engagement in "problematic behaviour," romantic relationships, and behaviours that parents tend to disapprove of (Smetana et al., 2010; Rote & Smetana, 2015; Dykstra et al., 2020). The process of adolescents becoming less dependent on their parents is a developmental individuation process known as emotional autonomy (Finkenauer et al., 2002). Emotional autonomy refers to an individual's ability to independently interpret, understand, regulate, and express their emotions. It is a distinct construct and crucial process of psychological development that individuals gradually develop over adolescence to adulthood (Finkenauer et al., 2002). As the adolescent learns to keep secrets, they are learning to separate and differentiate between information that should be kept secret and information that should be shared (Finkenauer et al., 2002). In order to keep secrets, the child has to understand that they possess information that other individuals

are unaware of unless they tell them (Finkenauer et al., 2002). Finkenauer and colleagues (2002) have examined how adolescent secrecy contributes to emotional autonomy. They found that when adolescents are actively keeping a secret, they establish a “metaphoric boundary” between themselves and their parents (Petronio, 1991; Finkenauer et al., 2002). This boundary is regulated when the adolescent reveals or conceals information from their parents. When engaging in secret keeping behaviour, adolescents are able to feel a sense of independence and self-determination, as well as an opportunity to break free from parental monitoring and control and establish the privacy that they seek in adolescence (Margolis, 1966; Finkenauer et al., 2002).

Generally, adolescents tend to secret-keep or omit important details or information due to fear of the negative consequences, reactions, emotional concerns, and criticism they may face, as well as the disapproving reactions their parents may express if they share personal decisions, choices, and beliefs (Padilla-Walker et al., 2018; Jäggi et al., 2016; Cumsille et al., 2010). For example, if they have received a bad grade on an exam, they might consider the negative reactions their parents may have to their bad grade and how this result might make their parents feel. This may influence their decision to share this information with their parents by taking into consideration their emotions before deciding to divulge or keep this information secret.

Furthermore, the association between secrecy and adolescent adjustment has been thoroughly examined, where adolescents who are highly secretive experience more psychosocial problems than adolescents who are less secretive (Finkenauer et al., 2002). This suggests that adolescents who bottle up their emotions and problems and or tend to keep their personal activities private from their parents might have trouble self-regulating and expressing their emotions. However, it is crucial that these problems and behaviours are shared with their parents so that parents can appropriately support the adolescent when needed.

Additionally, adolescents who report high levels of communication are more likely to have positive adjustments over time (such as academic success, greater social relationships, and the ability to appropriately control their emotions and mood) and overall are more likely to have consistent, secure parent-child attachment (Crouter et al., 2005; Frijns et al., 2005; Marshall et al., 2005).

Causes of Adolescent Secret-keeping

Previous research (Wuyts et al., 2018; Baudat et al., 2022) has examined reasons why adolescents share certain information with their parents, which are based on internal and external reasons. In particular, external factors include parental authority, control, and monitoring. As adolescents get older, they begin to keep more secrets from their parents. Specifically when they begin to fulfil curiosity and engage in behaviours and new experiences such as alcohol consumption, risky cyber activities, problematic eating behaviour, and romantic relationships that are potentially problematic (Johnston et al., 2012; Le Grange et al., 2014; Babskie & Metzger, 2016; Metzger et al., 2021). Adolescents may choose not to share information with their parents, not as a result of possible parental reactions to the information but because of the differential perspectives of ‘parental authority’ (Metzger et al., 2021). For instance, some adolescents may engage in problematic behaviours or view these unaccepted behaviours as ‘personal choice,’ thus justifying keeping secrets about these behaviours as “none of their parents’ business” or believing that “parents may not understand” the adolescent's perspective in engaging in these behaviours (Metzger et al., 2021). Overly controlling parents who strictly monitor and interfere with the adolescent’s life often encourage secret-keeping (Metzger et al., 2021). As parents often have strict expectations and beliefs on behaviour and activities that their child can and cannot engage in, when the parent demands the adolescent to stop participating in an activity the adolescent enjoys, this could cause conflict. Often, parents tend to strongly believe they have parental authority to interfere with and restrict the

adolescent's activities (Metzger et al., 2021). For example, an adolescent girl who enjoys skateboarding during her leisure time. Her parents may demand her to stop skateboarding, as they regard it as a dangerous activity. As a result of her parent's disapproval and attempts to control what she can or cannot engage in, she might lie, hide, or keep her skateboarding activity a secret from her parents, as she believes it is her choice or right to participate in activities she enjoys, even if the activity is perceived as unacceptable or regarded as dangerous by her parents.

Parents tend to have strict rules and authority over specific behaviours, which adolescents are well aware of hence, adolescents are unlikely to disclose information regarding such behaviours (Metzger et al., 2021). These "problematic behaviours", which are often interpreted differently between adolescents and parents, include problematic peer groups, alcohol consumption, romantic activities, and risky cyber behaviours (Metzger et al., 2021). Often, parents may not want their child to engage in these behaviours; however, for an adolescent who is going through a new stage of self-identity, new relationships, and new experiences, they may seek these behaviours or activities due to curiosity. Thus, are more likely to engage in these activities even though they are perceived by parents as "bad, problematic behaviour" (Metzger et al., 2021). Likewise, peer and romantic relationships may also cause conflict between parent and child due to the adolescent's belief that these social connections are a matter of "individual choice" (Smetana et al., 2006; Metzger et al., 2021). However, if parents find out about these connections, they are likely to put restrictions on the adolescent's friendships and romantic relationships if they believe the adolescent's social group is considered a "bad influence" on their child (Keijsers et al., 2012; Metzger et al., 2021). Romantic relationships may also create conflict between parent and child, where parents may have potential family rules (who the adolescent dates) or perceive the adolescent is 'too young' to date, or believe the adolescent's romantic relationship is interfering with their academic life (Lefkowitz et al., 2002; Metzger et al., 2021). Parents may also have concerns regarding unsafe

sexual behaviour, or potentially view their adolescents' romantic partner as "unacceptable" or "bad influences" to their child (Lefkowitz et al., 2002; Metzger et al., 2021). As a result, adolescents may be more likely to keep their romantic relationships hidden or private from their parents to reduce parents interfering with their "individual choice" and "personal life".

Internal factors that may contribute to secret-keeping include the need for independence, privacy and personal space, identity formation, and emotional regulation (Darling et al., 2006; Marshall et al., 2005; Smetana, 2008). Adolescence is when a child begins to seek independence and want autonomy (Marshall et al., 2005). Adolescents may feel the need to keep secrets as a way of establishing independence and feel "grown up" and able to make their own decisions. Similarly, adolescents may also want personal space and are more likely to keep personal information private from their parents to reflect a sense of independence and control they are hoping to have (Marshall et al., 2005). Keeping secrets could be a strategy or coping mechanism adolescents use to regulate emotions or manage conflict with their parents (Marshall et al., 2005). Additionally, frequent secret-keeping is naturally likely to occur during adolescence, when adolescents are in the process of exploring and finding themselves. This process could lead to many new experiences, some of which they may want to keep private (Marshall et al., 2005).

The majority of adolescents are more likely to share personal information based on their relationship dynamics with their parents (Padilla-Walker et al., 2018). Parents who attentively listen and actively provide supportive advice are more likely to have greater open communication with their children, frequently expressing their thoughts and experiences with one another daily (Padilla-Walker et al., 2018). Furthermore, parents who have a strong trust built with their child are more likely to have children who voluntarily share information and are less likely to keep secrets because they know that their parents trust their judgement and decisions on different issues and topics, allowing the adolescent to feel the independence and autonomy they seek (Frijns et al., 2013). Thus, adolescent secret-keeping can be caused by

both internal factors (emotional reasoning, need for independence and autonomy, privacy and personal space, identity formation, and emotional regulation) but also external factors (parental control, monitoring, authority, and environment). As a result, adolescents are unlikely to share information regarding their personal lives, such as their academics, leisure activities, friendship groups, and romantic relationships, but rather keep secrets surrounding these issues to avoid parental concern, punishment, or interference (Lefkowitz et al., 2002; Smetana et al., 2006; Metzger et al., 2021). However, adolescents might be inclined to share personal information if they have a trusting bond with their parents; hence, a supportive relationship dynamic promotes frequent discussion between parent and child.

Parental Attachment

The importance of parent-child relationship quality, or "Parental Attachment," has been significantly stressed in relevance to adolescence (Kerr & Stattin, 2000; Smetana et al., 2006; Laird et al., 2013; Solís et al., 2015; Dykstra et al., 2020).

Parental attachment is the emotional bond between parents or caregivers and their children that develops during infancy and continues throughout the child's life (Bowlby, 1969; Ainsworth et al., 1978). Parental attachment relies on the responsiveness, sensitivity, trust, and security the parent provides their child. In the context of parental attachment, responsiveness refers to the parent's ability to promptly respond to the child's needs, provide emotional support when the child is distressed, and promote a sense of trust and emotional security (Bowlby, 1969; Ainsworth et al., 1978). Where sensitivity is characterised by the parent's ability to accurately and appropriately interpret the child's emotions and signals, responding with empathy and warmth (Bowlby, 1969; Ainsworth et al., 1978). Trust is defined as providing the child with consistent care, support, and protection, which is built from when the child is an infant (Bowlby, 1969; Ainsworth et al., 1978). Lastly, security is the amount of stability the parent portrays to their child, providing them with the feeling of secureness (Bowlby, 1969; Ainsworth et

al., 1978). Depending on the level of sensitivity, trust, security, and responsiveness offered by the parent or caregiver to meet their child's necessities and preferences, this may result in higher or lower quality parent-child relationships (Bowlby, 1969; Ainsworth et al., 1978).

Essentially, attachment theory characterises an individual's need to bond to an attachment figure (such as a parent, caregiver, or romantic partner) to use as a 'secure base' in times of distress to provide them with support, comfort, and security. An individual tends to become attached to an attachment figure that provides protection, safety, and trust when the individual is either frightened, stressed, fatigued, or sick. By knowing the attachment figure is in sight provides a strong sense of comfort and security for the individual (Bowlby, 1969; Bretherton, 1985). This attachment behaviour is first noticed in infancy and continues throughout the individual's life, where individuals are more likely to seek their parent or caregiver in difficult moments (Bowlby, 1969; Bretherton, 1985). To establish a healthy, secure, and intimate bond between parent and child, this bond must be stable throughout the child's life, especially when the child goes through the stages of development (childhood, adolescence, and adulthood) (Bowlby, 1969; Ainsworth et al., 1978).

Based on Bowlby's theory, Ainsworth and colleagues (1978) developed an infamous experiment known as the 'Strange Situation'. Staged in a playroom, an infant, caregiver/parent and a stranger would interact while the infant's behaviour was observed. Based on the infant's behaviour when their caregiver/parent left the room and then when reuniting with their caregiver/parent, Ainsworth and colleagues (1978) found three distinctive styles of attachment, secure, anxious-resistant, and avoidant attachment. Later on, Main and Solomon (1986) described another attachment found in infants, which they termed disorganised attachment.

Therefore, the quality of attachment is distinguished by four styles, namely, secure attachment, preoccupied/anxious attachment, avoidant attachment, and disorganised attachment (Bowlby, 1969; Ainsworth et al., 1978; Main & Solomon, 1986). Secure attachment refers to individuals who have had consistent and responsive affection, support, and security.

These individuals are more likely to have high levels of responsiveness, sensitivity, trust, and security from their parents/caregivers. Individuals with secure attachment can openly communicate worries, emotions, and problems they have and have no trouble with intimacy and trusting others (Bowlby, 1969; Ainsworth et al., 1978). These individuals are often unafraid to seek support when needed, are able to manage stress, have high social skills, and have comprehensive coping strategies with a low risk of anxiety and depression (Delgado et al., 2022).

There are three established subtypes of insecure attachment, preoccupied/anxious attachment, avoidant attachment, and disorganised attachment. Preoccupied/anxious attachment is characterised by a lack of trust, security, and low levels of responsiveness and sensitivity (Bowlby, 1969; Ainsworth et al., 1978). Individuals with preoccupied/anxious attachment would have grown up with caregivers/parents who are inconsistent with their parenting and who only provide parental warmth when they are available; these parents would have also been inconsistent in addressing to the child's needs. As a result, anxiously attached adults generally have trouble connecting with other individuals, struggle to express emotions and worries, fear abandonment, and have heightened sensitivity to relationship dynamics (Bowlby, 1969; Ainsworth et al., 1978; Delgado et al., 2022). Avoidant attachment is defined by the individual's tendency to avoid social relationships and intimacy, often have parents who may not respond to the baby's signals in an appropriate, responsive, and sensitive manner (Bowlby, 1969; Ainsworth et al., 1978; Delgado et al., 2022). Individuals with avoidant attachment are more likely to have had parents/caregivers who lacked responsiveness and sensitivity to their needs, leading to a self-developed coping mechanism of avoiding connecting with others, emotional expression, and a preference for independence and self-reliance (Bowlby, 1969; Ainsworth et al., 1978). Avoidant attachment individuals are often emotionally distant, have difficulty expressing their own emotions and empathising with others, have difficulty trusting

others, are wary of being rejected, and are more likely to solve their problems by themselves rather than relying on others for support (Delgado et al., 2022).

Lastly, disorganised attachment involves a mixture of anxious and avoidant attachment, these individuals may have experienced traumatic and inconsistent parenting such as abuse and neglect at a young age, where often the parent/caregiver shows contradictory behaviour switching between affection and abuse (Bowlby, 1969; Ainsworth et al., 1978; Main & Solomon, 1986; Delgado et al., 2022). Individuals with a disorganised attachment may have had a lack of consistent care and affection. As a result, these individuals may have difficulty trusting others, maintaining and or forming relationships, show signs of fear and confusion in a relationship, and have frequent behavioural and emotional outbursts which stem from the inability to understand or process their behaviour and their relationships with others (Bowlby, 1969; Ainsworth et al., 1978; Main & Solomon, 1986).

Out of the four attachment styles, research has largely emphasised the importance of secure attachment which contributes to overall greater adolescent adjustment (e.g., higher academic outcomes, being more resilient), social and emotional development (e.g., better social relationships with peers and parents, the ability to control emotions and mood, make healthy lifestyle choices) (Vivona, 2000; Moretti & Peled, 2004; Delgado et al., 2022). Specifically, adolescents who have high levels of attachment security are associated with greater constructive coping and social skills (Howard & Medway, 2004). In order for a child to successfully transition from childhood to adolescence, there is a period of exploring new relationships, independent experiences, and social roles. This is facilitated by being emotionally connected and by maintaining a healthy and secure attachment between parent and child (Moretti & Peled, 2004).

Attachment has been found to contribute to almost every aspect of early childhood development through to adult development, including neurocognitive development and social-behavioural competence (Carlson et al., 2003; Moretti & Peled, 2004). Hence, the importance of

secure attachment between adolescent and parent in providing healthy adolescent adjustment. The relationship between adolescent and parent has immense effects on the adolescent's cognitive, emotional, and social functioning (Moretti & Peled, 2004). However, it is important to note that parental attachment in adolescence cannot be inferred the same as during the child's younger years (Moretti & Peled, 2004). For example, a young, distressed child may want to be comforted by being hugged; this provides a form of support, security, and warmth, whereas adolescents may prefer their parents to be supportive of them emotionally and mentally by maintaining a certain distance (Moretti & Peled, 2004). Thus, the parent should express their support and affection by adapting appropriately to the child's age and phase of development to maintain a secure attachment. Although parents should adapt to their children's needs according to their phase of development, they should still provide the same amount of parental security (Lieberman et al., 1999). This means that, just like when the child was younger and sought their parents for comfort and security during negative experiences, the parent should continue to provide the same degree of parental security during adolescence (Paikoff & Brooks-Gunn, 1991; Moretti & Peled, 2004).

Similarly, parental control and parental monitoring might differ in adolescence (Stattin & Kerr, 2000; Kerr & Stattin, 2000). In childhood, parents have legitimate authority to control and restrict the child's life. However, as the child gets older and they begin to establish an independent life, that is not dependent on their parents, they may begin to question parents authority to control their personal lives. To define, parental control is the use of rules and restrictions parents impose to control and restrict the amount of freedom they can have to 'regulate' the adolescent's life and keep them on the correct path (Kerr & Stattin, 2000). Where, parental monitoring is the attention and tracking of the child's whereabouts, activities, and social connections as a form of parental knowledge (Kerr & Stattin, 2000; Jacobson & Crockett, 2000).

Parental Knowledge, Parental Monitoring and Parental Control

Parental control and parental monitoring both contribute to parental knowledge (Kerr & Stattin, 2000). Parental monitoring refers to the amount of information the parent has regarding the child's whereabouts, activities, and social connections, especially when the child is not spending time at home or with family (Kerr & Stattin, 2000; Jacobson & Crockett, 2000).

Existing literature has concluded the importance of parental monitoring for various adolescent adjustment behaviours (Jacobson & Crockett, 2000; Smetana et al., 2006; Smetana, 2008). To illustrate, higher levels of parental monitoring are linked to lower levels of antisocial behaviours, delinquency, drug and alcohol use, and risky sexual behaviours (Darling et al., 2008; Laird et al., 2008; Keijsers et al., 2009; Fosco et al., 2012). Parental monitoring is also associated with greater educational outcomes, due to parents' consistently being aware of their child's academic progress and providing them with help when needed (Dornbusch et al., 1987; Jacobson & Crockett, 2000).

On the other hand, parental control is when the parent implements rules and restrictions to limit where the adolescent is allowed to go, the time they have to be home, who they can go with, and possibly the amount of money they can spend (Stattin & Kerr, 2000; Kerr et al., 2010).

Within this area of research, parental control is identified through two constructs: psychological control and behavioural control. Psychological control is when parents control their child by taking advantage of their emotional and psychological needs (Barber, 1996; Kakihara et al., 2010). For example, making the child feel guilty or ashamed for bad behaviour to control the child's behaviour through their mind. Behavioural control is based on setting rules, limits, curfews, household rules, restricting freedom, and supervising the child's everyday activities and whereabouts, helping the child to develop a 'regulating structure' (Barber, 1996; Kakihara et al., 2010).

The differences between parental control and parental monitoring play a significant role depending on whether the adolescent is under parental supervision or not. For instance,

parental monitoring is primarily used when the adolescent is outside and unsupervised, whereas the purpose of parental control is used mostly under parental supervision and within the home.

Although they contribute to parental knowledge differently, parental control contributes largely but indirectly to parental knowledge (Fletcher et al., 2004; Smetana et al., 2006). To further explain, parental control is unlikely to contribute or translate directly as parental knowledge but, more so contributes to the amount of knowledge parents can obtain from their adolescent through setting boundaries and rules (Stattin & Kerr, 2000; Kerr et al., 2010). To illustrate, if an adolescent boy's parents require him to be home by 9pm on a school night (use of parental control). This rule provides the parents with the knowledge that their son is safe and unlikely to be engaged in risky behaviours on a late school night. However, this knowledge obtained only provides the parents with knowledge on the adolescent's whereabouts and activities. It is unlikely to provide the parents with deeper, more comprehensive knowledge on their adolescent's personal life. Whereas parental monitoring directly contributes to parental knowledge. For example, if an adolescent's parents frequently communicate with their teachers and close friends, they may learn more information about them, such as, if they are struggling in maths class or enjoy playing basketball during lunchtime. Thus, parents monitoring or supervising their child's activities and whereabouts directly contributes to the amount of knowledge they have about their child's personal lives (Stattin & Kerr, 2000; Kerr et al., 2010).

This knowledge can be obtained through the adolescent sharing this information or through other sources; however, this information about their child lets the parent know about what, who, and where their adolescent is when they are not able to be supervised, thus directly translating to parental knowledge.

The Influence of Parental Monitoring on Adolescent Secret-keeping

Parental monitoring is proven to be of great significance in adolescence (Kerr & Stattin, 2000). Parental monitoring can be distinguished between 'active' and 'passive' monitoring

(Waizenhofer et al., 2004). Active monitoring involves setting curfews, directly asking the adolescent information or asking others who are close to the adolescent (e.g., friends, teachers, siblings) what the adolescent is doing, who they are friends with, as well as actively participating in activities with the adolescent (including driving the child to participate in extracurricular activities, friend's parties, and camps) (Smetana, 2008). Whereas, passive monitoring involves the parent indirectly obtaining information from either the adolescent voluntarily sharing (the adolescent sharing information without the parent needing to directly ask) or through their partner (e.g., texting or calling their partner to ask when their adolescent is coming home and/or where they are) (Smetana, 2008). Mothers are found to use more active monitoring as opposed to fathers, who frequently obtain information about their adolescents through their wives (passive monitoring), in particular, if it is information regarding their daughters (Smetana, 2008). Therefore, the primary purpose of parental monitoring is for parents to obtain knowledge about their adolescents' behaviour when the adolescent is not at home and cannot be supervised (Laird & LaFleur, 2016).

In relation to adolescent secret-keeping, high levels of active parental monitoring are linked to greater adjustment outcomes in adolescence (Smetana, 2008; Jäggi et al., 2016). Research has demonstrated that mothers who are actively involved in observing, listening and supervising their adolescents report more open discussion and communication on the adolescent's daily activities and adolescents are less likely to secret-keep (Willoughby & Hamza, 2010; Keijsers & Laird, 2014). Particularly when the parent has knowledge of whom the adolescent is with and what they are doing, this prevents adolescents from engaging in antisocial behaviour and delinquency (Jäggi et al., 2016). Further, adolescents are less likely to keep secrets or only share partial information if they are aware that their parents actively monitor them, possess additional sources or are able to obtain information about them. This awareness increases adolescents' need to divulge because they know their parents may eventually find out (Waizenhofer et al., 2004).

More importantly, high parental monitoring is unlikely to refer to parents controlling their adolescents or confronting them about their behaviour; rather, parents should maintain a relationship with their adolescent that allows the adolescent to willingly share their personal experiences (Smetana, 2008; Jäggi et al., 2016). By actively monitoring, being open to the adolescents' opinions and experiences, and being involved by making small talk (i.e. asking about their day) these behaviours can increase the adolescent's want and need to share information, reducing secret-keeping behaviour (Willoughby & Hamza, 2010; Waizenhofer et al., 2004; Keijsers & Laird, 2014).

Parental Control in Relation to Adolescent Secret-keeping

Strict parental control encourages adolescents to secret keep and withhold information from their parents (Smetana et al., 2006). Parents who strictly control their children often may not promote open communication, and or show empathy to understand the adolescent's choices and opinions, increasing their adolescent's engagement in secret-keeping behaviour (Smetana et al., 2006; Darling et al., 2007). The primary purpose of parental control is to ensure the parent has full knowledge of their child's whereabouts, activities, and connections by using parental authority to control aspects of the child's life, such as the activities the child can engage in (Kerr & Stattin, 2000).

Stattin and Kerr (2000) suggest that parental control is related to adolescent behavioural outcomes including how frequently adolescents might divulge and the likelihood to engage in delinquent activities. They also suggest that parental control in general is associated to adolescents feeling overly controlled, leading to poorer adjustment. This feeling of being overly controlled is mostly age-related, in which depending on the adolescents age, this could influence how sensitive or accepting children are of parental control (Eccles et al., 1991; Stattin & Kerr, 2000; Kapetanovic et al., 2019). The period between early adolescence to middle adolescence is a stage where the child is beginning to push for autonomy and independence,

are more likely to question parental rules and supervision and demand for a more equal, balanced relationship, where parents and adolescent mutually agree on restrictions and rules (Kapetanovic et al., 2019). If the parent and adolescent are unable to come to mutual terms that allow for more independence but also set rules and boundaries, this may lead to an ongoing conflict between parent and adolescent (Kapetanovic et al., 2019).

Research has suggested that adolescents are not always willing to be controlled by their parents and or be limited by rules, curfews, and restrictions (Smetana et al., 2006; Darling et al., 2007; Kakihara et al., 2010). Adolescents interpret high levels of parental control as perceiving that they matter less to their parents, making adolescents feel overcontrolled and less competent and that their parents are intrusive (Hawk et al., 2008; Kakihara et al., 2010). For instance, prior research (Smetana et al., 2009; Dykstra et al., 2020) has found that adolescents reported lying or secret-keeping as a way to obtain autonomy, avoid parent-child conflict, and manage parental control and parental monitoring. Parents who overly control their children often may have children who are less likely to obey to parental authority (Barnes & Farrell, 1992; Smetana et al., 2006; Gingo et al., 2017) and are less likely to express their thoughts, opinions, beliefs, and experiences with their parents, especially if their parents engage in strict, authoritarian parenting (Kakihara et al., 2010). This suggests the importance of a parent who encourages a supportive parent-child relationship and an adequate level of parental control (Darling et al., 2006; Tilton-Weaver, 2014; Dykstra et al., 2020). Furthermore, as the adolescent gets older, especially in middle to late adolescence, the effectiveness of parental control decreases. When parents aggressively interfere with the personal aspects of their child's life (controlling who they can be friends with, when they can go out, who they choose to date, what subjects they can enrol in, and the extracurricular activities they participate in), this significantly contributes to adolescents desire to rebel and refute parental control (Pettit et al., 2001; Romm et al., 2020). In particular, when the parent believes it is their parental right to control and monitor the adolescent's behaviour and personal life. Whereas the adolescent perceives this as

intruding on their personal life, blocking their right to make their own choices and opinions, resulting in conflict, disobedience, and a weakened, distant parent-child relationship (Cumsille et al., 2010). Thus, as adolescents get older they begin to find parents attempting to control their personal life as “intrusive”. This belief gradually pushes adolescents to no longer communicate and share aspects of their personal life but rather to withhold information in attempt to create a personal boundary where their parents can no longer interfere (Erickson et al., 2016). Overall, as parental control is often perceived by adolescent’s as “intrusive” and “overly controlling”, it is very likely that adolescents may keep secrets and information about themselves private from their parents. Thus, it is important for parents and adolescents to maintain 'relatedness' (parental behaviour involving allowing the child to speak their opinions openly, validating and showing empathy even when in disagreement) especially during discussions on strictness of parental control. This also includes when discussing contrasting opinions and beliefs in order to maintain parental security and parental attachment, which can be negatively affected by strict parental control (Allen et al., 2003; Moretti & Peled, 2004).

Secure Attachment and The Association With Adolescent Secret-keeping

Research has consistently shown that secure or ‘high-quality’ parent-child relationships are linked to greater disclosure, parental trust, acceptance, and responsiveness (Smetana et al., 2006; Solís et al., 2015). In particular, secure attachment has been linked with lower engagement in high-risk behaviours (excessive drinking, drug use, and risky sexual behaviours), mental health problems (anxiety, inattention, depression, aggression, and eating disorders), and higher social skills and coping strategies (especially during the ages of 16 to 18 years) (Moretti & Peled, 2004). Additionally, parents who are warm, trusting, and supportive of their adolescent's opinions, beliefs, and choices are more likely to have adolescents who are less likely to keep secrets hidden from their parents (Keijsers et al., 2010; Solís et al., 2015). Adolescents who are securely attached also tend to have successful academic transitions to

high school, may have more positive relationships, and are better at openly communicating opinions and experiences with family than insecurely attached adolescents (Kenny & Donaldson, 1991; Ducharme et al., 2002; Moretti & Peled, 2004). In order for a positive, high-quality parent-child relationship to be maintained, trust between parent and adolescent is crucial (Dykstra et al., 2020). When dishonest behaviour particularly committed by the adolescent, such as lying or ‘lie-telling’, secrecy, or 'secret-keeping' occurs, the trust between parent and child significantly declines (Debey et al., 2015; Dykstra et al., 2020). This dishonest behaviour not only threatens the parent-child relationship but also creates a long-lasting effect on the relationship (Lavoie et al., 2017). To illustrate, the behaviour of lying involves the adolescent making up a false, inaccurate statement to intentionally deceive the other person. As a result, if an adolescent has engaged in lying to their parent, the trust the parent once had may significantly decrease and could be very difficult to rebuild (DePaulo et al., 2003; Dykstra et al., 2020). Similarly, the behaviour of keeping secrets involves the adolescent withholding information from their parents where due to the adolescent being unwilling to share personal information, the parent and child might communicate significantly less, as well as spend less time together (Tilton-Weaver, 2014; Baudat et al., 2022). Furthermore, if the parent-child relationship was secure during childhood but declined during adolescence, this may increase the adolescent’s likelihood to keep more secrets because of the lack of trust between parent and child, reinforcing the adolescents’ need to keep information private (Tilton-Weaver, 2014; Baudat et al., 2022). However, this decline in parent-child relationship is unlikely to refer to a shift from a secure attachment to an insecure attachment. Rather, the ‘type of attachment’ between parent and child may stay the same but the dynamics and aspects of the relationship could change (McConnell & Moss, 2011). The trust, stability, sensitivity, responsiveness and security between parent and child may constantly shift during adolescence depending on the conflicts that arise as well as with the increase of secret-keeping behaviour (Allen et al., 2004).

Thus, parental attachment and secrecy may have a bi-directional relationship, where both the parent-child relationship and secret-keeping can be impacted by one another. Additionally, the combination of lying, and withholding information results in the parent and child growing distant, which may strain the bond and parent-child relationship they had. Therefore, the importance of trust and frequent communication is crucial to maintaining a secure parent-child relationship, specifically during adolescence.

Insecure Attachment and The Association With Adolescent Secret-keeping

Insecurely attached adolescents tend to be at a greater risk of engaging in drug and alcohol abuse as well as exhibiting aggressive, delinquent behaviour (Lessard, 1994; Obsuth et al., 2002; Moretti et al., 2004). Individuals with hostile or detached “low-quality parent-child relationships” may result in adolescents being less inclined to share information about themselves because they believe their parents are less likely to be unaccepting of their opinions, beliefs, and choices or may not care about them, thus leading to frequent secret-keeping (Solís et al., 2015). Adolescents who are insecurely attached may choose their best friend, girlfriend, or boyfriend as their primary attachment figure instead of their parent (Freeman & Brown, 2001). This is a critical problem if this friend they identify as their primary attachment figure is problematic, this could potentially make the adolescent vulnerable to peer pressure and increase their likelihood of engaging in antisocial behaviours (Freeman & Brown, 2001). To further explain, adolescents are more likely to prioritise their friendships over their relationship with their parents, especially during adolescence and they may have the tendency do so if their parental bond is weak (insecure attachment) (Smetana et al., 2006; Dykstra et al., 2020). When the adolescent identifies a problematic individual as their primary attachment figure, they might be more inclined to engage and follow the actions of the primary attachment figure even if they are aware that certain behaviours and actions are dangerous, illegal and or problematic. This is likely due to insecurely attached individuals are more likely to have a heightened fear of

abandonment and rejection thus, potentially be more inclined to obey or follow their attachment figure's demands and may worry about the consequences of rejecting the other individual (Delgado et al., 2022).

Many adolescents with insecure attachment tend to have a mistrust of others, are emotionally avoidant, and are unlikely to seek help when in trouble. Instead, they may avoid communicating to solve problems and prefer to sort their problems alone (Freeman & Brown, 2001; Guerrero et al., 2009; Merrill & Afifi, 2015). This pattern can be very detrimental to a relationship, especially when the individual is less likely to prefer to talk through their problems but instead conceals their problems and distances themselves from others. Moreover, individuals with insecure attachments tend to be more sensitive to rejections (high rejection sensitivity) in comparison to individuals with secure attachments (Ein-Dor, 2010; Wismeijer et al., 2014). This could be a result of the insecurity they may have developed, thus they are uncertain and insecure about where they fit in social environments (Wismeijer et al., 2014). Individuals with high rejection sensitivity tend to perceive and respond more intensely to rejection; they may also be reluctant to share personal information with others in case it might lead to future punishment or rejection from the other individual (Wismeijer et al., 2014). As a result of the insecurity and lack of warmth, sensitivity, and care adolescents with insecure attachment may have developed, this has significantly influenced their socio-emotional ability to trust and communicate their problems and experiences with others, likely leading to more frequent secret-keeping. Overall, immense research in adolescence (Kerr & Stattin, 2000; Smetana, 2008; Laird et al., 2013; Tilton-Weaver, 2014; Solís et al., 2015; Dykstra et al., 2020) has already demonstrated how influential factors (e.g., parental style, attachment, control, monitoring, adolescence wants and needs) significantly contribute to greater adolescent outcomes, adjustments, and frequent adolescent disclosure.

Adolescent disclosure studies (i.e., research exploring how often adolescents divulge and/or sharing personal information) have focused primarily on the association between

parental attachment, parental control, parental monitoring, and age and gender differences. All of these have been examined in separate studies. In addition, the majority of existing literature (Finkenauer et al., 2002; Keijsers et al., 2010; Dykstra et al., 2020; Rudy et al., 2022) have focused on exploring adolescent disclosure and less on “secrecy” or “secret-keeping”. Currently, there is minimal research exploring all three predictors altogether, even though all three of these factors (parental attachment, parental control, and parental monitoring) greatly contribute to the child’s development, adjustment, and overall outcomes (Kerr & Stattin, 2000; Smetana, 2008; Laird et al., 2013; Tilton-Weaver, 2014; Solís et al., 2015; Dykstra et al., 2020). More importantly, all of these factors contribute significantly to adolescent secret-keeping. By gaining a deeper insight into understanding why adolescents keep secrets and how frequently they keep secrets can be beneficial in understanding how adolescents’ experiences shape their reasons for keeping secrets. To date, only one study has simultaneously examined parental attachment, parental control and monitoring. The only exception is Rudy et al., (2022), who conducted this study based in South Korea, with participants in early and middle adolescence (13 to 17 years) who have focused primarily on adolescent disclosure and delinquency (the act or behaviour involving adolescents engaging in rule-breaking activities such as shoplifting, vandalism, and damaging property) and not on adolescent secret-keeping. Hence, due to the limited number of studies exploring all three factors together as well as less exploration of adolescent secret-keeping, this current study will focus on how the predictors of parental attachment, parental control, and monitoring influence the frequency of secret-keeping in adolescents.

The Current Study

The present study examined the most influential factors contributing to adolescent secret-keeping, including parental attachment, parental monitoring, and parental control. Adolescents reported on their relationships with their mothers and fathers separately, as well as

the number of times they kept secrets about different personal issues varying from activities with friends, academic results, personal purchases, etc. In this study, there are three main research questions and a fourth question regarding adolescents living situation (living with parents and/or apart/away from parents) to be explored. First, whether the quality of parent-child attachment predicts adolescent secret-keeping. Based on prior studies (Darling et al., 2006; Tilton-Weaver, 2014; Dykstra et al., 2020), we expected the parent-child attachment to predict the frequency of adolescent secret-keeping, in particular a high-quality parent-child relationship defined by a relationship between parent and child that involves trust, honesty, and support should predict low frequency of adolescent secret-keeping.

Second, we wanted to know if parental control and parental monitoring predicted adolescent secret-keeping. As many studies have illustrated (Darling et al., 2006; Marshall et al., 2005; Smetana et al., 2006; Smetana, 2008), high levels of parental monitoring and parental control (distinguished by nonintrusive, appropriate rules and supervision), specifically where adolescents perceive their parent to have 'legitimate authority/ability' to regulate a problem, is when adolescents may feel obligated to share information about activities that may involve safety, comfort, and health problems (e.g., alcohol consumption, tobacco, or drug use). We anticipate that 'high levels' of parental monitoring might lead to fewer secrets being kept. However, we hypothesise that high levels of parental control may predict greater frequency of adolescent secret-keeping. This is because high levels of parental control are likely to cause adolescents to refute parental authority and reject rules and restrictions of parental control (Barnes & Farrell, 1992; Smetana et al., 2006; Gingo et al., 2017). Further, as adolescents' perceive parental control as "intrusive" and "inappropriate", this may increase their likelihood to keep secrets.

The third question we wanted to explore was the degree of variability in adolescent secret-keeping explained by parental attachment when accounting for parental control and monitoring. We predicted a similar result to prior studies (Kerr & Stattin, 2000; Smetana, 2008;

Laird & LaFleur, 2016), indicating that adolescents tend to lie or secret-keep as a way to obtain autonomy, avoid parent-child conflict and manage parental control and monitoring. Thus, we hypothesised that parent-child attachment may interact with parental monitoring and parental control to influence the frequency of secret-keeping.

Additionally, demographic factors, gender, and living with parents status (yes or no) were further explored. Similar to previous studies (Frijns et al., 2013; Solís et al., 2015; Jäggi et al., 2016; Padilla-Walker et al., 2018) who have examined gender in relation to adolescent secret-keeping, we would expect that boys might keep more secrets than girls would. For whether the adolescent's living situation would predict frequency of secret-keeping, we would expect adolescents who currently live with their parents to keep more secrets, as opposed to adolescents who were currently living away or apart from their parents. As mentioned, we would expect this result because adolescents who live with their parents are in close proximity, contributing to the desire to become ‘independent’ and the need for privacy. Whereas, adolescents who live apart from their parents have more personal freedom and may be less likely to be questioned and asked about their personal activities as a result of not being in close proximity.

Methods

Participants

Overall, 1687 participants took part in the survey, however, a number of participants did not proceed beyond the participant demographics or were filtered out due to incompletion of the survey (more details about the data cleaning process can be found in the results section). The current study consisted of 765 adolescents aged 16 to 19 years (M = 17.6, SD = 1.03) recruited in New Zealand. The sample included 441 males and 324 females, with the majority of participants identifying as NZ European (63%), European (11%), Latin American/Hispanic (4%),

Chinese (3%), Indian (2%), Māori (2%), 'Other Asian' (Malaysian, Taiwanese, Thai) (3%) and 'Other' (American) (7%). Participants were in different stages of education, with approximately 60% in high school, 39% enrolled in university (first and or second year), and 1.4% were not currently enrolled in education. The majority of participants (85%) lived with their parents, and only 14% reported not currently living with parents. A power analysis conducted for this study using G*Power software (Faul et al., 2007) was used to determine the required sample size to detect a significant effect. The effect size was estimated using an alpha level of .05 and a desired power of .95. The power analysis indicated that a sample size of 210 participants would be necessary to achieve a desired power of .95.

Procedures

The study was sent to 11 high schools in Auckland, New Zealand in July 2023 to request consent to advertise this study to students. However, the invitation was rejected by all schools due to students' lack of time in school as a result of COVID-19. Thus, this study was advertised on social media platforms such as Reddit and Facebook. In particular, the study was posted on the group pages of New Zealand, University of Auckland, AUT and Auckland. To specify, on Reddit, the group pages of New Zealand, University of Auckland, AUT, and Auckland have individuals who belong to or identify to that specific group and are likely to go onto the group pages to discuss topics relevant to the group (e.g., University of Auckland page are likely to have alumni and current students attending this university).

The advertisement poster for this study and a link to the survey were posted in each of these groups to recruit participants. To attract participants to the study, a small prize draw was included for 17 gift cards valued at $50 each. This was included at the end of the online survey, where participants were redirected to a separate survey to ensure the original responses were anonymous. Participants completed demographics (age, gender, ethnicity, current education status, and living with parent status). They were also advised to complete the study without

parental supervision. To complete the parental attachment sections of the survey, participants were instructed to refer to their mother or, if relevant, a mother-like figure in the instance that their mother was not present in their lives (the same applied for father). The survey was presented in the following order: Section One: parental attachment questions regarding their relationship with their mother, and then father. Section Two: questions regarding how frequently they kept secrets. Section Three: How strictly their parents monitor their personal lives and Section Four: Questions regarding how strictly their parents control and/or limit their personal lives. Questions were placed in this specific order (frontloading), with sections that had complex and more subscales at the beginning of the survey and sections with fewer questions at the end. This was done to maintain participant engagement and prevent survey abandonment.

Measures

Parental Attachment

The Inventory of Parents and Peer Attachment-Revised (IPPA) measures the relationship between the adolescent and their mother, father, or guardian acting in these roles (Gullone & Robinson, 2005). Relationship qualities such as trust, communication, and feelings of anger and alienation are measured. There are 15 items in the scale consisting of the subscales Trust (7 items), e.g., “I trust my mother," Communication (4 items), e.g., “I tell my mother about my problems and troubles,” and Alienation (4 items), e.g., “My mother doesn’t understand what I’m going through these days.” Adolescents were asked to complete questions about their mother or mother-like figure and father or father-like figure separately. Questions about their relationship with their mother and father were rated by adolescents on a 5-point scale, ranging from 1 (*never*) to 5 (*always*). As with previous studies (Keijsers et al., 2009), across both mother-child and father-child scales, there was high internal consistency α = .81 and α =.84, respectively. Both mother and father attachment were made up of aggregated scores for all three subscales (Trust, Communication, and Alienation) using the average of each

participant's response. Items that were negatively worded (e.g., “I feel it’s no use letting my feelings show around my mother”) were reverse coded; this included items 6, 10, 12, 13, and 15 (see APPENDIX for a full list of items). Higher scores for attachment to mother and/or father signified that adolescents had a secure attachment to their mother and/or father defined by trust, warmth, and security. Lower scores indicated an insecure attachment (instability and distrust) to their mother and/or father.

Adolescent Secrecy/Secret-keeping

The frequency of how often adolescents kept secrets from their parents about their whereabouts, academic progress, friends, and everyday life were assessed using Kerr and Stattin’s (2000) *Adolescent Disclosure* Scale. Similar to previous researchers who have examined both adolescent secrecy and disclosure (Frijns et al., 2010; Jäggi et al., 2016), the measure comprised of 10 items. Questions included “Do you tell your parent(s) who you hang out with or who your friends are?"; “Do you tell your parent(s) how school/university was when you got home (how you did on different exams; your relationship with teachers?"); “Do you tell your parent(s) about what you do during your free time?"; and “Do you tell your parent(s) about what you do when with friends out during nights and weekends?”. Responses were completed on a 5-point scale, ranging from 1 (*never)* to 5 (*always*). In the analysis, we used the aggregated score, which is made up of the average response of each participant's score. The scale had good internal reliability, α = .82. None of the items in this subscale were reverse-coded. However, to adapt to the age group of the sample, the questions were slightly modified to make them applicable for the sample population, but the meaning of the questions remained the same. These changes included adding words like "courses,” "university," and “assignments” (e.g., “Do you talk to your parent(s) at home about how you are doing in the different subjects/*courses* in school/*university*?”).

Parental Control

Parental Control (Kerr & Stattin, 2000) was used to measure how strict parents were in terms of rules, curfews, and requesting details about their child. The measure consisted of five items, each answered on a 5-point scale ranging from 1 (*never*) to 5 (*always*). Items included, “Do you need to have your parent's permission to stay out late on a weekday evening?" and, “Do you need to ask your parent(s) before you can decide with your friends what you will do on a Saturday evening?”, “If you have been out very late one night, do your parent(s) require that you explain what you did and whom you were with?”, “Do your parent(s) always require that you tell them where you are at night, who you are with, and what you do together?” and, “Before you go out on a Saturday night, do your parent(s) require you to tell them where you are going and with whom?”. Similar to all the other scales, the aggregate score composed of the average response of each participant's score. Cronbach’s Alpha for parental control was $\alpha = .72$ which was slightly lower than previous studies exploring adolescent disclosure, which were $\alpha = .77$ to .82 (Stattin & Kerr, 2000; Keijsers et al., 2010; Laird & LaFleur, 2016), respectively.

Parental Monitoring

‘Monitoring’ assessed using Kerr and Stattin’s scale (2000) refers to parents’ knowledge of their child’s whereabouts, activities, and connections (i.e., friends). Using a 5-point scale ranging from 1 (*never*) to 5 (*always*), adolescents answered nine questions regarding the amount of information they believe their parents know about them. These questions were, “Do your parent(s) know what you do during your free time?"; “Do your parent(s) know who you have as friends during your free time?"; “Do your parent(s) usually know what type of schoolwork or assignments you have?"; “Do your parent(s) know what you spend your money on?"; “Do your parent(s) usually know when you have an exam or paper due at school or university?"; “Do your parent(s) know where you go when you are out with friends at night?"; “Do your parent(s) normally know where you go and what you do after school or university?";

“Do your parent(s) know how you do in different subjects or courses at school or university?" and “In the last month, have your parent(s) ever had no idea of where you were at night?”. Item 9, “In the last month, have your parent(s) ever had no idea of where you were at night?” was negatively worded and thus was reverse-coded; the alpha for the scale with item 9 included was α = .70. However, item 9 was found to be negatively correlated with most other items in the scale (i.e., items 1, 3, 4, 5, and 7). Therefore, another reliability test was completed, this time without reverse coding item 9. The alpha score was slightly higher, α =.71; however, looking at the inter-item correlations, item 9 was still negatively correlated with items 2, 6, and 8. Thus, item 9 was removed, and another reliability test was conducted. The final reliability for parental monitoring was α = .75 and the aggregated score for analysis is made up of 8 items, averaged by each participant's response.

Analysis Plan

Data was cleaned by removing missing data using the following criteria, “Data which had incomplete responses with three or more missing “blanks” (n = 82)[1]. Data which had the same answer for every question (n = 130) and, data detected using Qualtrics bot software and had answers that had similar patterns of responses submitted within seconds of each other were removed (n = 245), as well as data that were potential bots which had duplicated data/had the same answers for all questions in the survey that were submitted at the exact same time (n = 465). After data cleaning, 765 out of 1687 cases remained in the current study. Preliminary analyses were conducted to ensure no violation of the assumptions of linearity, normality, multicollinearity, and homoscedasticity. Analyses began with testing for correlations between adolescent secret-keeping with the following predictors, parental attachment, parental control, and parental monitoring. Then, multiple linear regression was used to assess if each of, parental

[1] Please note that all analyses were re-run using the current 765 participants plus the 82 deleted cases who reported three or more missing responses. There was no change in the pattern of the results presented.

attachment, parental monitoring and parental control predicted the frequency of adolescent secret-keeping. Lastly, hierarchical multiple regression models were conducted to explore how much variance in secret-keeping is accounted for by attachment to parents when controlling for other predictors including parent restrictiveness (control and monitoring) and demographic factors (i.e., age and gender). Similarly, a simultaneously multiple regression was utilized to explore parental control and monitoring, demographic factors (i.e., age and gender), attachment and the association in frequency of secret-keeping between participants living with parents or living apart from parents.

Results

Descriptive Analyses

A Pearson's correlation was run to examine relations between age, gender, living with parents, mother-child attachment, father-child attachment, adolescent secret-keeping, parental monitoring, and parental control. As seen in Table 1, the quality of parental attachment (Mother-Child and Father-Child) are associated with how frequently an adolescent keeps secrets. Specifically, mother-child relationship, $r = .34$ and father-child relationship quality, $r = .38$ both predict how frequently an adolescent keeps secrets. In other words, this indicates that a more secure parental relationship predicts greater secret-keeping.

Parental Monitoring had a moderately strong positive correlation to adolescent secret-keeping, suggesting that participants who reported that their parents monitored them closely were more likely to also keep secrets from their parents. Looking at parental control, we see a similar pattern in which participants who report stricter parents were also more likely to keep secrets from their parents, although the correlation here is not as strong as for parental monitoring (i.e., $r = .62$ compared to $r = .26$). Overall, these results are unsurprising as we hypothesized parent-child attachment, parental control, and monitoring would predict how frequent an adolescent keeps secrets.

A Spearman's correlation coefficient between living with parents (yes/no) and frequency of adolescent secret-keeping, $r = -.14$ $p <. 001$ indicated a weak negative relationship. The negative correlation suggests that the more likely the adolescent is to live with their parents, the higher tendency to keep secrets from their parents. The correlation coefficient between gender and frequency of adolescent secret-keeping showed a weak, significant relationship. This indicates that females are more likely to have greater attachment quality to their mothers and their fathers compared to males. Females were also more likely to score higher in parental control than males were (weak correlation).

Table 1.

Descriptive Statistics and Correlations Between Parental Attachment for Each Parent, Parental Monitoring and Control, Adolescent Secret-keeping, Age, Gender and Living with Parents

Variables	**Mean**	**SD**	**1.**	**2.**	**3.**	**4.**	**5.**	**6.**	**7.**	**8.**
1. Age	17.63	1.03								
2. Gender	0.42	0.49	.03							
3. Live with Parent(s)	0.14	0.35	.05	.13**						
4. Mother-Child Attachment	3.18	0.72	.06	.13**	-.08*					

5. Father-Child Attachment	3.13	0.74	-.02	.11**	-.05	.45**			
6. Adolescent Secret-keeping	3.14	0.71	-.03	.03	-.14**	.34**	.38**		
7. Parental Monitoring	3.24	0.69	-.03	-.05	-.16**	.34**	.31**	.62**	
8. Parental Control	3.08	0.87	-.05	.09*	-.14**	.21**	.21**	.26**	.36**

Note. ** Correlation is significant at the 0.01 level. *. Correlation is significant at the 0.05 level.

Gender is coded as 0 = Male and 1 = Female.

Living with Parents is coded as 0 = Living with Parents and 1 = Not currently living with parents.

Focal Analyses

Research Question 1: Does the quality of parent-child attachment predict adolescent secret-keeping?

To test whether parental attachment predicted adolescent secret-keeping, a multiple linear regression was used. Parental attachment for mother and father were simultaneously regressed on frequency of adolescent secret keeping. The results of the regression indicated that parental attachment statistically significantly predicted frequency of adolescent secret-keeping, $F(2, 762) = 84.55$, $p < .001$, accounting for 18.2% of the variability in adolescent secret-keeping. This suggests that quality of parental attachment, between mother-child and

father-child does predict how frequently adolescents keep secrets (see Table 2). In particular, adolescents who are more securely attached are more likely to keep secrets from their parents.

Table 2.

Parental Attachment, Parental Control and Monitoring Predicting Adolescent Secret-keeping in Separate Models.

Model	Step	Variable	B	95% CI	β	t	p
1	1	Mother Attachment	.21	[0.14,0.29]	.22	5.9	<.001
	2	Father Attachment	.27	[0.20,0.34]	.28	7.68	<.001
2	1	Parental Monitoring	.63	[0.57, 0.69]	.61	20.02	<.001
	2	Parental Control	.03	[-0.01, 0.08]	.04	1.33	.18

Research Question 2: Does parent control/monitoring strictness predict adolescent secret-keeping?

To explore whether parental monitoring and parental control predicted the frequency of adolescent secret-keeping, a multiple linear regression was used.

The model containing both predictors (i.e., parental monitoring, parental control) alongside adolescent secret-keeping was statistically significant, $p < .001$. The analyses from the linear regression indicated that parental control was not a statistically significant predictor, $p = .18$. However, strictness of parental monitoring statistically significantly predicted frequency of adolescent secret-keeping, $F(2, 762) = 242.60$, $p <. 001$, explaining 38.9% of the variance in

adolescent secret-keeping (see Table 2). This finding suggests that strictness of parental control does not necessarily predict how frequent an adolescent keeps secrets from their parents however, the amount of knowledge and information the parents know about their child's whereabouts, connections, personal life does predict how frequently an adolescent keeps secrets from their parents.

Research Question 3: Does parent-child attachment predict adolescent secret-keeping after controlling for parental control and monitoring?

A Hierarchical Multiple Regression was conducted to investigate how much variance in secret keeping is accounted for by attachment to parents when controlling for parent restrictiveness (monitoring and control) and demographic factors (e.g., age and gender). Age and gender were entered into Step 1, which was not statistically significant, $F(2, 762) = .646$, $p = .52$ (see Table 3). In Step 2, parental monitoring and parental control were added. This model was statistically significant and explained 39.3%, $F(2, 760) = 122.79$, $p < .001$, *R*squared change =.39, *F*change (2,760) = 244.52, $p < .001$ of the variance in adolescent secret-keeping.

After entry of maternal attachment and paternal attachment in step 3, the model explained only an additional 4% of the total variance in frequency of adolescent secret-keeping. Paternal attachment (β = .17) was stronger than maternal attachment (β = .08) in predicting secret-keeping in adolescents and parental monitoring (β = .54) remained the strongest predictor of adolescent secret keeping. In the final model, 43.1% of the model's variance was explained, R^2 change = .039, $F(2, 758) = 95.74$, $p < .001$.

Table 3.

Hierarchical Multiple Regression Analysis For Mother Attachment, Father Attachment, Parental Control and Monitoring Controlling For Age and Gender

Step	Predictor Variable	B	SE B	β	p	R2 Change	R2
1	Age	-.02	.03	-.03	.48	.002	.002
	Gender	.05	.05	.03	.36		
2	Age	-.01	.02	-.09	.78	.391	.393
	Gender	.09	.04	.06	.04		
	Parental Monitoring	.63	.03	.61	<.001		
	Parental Control	.03	.03	.03	.28		
3	Age	-.01	.02	-.01	.69	.039	.431
	Gender	.04	.04	.03	.31		
	Parental Monitoring	.56	.03	.54	<.001		
	Parental Control	.01	.02	.01	.79		
	Mother Attachment	.08	.03	.08	.01		
	Father Attachment	.16	.03	.17	<.001		

Research Question 4: Does age, gender, attachment, and parental factors (monitoring and control) predict adolescent secret-keeping differently for those who live with their parents and those who do not?

To examine whether demographic factors (e.g., age and gender), attachment and parental factors (monitoring/control) contribute to frequency of adolescent secret-keeping in the same way for those who report living with parents and those who do not, data was split by living at home status and a simultaneous multiple regression was conducted. In the model, age,

gender, maternal attachment, paternal attachment, parental monitoring, and parental control were entered.

Live with Parents

The model for adolescents who lived with parents was statistically significant, $F(6, 642) = 74.864$, $p < .001$ and explained 64.2% of the variance. Looking at the model, paternal attachment and parental monitoring were significant predictors of adolescent secret-keeping in adolescents living with their parents ($p < .001$). However, age, gender, maternal attachment, and parental control were not significant predictors of secret-keeping.

Do Not Live with Parents

For adolescents who did not live with their parents, the model was also statistically significant $F(6, 97) = 19.16$, $p < .001$. In particular, gender ($p = .002$), maternal attachment ($p = .003$) and parental monitoring ($p <. 001$) were significant predictors of adolescent secret-keeping. Parental monitoring remained the strongest predictor for secret keeping regardless of whether participants lived at home or away from their parents. However, when looking at attachment, the pattern is different, in contrast to those who live at home, maternal attachment is a significant predictor of secret keeping however paternal attachment is not. There are no gender differences for adolescents living with their parents, however, for adolescents living away from parents, there are gender differences. Specifically, females are more likely to keep secrets from their parents when they live away from home than males are. Overall, this suggests that adolescents who are female and who do not live with their parents tend to keep more secrets than adolescents who are currently living with their parents.

Table 4.

Living With Parents Status With Predictors Age, Gender, Mother Attachment, Father Attachment, Parental Monitoring and Control

Live with Parents Status	**Variable**	**B**	**SE B**	**β**	**p**	**R2**	**F**
Yes	Age	.00	.02	.001	.98	.412	74.86

	Gender	.01	.04	.004	.89		
	Mother Attachment	.06	.03	.06	.07		
	Father Attachment	.17	.03	.19	<.001		
	Parental Control	-.009	.03	-.01	.75		
	Parental Monitoring	.57	.04	.54	<.001		
No	Age	-.12	.06	-.14	.06	.542	19.163
	Gender	.39	.12	.23	.002		
	Mother Attachment	.32	0.1	.27	.003		
	Father Attachment	.06	.08	.06	.45		
	Parental Control	.07	.06	.09	.27		
	Parental Monitoring	.43	.09	.42	<.001		

Discussion

The present study aimed to examine how parental attachment, parental control, and parental monitoring contribute to how frequently an adolescent keeps secrets. Adolescent secret-keeping appears to be a natural developmental process as adolescents spend less time at home and more time with their friends, this may inevitably decrease their relationship quality with their parents, increasing their opportunity to keep secrets. Yet, there has been very little

research simultaneously exploring the three most important predictors contributing to adolescent secret keeping, namely parental attachment, parental control, and parental monitoring.

Many previous studies (Kerr & Stattin 2000; Smetana et al., 2006; Laird et al., 2013; Solís et al., 2015; Dykstra et al., 2020) have consistently emphasised the successful outcomes and importance of "secure" and “high” quality relationships between parent and child. For instance, research on attachment has concluded that securely attached individuals tend to have higher academic achievements, greater social skills, friendships, romantic relationships, tend to be more resilient, and are more likely to have smoother life transitions from childhood to adolescence and adulthood (Vivona, 2000; Moretti & Peled, 2004; Delgado et al., 2022). Furthermore, secure parent-child relationships are immensely important as a predictor factor of frequency of adolescent secret-keeping (Smetana et al., 2006; Solís et al., 2015). In particular, adolescents with secure attachment are more likely to trust their parents and have a relationship that builds on acceptance and responsiveness, thus increasing adolescents' want to share personal information with their parents and decrease frequency of secret-keeping. As a result, we hypothesised that “secure” parent-child relationships would result in less frequent secret-keeping than adolescents who had an insecure attachment. The findings from the current study indicate that the relationship between parent and child predicts how frequently adolescents may keep secrets. Particularly, adolescents who have close, intimate and/or “high quality”, “secure” relationships with their mother and/or father are more likely to keep secrets from their parents. Similarly, research has consistently (Kerr & Stattin, 2000; Stattin & Kerr, 2000; Darling et al., 2008; Laird et al., 2008; Keijsers et al., 2009; Fosco et al., 2012) demonstrated the importance of parental control and parental monitoring to influence adolescent secret-keeping. To illustrate, the level of strictness of parental control and monitoring executed by the parent may contribute to whether the adolescent is more likely to be encouraged to engage in frequent secret-keeping. Parents who are unaccepting of their adolescent's interests, beliefs, and experiences may

contribute to adolescents' belief that their parents might disapprove of their activities and behaviours, thus are unwilling to share thoughts, feelings, experiences, and opinions with their parents (Smetana et al., 2010; Solís et al., 2015; Metzger et al., 2021). Majority of research has demonstrated that active parental monitoring is a core predictor of adolescent secret-keeping. To illustrate, parents who consistently observe, listen, and supervise their child have adolescents who are less likely to keep secrets (Willoughby & Hamza, 2010; Keijsers & Laird, 2014). Instead, they may frequently discuss their feelings, experiences, and opinions with their parents and are more likely to ask their parents for advice and help when needed (Willoughby & Hamza, 2010; Keijsers & Laird, 2014). Based on existing literature, we expected high levels of parental monitoring to result in low frequency of adolescent secret-keeping due to adolescents needing to divulge information when the adolescent is aware of their parents' high level of supervision (Waizenhofer et al., 2004). We hypothesised that high levels of parental control would predict greater frequency of adolescent secret-keeping, as adolescents would refute and or rebel against strict parental control or authority, increasing secret-keeping. Our study found that parental monitoring is likely to influence how often adolescents keep secrets. Parents who closely monitor and or supervise their adolescent's whereabouts, activities, and friend groups when adolescents are not at home may increase adolescents' likelihood to keep secrets. However, parental control (controlling the adolescent through rules, restrictions, and curfews) is unlikely to predict how frequently adolescents keep secrets.

Even when both parental control and monitoring were controlled for, the quality of the parent-child relationship predicted how frequently adolescents keep secrets. More specifically, a "high-quality" relationship with fathers indicated greater secret-keeping.

Further, as all adolescents live in different environments, think differently, and are physically different, either by age, or gender, this may influence the number of secrets they choose to keep, who they keep them from, and their reasoning for keeping such information secret. For example, females are more likely to share and openly discuss information and

emotions with their parents than males are (Keijsers et al., 2010; Rose et al., 2012). Where, early adolescents and late adolescents (i.e., 12 to 13-year-olds and 16 to 18-year-olds) tend to frequently keep more secrets than other age groups (Finkenauer et al., 2002). Moreover, we hypothesised that adolescents living with their parents would be more likely to keep secrets than adolescents living apart from their parents. This is because adolescents living with their parents are in closer proximity, increasing their desire to become independent (White, 2002; Seiffge-Krenke, 2013). Adolescents living at home would be more inclined to keep their personal lives private and establish their personal boundaries by keeping aspects of themselves secret. Whereas, adolescents living apart from their parents may have more personal freedom and might be less inclined to keep secrets (Vangelisti, 1992). We found that adolescents who currently live with parents, parental monitoring, and a “high-quality” relationship with fathers but not mothers predicted the frequency of secret-keeping. However, age, gender, and parental control is unlikely to predict how frequent an adolescent keeps secrets. Adolescents who lived with their parents were more likely to keep secrets than adolescents who lived away or apart from their parents.

A “high-quality” relationship with mothers (but not fathers) and parental monitoring predicted frequency of secret-keeping for adolescents who lived apart or away from parents. In addition, female adolescents who lived apart/away from parents were more likely to keep secrets than males who lived away from home.

Parental Attachment (Mother-Child Relationship and Father-Child Relationship)

The current study found that parental attachment predicted frequency of adolescent secret-keeping. Although the direction of this association was not in keeping with past research (Kerr & Stattin, 2000; Vieno et al., 2009; Smetana et al., 2010; Tilton-Weaver et al., 2010) findings, that is that adolescents who tend to have a positive parent-child relationship are more likely to open up and divulge information when they feel connected and supported by their

parents. Rather, our findings demonstrate that a high-quality parent-child relationship for both mothers and fathers was positively associated with more frequent secret-keeping. Specifically, adolescents with "secure," or "high-level attachment to their mothers and/or fathers were found to frequently keep secrets from their parents. Although unexpected, there are many possible reasons why we found this association. First, adolescents may keep secrets unnecessarily because of negative punishments, consequences, or their belief that their parents may disapprove of their behaviour or engagement in antisocial activities but as a result of emotional reasons. These emotional reasons can include being afraid of hurting their parent's feelings or emotions, being considerate of their parents in case they cause burden or to prevent them from worrying (Cumsille et al., 2010; Jäggi et al., 2016; Walker et al., 2018; Metzger et al., 2021; Yeo, 2021). Thus, even though we would expect securely attached individuals to keep fewer secrets, it is also important to consider the reasons for such behaviour. Although it is worthy to note, that our study did not measure or examine reasons for adolescent secret-keeping. We only explored how frequent adolescents keep secrets.

Secondly, it could possibly be due to their belief that sharing experiences and information about themselves may damage or hurt their secure relationship (Yeo, 2021). Their engagement in certain activities (e.g., drinking), getting a bad grade, or different perspectives and opinions may lead to their parent's feelings or trust to change (Yeo, 2021).

Thirdly, adolescents are likely to engage in antisocial behaviours during the ages of 16 to 19, as they can independently access alcohol and go to places with 18 and above age limits. Due to curiosity, adolescents may want to engage in activities and behaviours often disapproved by their parents. These behaviours include engagement in alcohol, drug and tobacco use, sexual behaviours, risky behaviours (e.g., reckless driving, extreme sports), attending parties' concerts and events that have age restrictions, risky social media activity, and or skipping school or classes (Keijsers et al., 2012; Rote & Smetana, 2015; Metzger et al., 2021). The emphasis on peer relationships and participating in activities that their peers are

engaging in could increase adolescents' likelihood to follow along and engage in the same activities (Deković et al., 2004). The increase in new experiences and activities may increase secret-keeping in adolescents in order to dismiss or avoid sharing behaviours and or engagement in these activities (Smetana et al., 2010; Rote & Smetana, 2015; Dykstra et al., 2020). Subsequently, even if adolescents have a secure parent-child relationship, they might withhold information about their engagement out of fear of disappointing or hindering their parents' expectations of them (Baudat et al., 2022).

Furthermore, adolescents might be unable to effectively express and communicate their thoughts and feelings to their parents (Liu et al., 2023). Hence, due to difficulty, they might not want to share information, which could lead to the adolescent unintentionally keeping secrets by withholding information. More importantly, secure attachment is unlikely to eliminate adolescents' need for independence and autonomy. Adolescents may keep secrets not because of their relationship quality with their parents but because they want to gain a sense of independence and autonomy. Keeping secrets could potentially be their opportunity to declare independence and personal boundaries from their parents. Overall, securely attached adolescents could be more inclined to keep secrets due to fear of actions and behaviours that could negatively affect the parent-child relationship.

Parental Attachment, Parental Monitoring, Control, Age and Gender

A hierarchical multiple regression analysis found that even while controlling for parental monitoring, control, age, and gender, parental attachment was found to have an effect on secret-keeping. In particular, paternal attachment had a stronger effect than maternal attachment on secret-keeping. This finding is unsurprising, being that parental attachment is the foundation that shapes an individual’s developmental and social outcomes beyond parental

monitoring and or control. Attachment is unlikely to only contribute to an individual's successes and overall outcomes; it also facilitates an important process in adolescence namely, autonomy and independence (Noller, 1995; Steinberg & Silverberg, 1986). Aspects of parental attachment that are of particular importance include the amount of encouragement regarding autonomy and independence, the amount of love and support available to the adolescent, and the degree of closeness between family members (Noller, 1995). Parents who can provide supportive family environments while balancing encouraging autonomy and independence tend to have adolescents who are less likely to secret-keep and are better at coping with the transitions to adulthood (Noller, 1995). Both being autonomous and independent are central developmental components in adolescence (Meeus et al., 2002; Zhang & Qin, 2023). Thus, as adolescents tend to engage in secret-keeping as an expression for more independence and autonomy, if parents of secure attachment adolescents can balance both the relationship and encourage autonomy and independence, adolescents might be less likely to secret-keep.

Moreover, a secure attachment is more likely to mean adolescents are more likely to value and prioritise their relationship with their parents (Sarracino et al., 2011). When making decisions on information to keep private and information to share with their parents, they may thoroughly take into consideration their close relationship with their parents before deciding to share partial or full information and or hide information (Cumsille et al., 2010). As they cherish this relationship, they might be more likely to conceal information that might emotionally and/or physically hurt the relationship (e.g., disapproved behaviours and activities, bad grades, personal opinions and experiences).

Further, although parental monitoring and control are significant predictors that ensure the adolescent makes healthier and safer decisions and choices (not engaging in antisocial or problematic behaviours), parental control and monitoring are used primarily in adolescence, serving a completely different purpose and role to parental attachment (Stattin & Kerr, 2000; Kerr & Stattin, 2000; Kakihara et al., 2010). Specifically, both parental control and monitoring

are used to keep the adolescent within parental authority until they can independently and responsibly make their own decisions (Stattin & Kerr, 2000; Kerr & Stattin, 2000). Although parental control and monitoring are strategies used to intentionally restrict and supervise the adolescents behaviour and to ensure their safety and wellbeing, often parents can overstep this boundary (Gingo et al., 2017). As a result, adolescents are more likely to keep secrets if their parents are highly controlling or closely monitor their whereabouts, friend groups and activities (Kapetanovic et al., 2019).

Whereas, the purpose of parental attachment is to foster trust between parent and child, creating a reliable and supportive foundation known as a “secure base". This “secure base” accompanies the child during their exploration and experiences in life (Bowlby, 1969; Ainsworth et al., 1978). Depending on the type of attachment adolescents have may predict whether the adolescent frequently communicates and shares personal information with their parent or keeps information hidden. For instance, secure attachment may mean adolescents are more likely to divulge and frequently communicate with parents, are more comfortable expressing themselves, and are more likely to ask for support when needed (Mikulincer & Nachshon, 1991). As opposed to adolescents with an insecure attachment (either preoccupied/anxious, avoidant, or disorganised attachment), who might be less inclined to share and openly discuss personal information with their parents and may be more likely to keep secrets (Mikulincer & Nachshon, 1991). Although it is important to note that attachment is only one predictor of adolescent secret-keeping. A secure attachment does mean that adolescents may have greater and more frequent open discussions with their parents; however, this does not necessarily mean securely attached adolescents may not secret-keep. Rather, as our findings suggest secure parent-child relationships may increase secret-keeping due to the close relationship influencing adolescent’s emotional judgement and desire to safeguard this close parent-child relationship. As a result, attachment is a predictor of adolescent secret-keeping above and beyond parental monitoring

and control as it directly contributes to whether an adolescent are more or less likely to secret-keep.

To sum up, there are two explanations for why parental attachment in particular would have a stronger effect on adolescent secret-keeping. First, it could be because parental attachment and parental control/monitoring facilitate and serve different purposes. Parental attachment is based on trust between parent and child, fostering the individual's ability to become autonomous, independent, and increase self-exploration, all of which are directly linked to adolescent secret-keeping. Secondly, adolescents often use secret-keeping to control privacy boundaries, an adolescent's attachment type could affect how closely they control these privacy boundaries (Merril & Afifi, 2015). Depending on the degree to which the adolescent trusts the other individual with the knowledge of their personal information, this may influence whether the adolescent withholds information or divulges information to the other individual (Petronio, 2002). This “trust” is likely to depend on their attachment/relationship bond with the other individual (Collins & Feeney, 2004; Guerrero et al., 2009; Merril & Afifi, 2015).

Although the increase in variance was very small (4%), our findings suggesting that parental attachment above and beyond (parental control and monitoring) has an effect on adolescent secret-keeping is not unexpected, as parental attachment is more likely to play a more important role in not only shaping the adolescent’s social, cognitive, emotional, and physical abilities but also their likelihood to secret keep.

Significance of Paternal Attachment on Adolescent Secret-Keeping

Paternal attachment showing a stronger effect on secret-keeping could be justified by certain reasons. First, depending on the parents’ communication style, this would influence whether an adolescent would divulge information or keep secrets. Mothers speak in a more caring, expressive, and thoughtful manner when communicating with their children, they also use softer vocabulary (Le Chanau & Marcos, 1994). In comparison, fathers tend to be less

open, expressive, straightforward, and more demanding with their responses; this could lead to adolescents preferring to talk and discuss with their mothers about their thoughts, feelings, or experiences than with their fathers and or only sharing partial information with their fathers (Le Chanau & Marcos, 1994). As adolescents tend to have a secure attachment with their fathers, they may still have a close bond, however they are less likely to be the parental figure that the adolescent shares information with. This portrayal may likely lead to adolescents being more inclined to keep secrets from their fathers. Potentially, if adolescents perceive that their fathers compared to mothers to be less understanding, unaccepting, and or react negatively, they could prefer to tell their mothers instead of their fathers (Almeida & Galambos, 1991). Similarly, if the family follows a traditional family structure, then fathers are often the main disciplinarians in the family (Maldonado, 2007; Blakemore et al., 2009; Hallers-Haalboom et al., 2015). This would greatly increase adolescent secret-keeping as even with a secure attachment, adolescents may still be afraid and want to avoid negative punishments and consequences.

Furthermore, although adolescents may have a secure attachment with their fathers, as they reach adolescence they may distance themselves from their fathers (still a secure attachment although may be less secure than before). In particular, because of fathers' tendency to not question their children about their personal lives, this often leads to adolescents believing that they father is less likely to care or want to know hence, adolescents may choose not to share information and might keep the information hidden (Le Chanau & Marcos, 1994). Thus, even if adolescents have a secure relationship with their fathers, there are many different factors that contribute to the need to secret-keep.

Increases in Secret-Keeping Particularly in Adolescence

Generally, longitudinal studies (Dykstra et al., 2020) have shown that the more adolescents keep secrets from their parents over time, the more it could negatively affect the parent-child relationship as well as make it more difficult to maintain a positive, honest, and

trustful relationship. To explain, securely attached adolescents may have closer, more intimate relationships with their parents which could affect their decision and judgement to share or keep information hidden in an attempt to maintain their close parent-child relationship (Caughlin et al., 2005; Merrill & Afifi, 2015). Adolescents may need to balance their desire for autonomy and independence while also maintaining a close relationship with their parent(s) which is very difficult to manage (McElhaney et al., 2009). However, the behaviours and activities they engage in as a way to gain autonomy and independence are more likely to negatively affect their close parent-child relationship (Kapetanovic et al., 2019). This close relationship they have with their parent(s) may strongly impact the adolescent's decisions to secret-keep as a way to maintain their relationship. Thus, adolescents might put more effort into ensuring their parents are less likely to find out about the activities or behaviours they engage in. They may perceive that by not telling their parents and instead keeping the information secret, their parent-child relationship might not be affected. This could likely lead to adolescents choosing to keep information private or hidden from their parents rather than sharing information with them, increasing the likelihood of secret-keeping.

Additionally, as adolescents begin to spend less time at home or less time going out with their parents and more time with peers, their beliefs, and perceptions may change and potentially be influenced by the people they spend the most time with, which is often their peers. This could increase their perception that, due to a generation gap or a belief manipulated by their peers, their parents may not understand or be accepting of their choices and personal opinions, as well as increase their decision to keep secrets, leading to an ongoing cycle (Solís et al., 2015). This bidirectional causation between the adolescent attempting to maintain a secure relationship through keeping secrets might result in the parent likely finding out about the secret or information, and the adolescent keeping a secret (behaviour) may negatively impact the parent's trust in the adolescent (Dykstra et al., 2020). Likewise, if the adolescent is unlikely to divulge information to the parent, they may communicate less, which could weaken their

relationship or bond, and if the adolescent continues to secret-keep, this might make it difficult to reconcile the relationship to a secure state.

Parental Control and Parental Monitoring

As many other studies (Smetana et al., 2006; Darling et al., 2007; Kakihara et al., 2010) exploring the influence of parental monitoring and parental control on adolescent disclosure have illustrated, with the developmental stage of adolescence, a decrease in parental authority and or control follows. Many existing studies have only explored how parental monitoring contributes to the likelihood of secret-keeping in adolescents, with our study being the very few exploring both parental monitoring and parent control. Similar to findings from previous studies, we expected high levels of parental monitoring to predict a greater frequency of secret-keeping and high levels of parental control to predict greater frequency of secret-keeping. This is because high levels of parental control commonly causing contrary behaviour in adolescents such as being uncooperative, rebellious, and disobeying parental authority, which is likely to increase secret-keeping (Barnes & Farrell, 1992; Smetana et al., 2006; Gingo et al., 2017). Unexpectedly, the findings from our study show parental control is less likely to be statistically significantly, and predict the frequency of adolescent secret-keeping, (Fletcher et al., 2004; Smetana et al., 2006). There are numerous reasons that may potentially explain these results. First, parental control requires cooperation from the adolescent in order for parental control to apply (McMullen, 2004). To further explain, if the adolescent is less likely to listen to and obey their parents' rules, parental control may not work as intended (to keep the adolescent in control by limiting the activities and connections they can engage in). However, given that adolescents are at an age where they feel rebellious and no longer believe they should be under strict parental authority, they are more likely to disobey or refuse parental authority or control. This could also explain why research has shown that parents are not always aware of their child's whereabouts and or activities (McMullen, 2004). If the child is less likely to want to communicate

and or share information regarding their personal life then the parent's effort (attempting to control) may not be effective, hence if a parent cannot gain full cooperation from the adolescent, they may be unable to get full information or knowledge on their adolescents' whereabouts and activities either (McMullen, 2004). As a result, parental control might not fulfil the role it needs to, and parents might not be able to control and or limit the adolescent's actions and may be unaware of their activities, connections, and possible engagement in risky behaviours.

Secondly, research has implied that high levels of parental behavioural control result in adolescents feeling overcontrolled and intrusive (Kerr & Stattin, 2000; Hawk et al., 2008). The more the parent tries to limit the adolescent's freedom, personal life and intrude on their academic, social, and romantic lives, the greater the adolescent may attempt to break free from these barriers and engage in behaviours they know their parents dislike and disapprove of (Smetana et al., 2010; Solís et al., 2015). This could lead to adolescents managing their personal information by keeping information secret so that their parents are unable to interfere with their personal lives.

Thirdly, any type of parental control in adolescence often results in conflict (Collins & Laursen, 1992; Claes et al., 2018). Adolescents are at an age where they strive for independence and autonomy and less parental control more quickly than they develop self-regulation (Branje, 2018). Therefore, if parents are unable to adapt to their child's needs, this may lead to conflicts, arguments, and rebellion (Claes et al., 2018). In order for parents to find an optimal balance between adequate levels of control while also encouraging autonomy, parent and child might need to mutually agree on rules (regarding safety, curfews, and responsibilities) that are beneficial and respect both individuals (Beveridge & Berg, 2007).

Fourth, parental control relies on the quality of the parent-child relationship (Marshall, 2001; Kakihara & Tilton-Weaver, 2009; Kakihara et al., 2010). To demonstrate, studies suggest that adolescents interpret control depending on their relationship with their parents (Kakihara et al., 2010). Adolescents who have parents who are less accepting and are more rejecting or

execute high levels of parental control were perceived to matter less to their parents (Marshall, 2001). This suggests that adolescents who may not have a harmonious relationship with their parents may perceive parental control as parents being overly controlling and intrusive. Whereas adolescents who have a secure relationship might interpret parental control as their parents being cautious of their safety and being attentive to their health and wellbeing. The different interpretations may influence how the adolescent reacts and behaves to their parents' rules and restrictions (Vieno et al., 2009). Although our study did not explore parental control in relevance to the quality of parent-child relationships, if we incorporated the quality of parental relationships into a dimension of parental control, we could explore how each variable relates to one another. To illustrate, we could examine how the type of parental attachment, would influence adolescent's perception of parental control. Depending on how parental control is perceived by the adolescent would result in how likely adolescents keep secrets and how frequently. As shown with previous studies, adolescents who have secure relationships might be more accepting of their parent's control, perceiving it as a 'caring concern' (Vieno et al., 2009). This would allow us to understand how parental control is interpreted differently dependant on the adolescent's parental attachment.

Lastly, intercultural research indicates that among the different types of parenting practises (e.g., parental control, parental monitoring, and parental solicitation), parental control is most directly influenced by cultural norms (Youniss, 1994; Katicibasi, 2017; Claes et al., 2018). The meaning, importance, and expectation levels attributed to parental control are culturally influenced (Hughes et al., 2005; Dwairy & Achoui, 2010; Akcinar & Baydar, 2014). For instance, in collective cultures (i.e., Asian, African, Latin American, and Middle Eastern), parents may exert more parental control to maintain harmony within the family. Children growing up in a collectivist culture then learn and perceive control as an expression of love and care rather than their parents restricting their freedom (Triandis, 1995; Dwairy & Achoui, 2010). In terms of parental roles, mothers in Western countries tend to have professional careers, thus have the

authority and power to directly control their children (Dwairy & Achoui, 2010). In Western cultures, mothers are also more controlling than fathers (Dwairy & Achoui, 2010). However, in Eastern cultures, mothers are often exclusively childrearing; thus, although they are controlling, the lack of personal authority means they have to exert control using the father's authority; hence, children tend to be more afraid of their father than their mother (Dwairy, 1998; Dwairy & Achoui, 2010). Therefore, different cultures may lead to different perceptions and interpretations of parental control in adolescence, implying that depending on how the adolescent interprets parental control, may also predict whether they secret-keep and how frequently.

Importance of 'Active' Parental Monitoring

In contrast to parental control, high levels of active parental monitoring may allow parents to identify their adolescents' whereabouts and leisure activities, decreasing secret-keeping (Laird & LaFleur, 2016). As expected, parental monitoring did statistically significantly predict frequency of adolescent secret-keeping. Parental monitoring is unlikely to rely on adolescent disclosure or the adolescent's cooperation to obtain parental knowledge, but rather on the parent to seek this knowledge themselves. However, adolescents who may frequently communicate with their parents are more likely to share their whereabouts and leisure activities with their parents, thus not requiring the parent to constantly monitor their whereabouts (Tokić & Pećnik, 2011).

The findings in the current study align with previous research (Smetana, 2008; Keijsers & Laird, 2014; Jäggi et al., 2016) in that strictness of parental monitoring predicts how frequently an adolescent may secret-keep. In particular, parental monitoring was the strongest predictor of adolescent secret-keeping out of all the other predictors (age, gender, parental control, maternal and paternal attachment), highlighting the significance of high levels of parental monitoring. Importantly, adolescents who had high levels of parental monitoring had a greater tendency to keep secrets from their parents. Based on these findings, this implies that adolescents who

reported their parents closely monitored them engaged in secret-keeping more often. There are various reasons why parental monitoring was the strongest predictor of adolescent secret-keeping. The first and most important reason is that parents might continuously and consistently monitor their child's whereabouts, activities, and peer groups, whether the adolescent is living with them or away from them (Lansford et al., 2014; Fletcher et al., 2018). Mothers specifically may question and ask the adolescent for details as a natural parental instinct and to ensure their child's wellbeing and safety (Waizenhofer et al., 2004). This consistent monitoring and checking on the adolescents whereabouts and activities may likely build up overtime and become more of an "annoyance" for adolescents, especially if they want more independence from their parents (Tokić & Pećnik, 2011). Therefore, adolescents may keep more secrets regarding their personal lives as an expression for more independence from their parents.

Moreover, as suggested by other studies (Kerr & Stattin, 2000; Kakihara et al., 2010; Tilton-Weaver, 2014), adolescents may not perceive parents' monitoring efforts as "legitimate". Adolescents believe that their parents efforts to monitor them is considered as overstepping their parental authority (Brehm, 1966; Tilton-Weaver, 2014). Further, adolescents might have strong negative emotions regarding their parents' attempt to constantly monitor them, which they believe is their parents way of restricting their choice, freedom and ability to making independent choices (Tilton-Weaver, 2014). Hence, as adolescents already have negative perceptions on parental monitoring, if parents engage in "strict" monitoring this might force adolescents to keep more secrets. It makes sense then, that adolescents who report that their parents closely monitoring them may frequently keep more secrets.

Additionally, it is important to remember that "strict" or "high levels" of parental monitoring is unlikely to mean parents frequently ask adolescents questions about their whereabouts, activities, and friend groups (Laird & LaFleur, 2016). Instead, "strict" parental monitoring refers to parents rigidly and constantly monitoring their child's activities, whereabouts, and friend groups through different ways when they are unable to be supervised

at home (Laird & LaFleur, 2016). This allows parents to have full awareness of the adolescent's engagement, reducing the risk of delinquency (e.g., theft, vandalism, trespassing) and other problematic behaviours (e.g., tobacco and alcohol abuse, reckless driving), even when it is out of their parental authority to keep them under their supervision. To illustrate, research has consistently found higher levels of parental monitoring to be associated with lower levels of problematic behaviours such as antisocial behaviours, delinquency, drug and alcohol use, and risky sexual behaviours (Darling et al., 2008; Laird et al., 2008; Keijsers et al., 2009; Fosco et al., 2012). The parent being aware of their child's personal life may reduce the chances of major problems occurring, as the parent are able to bring attention to the particular behaviours and/or activities that need to be controlled. Therefore, high levels of parental monitoring, specifically high levels of 'active' parental monitoring, are immensely important during adolescence, when engagement in delinquency peaks.

Living With Parent's

Although no other studies have examined living with parents as a variable related to adolescent secret-keeping, and this is the first to do so, we expected adolescents living with their parents would be more likely to frequently keep secrets than adolescents living apart/away from their parents. As expected, results from a spearman's correlation imply that adolescents who currently live with their parents have a higher tendency to frequently keep secrets than adolescents who do not live with their parents. This was expected, as we mostly predicted that it would be easier for adolescents who do not live with their parents to keep fewer secrets because they have more freedom and may not have to feel guilty or worry about their parents finding out if they arrive home late, drunk, or after engaging in other disapproved behaviours (Vangelisti, 1992). In addition, adolescents are more likely to engage in behaviours they normally would not engage in if they lived with their parents, such as drinking, drug use, partying, staying out late, and many more. In comparison, adolescents living at home would be

more likely to keep secrets due to more restrictions, less freedom, and greater exposure to parental supervision. Adolescents living at home means the parent may know when the adolescent is out with friends and when they come home. This is likely to lead to closer monitoring of the adolescent's whereabouts, friends, and leisure activities, increasing the adolescent's need and want to keep information about their personal lives private from their parents (Vangelisti, 1992). In addition, adolescents who live at home are more exposed to their parents' questioning and the requirement to disclose information they may not want to share, making it difficult to find the independence and autonomy they want, thus increasing their need to keep secrets (Finkenauer et al., 2002; Marshall et al., 2005).

Our findings suggest that for adolescents living at home, paternal attachment and parental monitoring were significant predictors of adolescent secret-keeping. For adolescents who do not live at home, maternal attachment and parental monitoring were significant predictors of secret-keeping; however, paternal attachment was not.

For both of our findings, we found that parental monitoring was the strongest predictor of secret-keeping, regardless of whether adolescents lived at home or away from their parents. Aside from our study, existing literature (Kerr & Stattin, 2000; Smetana, 2008; Laird & LaFleur, 2016) have demonstrated the importance of parental monitoring in obtaining parental knowledge in order to be able to supervise the adolescent even when the parent cannot physically be with them. Adolescents who live apart from their parents might still be monitored. Although they may not experience 'consistent' monitoring, 'active' monitoring, or be as strictly monitored as adolescents who are living with their parents due to proximity; however, they may still be monitored to a certain extent (Darling et al., 2008; Laird et al., 2008; Keijsers et al., 2009). Mothers may constantly monitor their children to ensure their children are safe and healthy, whether the adolescent is currently living at home or are living away from home (Lansford et al., 2014; Fletcher et al., 2018). Living apart from their parents may mean parents cannot be actively involved in supervising, communicating, empathising, and helping the

adolescent when required (Fox & Bruce, 1999; Rollie, 2013). However, the majority of research (Waizenhofer et al., 2004; Willoughby & Hamza, 2010; Keijsers & Laird, 2014) has strongly emphasised active parental monitoring as a significant contributor to less secret-keeping and more frequent open communication and discussions between parent and child. Further, living away from home or apart from parents might also hinder their parent-child relationship. Parents and children may spend less time together, communicate less, feel distant, and be unable to express and interpret one another's emotions, all of which may gradually decrease trust between parent and adolescent (Fox & Bruce, 1999; Rollie, 2013). The lack of closeness between parent and adolescent may mean adolescents are unlikely and unwilling to share personal information with their parents. Thus, a combination of all of these factors might explain why adolescents living away from home may keep more secrets than adolescents living at home.

Paternal Attachment and Adolescents Living With Parents

Moreover, paternal attachment predicted adolescent secret-keeping for adolescents who lived with their parents. An explanation for this could be that secure attachment often means that adolescents might have a strong sense of emotional security and stability (Allen et al., 2003). Keeping secrets could possibly be a way for the adolescent to maintain this emotional security and stability. Thus, adolescents might keep certain information secret in case this information disrupts the close, secure father-child relationship. Living at home could increase their desire to keep certain information secret as the likelihood of the father finding out is greater.

Additionally, securely attached adolescents are more likely to frequently and openly communicate with their fathers about various topics (Allen et al., 2003). Living at home might mean that adolescents are more likely to frequently discuss and/or chat with their fathers. Due to the close bond as well as frequently communicating, the adolescent may feel comfortable

sharing information but also subsequently keep certain information knowing their fathers are likely to respect their choice and privacy to keep certain aspects of their lives private.

Furthermore, fathers hold higher expectations about their children's future career pathways than mothers tend to do (Goodenough, 1957; Hoffman, 1977; Peterson, 1985). Adolescents may fear disappointing their fathers, especially if they are unable to meet their expectations, in particular for adolescents who look up to their father as a role model and or share a similar goal (Metzger et al., 2020). For instance, a father who is a professional athlete may encourage the adolescent to follow a similar pathway. However, if the adolescent is unable to do so or does not want to pursue a similar pathway, they may keep this information secret from their fathers. In addition, although adolescents may have a close relationship with their father and live together, they may still feel awkward and embarrassed to share personal thoughts and feelings with them, or they might only share partial information (such as opinions and decisions) and intentionally withhold other personal information they perceive as "embarrassing" to share with their father, such as their romantic dating life and emotions (Youniss & Smollar, 1985; Li et al., 2023). Adolescents' high level of "pride" might also affect their decision to keep secrets (Webb et al., 2016). Moreover, as emphasised adolescents strive for independence and autonomy; however, due to the complex and challenging phase of adolescence, adolescents may not have any idea how to gain independence and autonomy (Spear & Kulbok, 2004). Therefore, in order to maintain a positive relationship with their father but also gain independence and autonomy, adolescents might keep secrets to test the amount of autonomy they can maintain without affecting their father-child relationship (Finkenauer et al., 2008; Larson et al., 2015). To add, adolescents might find expressing or communicating with their fathers difficult. They may be afraid of being misunderstood or being unable to verbally express their opinions in an orderly manner. Adolescents living at home may be more exposed to their father's questioning and need for frequent communication. Thus, rather than a lack of paternal attachment, adolescents could keep secrets as a result of communication difficulties.

Maternal Attachment and Adolescents Living Away

Maternal attachment (but not paternal attachment) was a predictor of secret-keeping for adolescents who lived away from their parents. Again, this is not surprising due to the parental role that mothers play (nurturing, providing emotional support, and fostering a sense of warmth and security). Mothers compared to fathers are more likely to have the parental "role" to strictly monitor their children's everyday activities and engagements (Lansford et al., 2014; Fletcher et al., 2018). In contrast to fathers, mothers are more involved, spend more time with the child, and are more likely to check on their child's daily activities, academic progress, communicate and monitor the child's emotions, and nurture the child with appropriate care and support. Mothers are likely to directly seek information about their children, whereas fathers are less likely to seek or ask their children about their whereabouts, activities, and connections (Lansford et al., 2014; Fletcher et al., 2018). This is likely to lead to adolescents keeping secrets from their mothers more than their fathers due to the higher level of monitoring mothers engage in.

Similarly, adolescents living away might be more likely to communicate with their mothers than their fathers. Mother's more frequently checking in (by phone or text) would mean children might feel the need to keep certain information hidden or secret. Whereas the lack of communication from fathers might mean adolescents may not have to lie or withhold information from their fathers, as their father does not check in or ask for this information. Thus, even when the child is living independently, mothers may still monitor their adolescent to make sure they are safe and are aware of their child's day-to-day activities (Lansford et al., 2014; Fletcher et al., 2018). This could potentially explain why, for adolescents living away, maternal attachment was a stronger predictor of secret-keeping but paternal attachment was not.

Moreover, the majority of studies (Montemayor & Brownlee, 1987; Renk et al., 2003; Phares et al., 2009; Ruhl et al., 2015) have demonstrated the different roles mothers and fathers take on. Specifically, daughters may frequently disclose and ask their mothers for advice regarding their personal matters; however, they are less likely to share and communicate with

their fathers due to fathers being perceived as being less accessible and involved than mothers (Waizenhofer et al., 2004; Fletcher et al., 2018). Mothers also tend to be the parent who "monitors" the adolescent, thus, it is expected that both parental monitoring and maternal attachment are significant predictors of secret-keeping.

Adolescents who are living apart from their parents are most likely older adolescents (i.e., 16-19). They may have moved away from their parents for school, university, or work purposes. These adolescents are likely to enjoy this new experience of living alone and away from family, as it creates a sense of independence and a private boundary. However, if the adolescent's mother constantly and frequently contacts the adolescent, this may likely interfere with the adolescents need for independence. However, due to the close mother-child relationship, the adolescent may be afraid to tell their mother that their frequent check-in's are "disrupting" their newly established independence. The adolescent might intentionally keep information secret from their mother to express their want for private boundaries and independence, instead of telling their mother and possibly damaging their valuable relationship (Hawk et al., 2008; Kakihara et al., 2010).

Lastly, adolescents are more prone to experiment with and engage in risky, problematic behaviours (e.g., reckless driving, use of alcohol, tobacco, or illegal drugs, cyberbullying, and truancy) (Petit et al., 2013). They may keep their engagement in these activities secret to avoid maternal judgement, disapproval, and the likelihood of being required to move back home because their mothers no longer trust them to live alone without parental supervision.

All these factors could explain why we found maternal attachment to predict secret-keeping in adolescents not living at home. Particularly, due to the natural maternal instinct to always check on their children and discuss their whereabouts and daily activities. Although regular and open communication facilitates a close relationship, adolescents could find this disruptive and negatively affect their need and want for independence and autonomy. Whereas, fathers who are less active in monitoring and communicating with their children might mean

fewer secrets being kept. This could potentially explain why paternal attachment is unlikely to predict adolescent secret-keeping.

To sum up, our findings suggest that for adolescents currently living with parents, paternal attachment was a significant predictor of frequency in secret-keeping. This could be due to the authoritarian and disciplinarian style/role fathers have in the family, making it 'awkward' and difficult to share information, experiences, and thoughts with them. However, for adolescents who live apart/away from their parents, maternal attachment was a significant predictor. Possibly because of the role mothers play and the amount of time and involvement mothers spend supervising and communicating with their children in comparison to fathers, who are less likely to 'check in' and often busy with work commitments. Whether adolescents lived at home or away, parental monitoring was a consistent and significant predictor of adolescent secret-keeping. Furthermore, adolescents who currently live with their parents tend to keep more secrets than adolescents who do not live with their parents. All of these findings could perhaps be explained by the multiple reasons discussed. However, it is clear that an adolescent's engagement in secret-keeping is strongly influenced by their living situation (whether living with parents or apart).

Gender Differences in Parent-Child Attachment

Our findings suggest female adolescents have greater attachment/relationships with both mother and father compared to males. This can be justified by existing literature suggesting that female adolescents require more emotional support from their parents and that connectedness plays a crucial role in the development of female adolescents more than male adolescents (Gilligan, 1982; Geuzaine et al., 2000). Moreover, females tend to value their relationships and maintain dyadic relationships more, placing higher priority on their relationships over other values in their personal lives (Strough & Berg, 2000). In comparison,

males prioritise their perceived status more than their relationships with others (LaFontana et al., 2010). Specifically, females care more about maintaining and having good quality relationships with others and in general, are more concerned about how their behaviour could potentially affect their relationships. Whereas males are more willing to compromise their relationships, romance, and compassion for reputational status (Gilligan, 1993; LaFontana et al., 2010). Males tend to have more friends and a larger group of friends consisting of more superficial relationships whereas females have fewer but closer friendships (Bryant, 1994; Helsen et al., 2000; Vondra & Garbarino, 2015). Males are also more likely to engage in behaviours that are disapproved of and or may alienate themselves from their parents if it means increasing their perceived social status (Gilligan, 1993; LaFontana et al., 2010).

Alternatively, as previous findings on adolescent disclosure have found (Stattin & Kerr, 2000; Keijsers et al., 2009; Finkenauer & Meeus, 2010; Padilla-Walker et al., 2018) females are more likely to disclose more to other females than males disclose to any gender (male or female) (Jourard & Richman, 1963; Rivernbark, 1971). Females are also more likely to require input/advice and emotional support from their parents than males do, thus may rely on parents more for support and protection, increasing their parent-child bond (Helsen et al., 2000; Camara et al., 2017). In general, females tend to communicate and share more information about their personal lives with their parents, in particular with their mothers than males do. This implies that males tend to not prioritise their relationships as highly as females tend to value their relationships. As a result, males are less likely to prioritise their relationship with their parents, hence, this finding is understandable due to the different characteristics between genders.

Interestingly, females who lived away from their parents were more likely to keep secrets than males who lived away from their parents. This could be a result of females divulging more information to their peers than their parents. To further explain, as females tend to be more communicative and expressive of their feelings and thoughts than males, they may still need to output or express their feelings, thoughts, and experiences to another individual. However, due

to either no longer living with their parents or because they want to “maturely” handle the situation/problem, they may choose to share information with their peers rather than their parents. As they have someone to discuss their feelings and experiences with, they may believe they no longer need to share this information with their parents. Living away from home could also elude a sense of independence, where they perceive it is more sensible and appropriate to handle their own problems individually without telling their parents. This belief would align more with females than males, as females tend to reach puberty earlier than males, are more mature, and want to solve their own problems to prove their competency (Noakes & Rinaldi, 2006). Additionally, males living away from home are more likely to engage in problematic behaviours than girls (Fröjd et al., 2007). This suggests that males are more likely to externalise their negative mood or stress through physical methods, whereas females are less likely to output their stress or negative mood physically and instead may use a more internal approach such as secret-keeping (Hoffmann et al., 2004).

Possibly, it could just be that females tend to have more secrets than males, whether these secrets are private (information completely hidden from peers and parents) or shared secrets (shared information among close friends) (Frijns et al., 2013). It could also be a result of males being less likely to verbalise their feelings, thoughts, and experiences in general (Brody, 2013).

It should be noted that in our sample, there were more males (*n* = 441) than females (*n* = 324); however, our findings still suggested females have greater relationships with their parents than males do. Thus, even though there were more males in our sample and the correlation difference between females and males is small, this strongly implies females, as opposed to males, have a more secure attachment to their parents. Hence, our results and existing findings support females sharing a closer, more secure relationship with both their parents than males do.

Age and the Association with Secret-Keeping

Although our findings did not indicate positive correlations between age and keeping secrets, many existing studies have (Finkenauer et al., 2002; Keijsers et al., 2009, 2010; Frijns et al., 2013; Solís et al., 2015; Jäggi et al., 2016). Adolescence is the stage of development when a child begins to breakthrough their parent's barriers of parental authority, and at different stages of adolescence (early, middle, and late), they encounter unique experiences that they may want to keep private or secret from their parents. Thus, it is only natural that the frequency of secret-keeping may differ depending on the age of the adolescent (Keijsers et al., 2009, 2010; Frijns et al., 2013; Solís et al., 2015; Jäggi et al., 2016).

Research has suggested that when adolescents reach around the age of 16 years old, secrecy towards parents begins to increase (Keijsers et al., 2010). When adolescents reach an age (approximately around 16 to 17 years), they choose to withhold information even when they are confronted by their parents (Darling et al., 2006; Jäggi et al., 2016). Smetana and colleagues (2006) have found that secret-keeping regarding school issues begins to increase with age for adolescent boys but not girls. Adolescent boys aged 17 to 18 had more secrets kept from their parents than adolescent girls who were the same age.

Interestingly, parents and adolescents reported different ages of when adolescent disclosure decreased and secrecy increased (Keijsers et al., 2009). Parents (both mother and father) most commonly reported a decrease in disclosure around the ages of 14 to 15 years. Whereas adolescents believed they gradually decreased disclosure and increased secret-keeping, especially if the adolescent was engaged in delinquent activities (Keijsers et al., 2009). As adolescents get older, their understanding of relationships, others, and the world begins to deepen and becomes more developed (Smetana & Villalobos, 2009). This new understanding increases their desire for autonomy and independence, and through secret-keeping, adolescents are able to express their wants and push for greater independence with less control from their parents (Metzger et al., 2021). This desire for autonomy tends to occur in early

adolescence (10-14 years) and becomes more prominent during the middle to later ages of adolescence, (15-19 years). This is when adolescents are more likely to keep secrets and want to make more independent choices, such as choosing their own subjects at school or choosing to wear clothes that are reflective of their own style (Small et al., 1988). During the ages of 11–18 years is often when delinquency begins to increase, and at age 15 is when delinquent behaviour peaks, possibly explaining the increase in secret-keeping behaviour among older adolescents (Small et al., 1988).

Limitations of this Study and Future Directions

The present study, while contributing to the research area of adolescent secrecy is not without its limitations. In this study, we used Kerr and Stattin's (2000) Adolescent Disclosure Scale, which only assessed the adolescents' perceived opinion on how frequently they kept secrets regarding their everyday activities, personal, peer, and academic lives. Additionally, the Adolescent Disclosure Scale used in this study had only 10 items. There were only one to two questions in relation to each topic (personal, peer, and academic). Future research should expand the scale to include more specific questions about each topic, as well as the inclusion of antisocial behaviours (such as drug, tobacco, and alcohol use, sexual activity, bullying, and skipping classes), as well as their romantic relationships should be examined to understand how often adolescents keep these behaviours secret. This may provide a further understanding of the types of topics adolescents have the tendency to keep private about. This is especially important as these behaviours can easily go unnoticed by the parent; however, antisocial and/or negative behaviours should require the parent's attention so that they can be managed appropriately.

In addition, although parental control was used to measure the frequency of adolescent secret-keeping in the present study, there are many different factors within parental control which need to be taken into consideration. As mentioned, during adolescence when children

tend to misbehave and want greater independence, parental control may rely on adolescent cooperation to successfully work/apply (McMullen, 2004). To assess whether adolescents willingly and effectively cooperate and comply with their parent's rules and restrictions, future research should include and conduct a 'parent version' of the parental control questionnaire. This 'parent version' should inquire about whether they, as parents believe their child listens to and obeys to their expectations. Subsequently, researchers could combine parental reports, adolescent self-reports, and behavioural observational reports (such as providing a situation where the parent has to give the adolescent instructions and observe how the parent and child interact and whether the adolescent cooperates with the parent's requests). This would further our understanding of adolescents' willingness to comply/obey to their parents' rules and expectations and how adolescent cooperation contributes to successful parental control. More importantly, this would assess parental control more accurately and provide knowledge about whether parental control (with or without adolescent cooperation) influences adolescent secret-keeping.

Additionally, future research should examine to what extent (level of strictness) of parental control influences the frequency of adolescent secret-keeping. In particular, examining what types of parental control (specific rules, topics, and limitations) increase adolescents' desire and need to keep specific information secret. By identifying common rules, topics, and or limitations that influence secret-keeping, this would further improve our understanding of the types of parental control that influence adolescent secret-keeping.

Moreover, it would be valuable to examine age, gender, and ethnicity in relation to the types of parental control to understand how specific rules and topics may differ depending on age, gender, and ethnicity. For example, girls are more likely to have stricter monitoring over their leisure activities than boys; this may potentially increase the likelihood of 16- to 18-year-old girls to keep information about their leisure activities secret (Svensson, 2003; Kristjánsson & Sigfúsdóttir, 2009). Future research could explore the age when children no longer obey to

parental control (rules and limitations) and the reliance on parental monitoring to be able to keep the child supervised and under control is required. In addition, what other predictors contribute to parental control not working aside from age or stage of development. Although, it has been expressed that a secure parent-child attachment is important for parental control to work, does this no longer apply once the child reaches a certain age. Research exploring adolescent secret-keeping should further examine these aspects of parental control in more depth to be able to gain an understanding of the intricate dynamics in which parental factors (parental authority, control, and monitoring) influence adolescent behaviour, the development of adolescent autonomy, and communication patterns.

Furthermore, the responses given by participants required the participant to recall their past experiences and memories, which may only be based on the experiences they can remember and thus only capture a small amount of the secrets they may have kept. It is likely that, due to their inability to recall every experience and memory, participants may have provided responses that understated their actual actions. For instance, to a question such as “Do you tell your parent(s) about what you do during your free time?" they may have answered “Sometimes” instead of "Often." In the future, for more precise data, researchers may choose to use a daily diary approach. This might allow for more precise data than reliance on memory of past experiences and memories.

Cultural Limitations

Another limitation of our study was the lack of cultural interpretation. Although our study had a vast range of ethnic groups, the majority of the sample population were NZ European; thus, we attributed and focused on adolescent secret-keeping, parental control, and monitoring all from a Westernised perspective. As a result, adolescents from an Asian or collectivist culture may have different perceptions of parental control and parental monitoring. To further explain, Asian adolescents may perceive “strict” or “high levels” of parental control as an expression of

their parent's affection and care and believe that strict parental control is not their parents attempting to restrict their freedom but instead is their way of looking out for them (Yau & Smetana, 1996; Chao & Tseng, 2002). Whereas, European adolescents view "strict" parental control as intrusive and overbearing, leading to adolescents disobeying their parent's rules (Kakihara et al., 2010). These differences may require future research to examine both parental control, monitoring, and adolescent secret-keeping from a Western and Asian perspective to fully understand how the interpretation of parental authority differs by culture, influencing an adolescent's behaviour to secret-keep.

Another cultural factor to consider is an adolescent's decisions and reasons to keep secrets from their parents, as this may differ by culture (Yau & Smetana, 1996; Chao & Tseng, 2002). Differences in parenting norms, beliefs about topics to discuss with parents, and the acceptability of specific opinions and behaviours, as well as expressions of support and affection, may all differ depending on an individual's culture (Yau & Smetana, 1996; Chao & Tseng, 2002; Yau et al., 2009). Thus, exploring and understanding how in different cultural contexts, parental control and parental monitoring can be perceived differently is a crucial aspect to be able to thoroughly understand how these predictors influence the frequency of adolescent secret-keeping.

Questionnaire Type Response Biases

In addition, due to the context of the study involving secret-keeping as well as the study being questionnaire-type research, participants might have a tendency to provide answers that reflect themselves in a positive or socially desirable way instead of providing answers that are representations of their actual feelings, opinions, and behaviours (social desirability bias) (Suchman, 1962). Social desirability bias is a common bias/effect that occurs in research that uses surveys and questionnaires as primary collection methods (Suchman, 1962). Although to

mitigate potential social desirability bias, this study ensured all participants were aware that the survey was anonymous; however, participants may still be inclined to answer questions in a manner that is socially desirable and fits societal norms. Additionally, all questions were mindfully worded to avoid misleading or encouraging participants to answer in a socially desirable manner.

Moreover, the focus of the study being adolescent secret-keeping is a sensitive and private topic that could lead to underreporting of secret-keeping behaviour by adolescents. Participants may have been reluctant to admit to engaging in behaviours that their parents disapprove of. Hence, they may provide responses that align with their parental expectations and underreport negative behaviours or secretive behaviours. Furthermore, participants were asked to answer questions regarding their relationship with both parents (mother-child attachment and father-child attachment) as well as the degree of strictness of parental control and monitoring. All of these topics are also sensitive matters, which could potentially result in potential social desirability bias in participants' responses. In order to reduce potential social desirability bias, especially in this area of research, the use of parent, child, and teacher report corroboration could possibly increase the accuracy of the data and reduce this response bias. By gathering information from multiple sources, including from the participant's parent/caregiver and the participant's teacher, this could increase the reliability and accuracy of the participants provided responses.

Relevance of Age on Adolescent Secret-Keeping

Adolescents' age is also influential to the frequency of secrets kept (Small et al., 1988; Smetana & Villalobos, 2009; Keijsers et al., 2009, 2010; Metzger et al., 2021). Although the present study did not find significant correlations between age and secret-keeping, existing research have. Plausibly, there would be greater, more significant findings for age differences if the sample included adolescents from early adolescence (10 to 14 years) to late adolescence

(17 to 19 years). This would allow for in-depth analyses of age differences, with a clearer understanding of how at different ages of adolescence, the frequency of secrets kept may differ. Although there are a few studies (Finkenauer et al., 2002) that have focused not only on one stage of adolescence but all ages of adolescence, there is very limited literature with nothing explored recently. Thus, future studies should include all ages of adolescence (10 to 19 years) to further explore the significant differences in the frequency of secret-keeping at each age instead of each stage of adolescence. This is important because, by gaining a clearer understanding of how secret-keeping increases with age, this would be very useful in preventing secret-keeping from becoming habitual. By identifying how age differences contribute to more or less secret keeping, the number of secrets adolescents keep private can be managed at earlier ages.

Strengths of The Current Study

There are some shortcomings to this study, but there are also many strengths. This study found new and unexpected findings to add to the current literature on secret-keeping. The current study is also the first to simultaneously examine parental attachment, parental control, and parental monitoring as predictors of adolescent secret-keeping. The study had a good, balanced range of age, gender, and ethnicity representative of the sample population in New Zealand. The study only covered a small age range; however, it still focused on the most important developmental span of the ages between 16 to 19 years. In addition to adolescents wanting autonomy and independence, during this phase of adolescence, many unique, new experiences and milestones such as learning to drive, exploring romantic relationships, and beginning to make decisions about future career paths happen (Compas et al., 1985). Hence, during this phase, these new milestones adolescents experience may lead to more secrets being kept as their way of gaining autonomy and independence. Often, research looking at parental attachment and adolescent disclosure includes and compares the responses from both

the parent's and child's perspectives instead of just focusing on the child's perspective. However, in the current study, all data was based on the adolescent's self-report (from the child's perspective), allowing for a greater understanding of their cognitive and emotional thought processes, which could be difficult for both parents and child to interpret and understand one another. As parents may find it difficult to control strict levels of parental authority and supervision, children's rebellious beliefs, attitudes, and behaviours are unable to be understood by the parent (Henricson & Roker, 2000). Moreover, no other study has examined 'adolescents living situation' (living at home or living apart) as a predictor to adolescent secret-keeping. This study is the first to find an effect within adolescents living at home to more frequently secret keep.

Many studies (Finkenauer et al., 2002; Keijsers et al., 2010; Dykstra et al., 2020) have discussed age and gender as predictors of adolescent secrecy; however, they have not explored the adolescent's environmental factors, such as whether living with parents or living away from parents predict adolescent secret-keeping. Lastly, this research could help build on the little existing knowledge of adolescent secrecy. As existing literature has primarily focused on adolescent disclosure and less on adolescent secrecy, this study may provide useful and interesting information to potentially increase our understanding of adolescents' likelihood to keep secrets, offering valuable insights for researchers, policymakers, and practitioners.

Conclusion

Secret-keeping seems to be an inherent process in adolescence to obtain autonomy and independence. The results of the current study reflect this. Specifically, the present study found that adolescents who have a secure attachment to their parents are more likely to frequently keep secrets than adolescents who are insecurely attached. Additionally, the amount of knowledge and information the parents have about their child's whereabouts, connections, and

personal life significantly predicts how frequently an adolescent keeps secrets from their parents (parental monitoring). Our findings illustrate the importance of parental monitoring in relation to adolescent secret-keeping. However, due to various reasons, such as parental control relying on cooperation from the adolescent, parental control is unlikely to predict adolescent secret-keeping. Furthermore, depending on whether the adolescent lived with parents or away from parents, this contributed to the frequency of secret-keeping. Particularly, adolescents who live with their parents tend to keep more secrets than those who live apart/away from their parents. Maternal attachment and being a female adolescent were associated with more frequent secret-keeping for adolescents who lived apart from their parents. Whereas, for adolescents living with parents, paternal attachment was a significant predictor of adolescent secret-keeping. For both adolescents living at home and those living away, parental monitoring was a significant predictor of secret-keeping. These findings highlight the importance of the parental role, specifically parental attachment and parental monitoring in facilitating adolescent development and the way the parent influences and shapes the adolescent's communication patterns and likelihood to keep secrets during adolescence.

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Appendix A – QUESTIONNAIRE

Gullone & Robinson (2005) Inventory of Parent and Peer Attachment Revised (IPPA-R)

Part One: Relationship with Mother

Some of the following statements asks about your feelings about your mother or the person who has acted as your mother. If you have more than one person acting as your mother (e.g., a natural mother and a stepmother) answer the questions for the one you feel has most influenced you.

If you are from a single-parent household, please only answer the questions based on the parent (e.g., mother/father) you have/or identify as a parent.

Please read each statement and choose the ONE that tells how true the statement is for you now.

1. My mother respects my feelings
2. I feel my mother is successful as a parent.
3. My mother accepts me as I am.
4. I like to get my mother's point of view on things I'm concerned about.
5. My mother senses when I'm upset about something.
6. I get upset a lot more than my mother knows about. *(R)*
7. When we discuss things, my mother considers my point of view.
8. My mother trusts my judgement.
9. I tell my mother about my problems and troubles.
10. I feel angry with my mother. *(R)*
11. My mother encourages me to talk about my difficulties.
12. I don't get much attention from my mother. *(R)*
13. My mother doesn't understand what I'm going through these days. *(R)*

14. I can count on my mother when I need to get something off my chest.

15. Talking over my problems with my mother makes me feel ashamed or foolish. *(R)*

Note. (R) = Reverse coded Item

Relationship with Father

Some of the following statements asks about your feelings about your father or the person who has acted as your father. If you have more than one person acting as your father (e.g., a natural father and a step-father) answer the questions for the one you feel has most influenced you.

Please read each statement and choose the ONE that tells how true the statement is for you now.

1. My father respects my feelings
2. I feel my father is successful as a parent.
3. My father accepts me as I am.
4. I like to get my father's point of view on things I'm concerned about.
5. My father senses when I'm upset about something.
6. I get upset a lot more than my father knows about. *(R)*
7. When we discuss things, my father considers my point of view.
8. My father trusts my judgement.
9. I tell my father about my problems and troubles.
10. I feel angry with my father. *(R)*
11. My father encourages me to talk about my difficulties.
12. I don't get much attention from my father. *(R)*
13. My father doesn't understand what I'm going through these days. *(R)*
14. I can count on my father when I need to get something off my chest.
15. Talking over my problems with my father makes me feel ashamed or foolish. *(R)*

Kerr and Stattin (2000) Adolescent Disclosure Scale

Part Two: Adolescent Secret-keeping

Here, you will be asked questions about information that you share with your parent(s). Again, please select the answer that best applies to you.

1. Do you talk to your parent(s) at home about how you are doing in the different subjects/courses in school/university?
2. Do you usually tell your parent(s) how school/university was when you get home (how you did on different exams, your relationships with teachers, etc.)?
3. Do you tell your parent(s) about what you do during your free time?
4. Do you tell your parent(s) about what you do when friends out during nights and weekends?
5. If you are out at night, when you get home, do you tell your parents immediately what you have done that evening?
6. Do you tell your parent(s) who you hang out with or who your friends are?
7. Do you tell your parent(s) if you've had a bad day at school/university?
8. Do you talk to your parent(s) when you are worried about something?
9. If you feel guilty about something, do you tell your parent(s)?
10. If you think you will get in trouble with your parent(s), do you tell your parents anyway? (Could be getting a bad grade, bad behaviour or doing something you should not have done)

Kerr and Stattin (2000) Parental Monitoring and Control Scale

Part Three: Parental Monitoring

1. Do your parent(s) know what you do during your free time?
2. Do your parent(s) know who you have as friends during your free time?
3. Do your parent(s) usually know what type of school/work assignments you have?
4. Do your parent(s) know what you spend your money on?
5. Do your parent(s) usually know when you have an exam or paper due at school/university?
6. Do your parent(s) know where you go when you are out with friends at night?
7. Do your parent(s) normally know where you go and what you do after school/university?
8. Do your parent(s) know how you do in different subjects/courses at school/university?
9. In the last month, have your parent(s) ever had no idea of where you were at night? [2]

Part Four: Parental Control

1. Do you need to have your parent(s) permission to stay out late on a weekday evening?
2. Do you need to ask your parent(s) before you decide with your friends what you will do on a Saturday evening?
3. If you have been out very late one night, do your parent(s) require that you explain what you did and whom you were with?
4. Do your parent(s) always require that you tell them where you are at night, who you are with and what you do together?
5. Before you go out on a Saturday night, do your parent(s) require you to tell them where you are going and with whom?

[2] Excluded item in Analyses

Appendix B – ETHICS FORM

Auckland University of Technology Ethics Committee
(AUTEC)

7 July 2023

Ying Wang
Faculty of Culture and Society

Dear Ying

Re Ethics Application: **23/110 How The Quality of Parental Attachment, Parental Control and Monitoring Influences Adolescent Secrecy**

Thank you for your responses to AUTEC's conditions.

Your ethics application has been approved for three years until 7 July 2026.

Non-Standard Conditions of Approval

1. Please remove references to confidentiality in the Information Sheet as the survey is anonymous.
2. Please gain the appropriate permissions for posting recruitment posters at Auckland University.

Non-standard conditions do not need to be submitted to or reviewed by AUTEC unless requested but must be completed before commencing your study.

Standard Conditions of Approval

1. The research is to be undertaken in accordance with the Auckland University of Technology Code of Conduct for Research and as approved by AUTEC.
2. All public facing documents must have the AUTEC approval number and be of a high standard of spelling and grammar. Dates on the Information Sheet(s) and Consent Form(s) must be consistent.
3. Any amendments to the project must be approved by AUTEC prior to being implemented.
4. A progress report is due annually on the anniversary of the approval date.
5. A final report is due at the expiration of the approval period, or, upon completion of project.
6. Any serious or adverse events must be reported to AUTEC, this includes unforeseen issues that might affect continued ethical acceptability of the project.
7. AUTEC grants ethical approval only. You are responsible for obtaining management permission for access from any institution or organisation at which your research is being conducted and you need to meet all ethical, legal, public health, and locality obligations or requirements for the jurisdictions in which the research is being undertaken.

The application number and title need to be referenced on all correspondence related to this project.

All forms are available online http://www.aut.ac.nz/research/researchethics

For any enquiries, please contact ethics@aut.ac.nz
(This is a computer-generated letter for which no signature is required)

The AUTEC Secretariat
Auckland University of Technology Ethics Committee

Cc: ykk7517@autuni.ac.nz; Jay Wood

Appendix C – PARTICIPANT INFORMATION SHEET

Participant Information Sheet

Date Information Sheet Produced:

19 May 2023

Project Title

How The Quality of Parental Attachment, Parental Control and Monitoring Influences Adolescent Secrecy

Hello, My name is Anna Fu and I am a Masters student at the Auckland University of Technology. I would like to invite you to take part in a Masters Research Project on Adolescent Secret-Keeping. Please carefully read the following information below before you decide if you wish to take part in this research. If there are any questions or inquiries regarding this study, please do not hesitate to email the researcher (Anna). Participation in this study is voluntary.

What is the purpose of this research?

The purpose of this study is to identify how frequently an adolescent keeps secrets from their parents. To further explore adolescent secret keeping, this study investigates potential factors such as the parent-child relationship and how this may influence adolescent secret-keeping. From this study, we are hoping to gain a clearer understanding of how the closeness between parent and child could predict how often an adolescent keeps secrets. This study will contribute to expanding knowledge in this area which may in the future help parents, institutions, organisations, and researchers. The findings of this study will be particularly useful for parents as well as individuals as secret keeping is beneficial to the adolescent's development of emotional autonomy.

This research is conducted as part of a thesis for a Master of Arts (Psychology) qualification at AUT. The findings of this study may be used for academic publications.

How was I identified and why am I being invited to participate in this research?

You are invited to participate as you have expressed interest to take part in this research by responding to the URL or QR code on the advert advertised in Auckland High Schools and Universities to recruit participants who are aged 16 to 19 years old in New Zealand. No identifying information will be requested by the study. Participation will be completely anonymous.

How do I agree to participate in this research?

Consent will be assumed when you complete the survey. If you do not want to continue, then you can just close the survey in the web browser. Completion of the study indicates your consent. Your participation in this research is voluntary (it is your choice) and whether or not you choose to participate will neither advantage nor disadvantage you. You are able to withdraw from the study at any time before completing the survey. If you choose to withdraw from the study partway through completing the study, it is not possible for us to remove your data, because your responses are anonymous.

What will happen in this research?

Once you have consented to participating in the study, you will be asked to complete one online questionnaire with two parts. The first part of the survey will involve questions from your perspective of your relationship with your parent(s) (Mother and/or Father or someone who is like a Mother/Father to you). The second part of the survey will ask questions regarding secret-keeping. It would be preferable for the purpose of this study if you complete this questionnaire alone.

What are the discomforts and risks?

Due to this study exploring parent-child relationships and secret-keeping, this could cause you to feel discomfort or emotional distress, you have the option to not participate in this study if you do not want to. You have the right to withdraw at any time. Furthermore, you do not have to answer any question you feel uncomfortable answering.

How will these discomforts and risks be alleviated?

You are allowed to only answer questions you feel comfortable answering and are free to 'skip' any question you do not wish to answer. If further counselling or Mental Health Services are needed or if you just need someone to talk to, please reach out to one of these Helplines:

Youthline: 0800 376 633, talk@youthline.co.nz, Free text 234, Online chat is available at www.youthline.co.nz/web-chat-counselling.html

If you would like to talk to someone: Free call or text 1737 to talk to a trained counsellor about anything.

Anxiety Line: 0800 2694 389 – provides education and support around anxiety.

AUT Student Counselling and Mental Health is able to offer three free sessions of confidential counselling support for adult participants in an AUT research project. These sessions are only available for issues that have arisen directly as a result of participation in the research and are not for other general counselling needs.

To access these services, you will need to:

- Drop into our centre at WB203 City Campus, email counselling@aut.ac.nz or call 921 9292
- Let the receptionist know that you are a research participant, and provide the title of my research and my name and contact details as given in this Information Sheet.

You can find out more information about AUT counsellors and counselling on https://www.aut.ac.nz/student-life/student-support/counselling-and-mental-health

What are the benefits?

Your participation in this study will contribute to knowledge and understanding of adolescent secrecy and the potential factors that might predict the frequency of adolescent secret-keeping in Aotearoa, New Zealand. Additionally, your participation in this study will also greatly help the completion of my Masters degree/thesis.

To thank you for your valuable time and participation in this study, there will be a prize draw with 17 gift cards to be won, with a value of $50 per gift card.

How will my privacy be protected?

Both confidentiality and anonymity will be taken seriously in this study. Confidentiality will be managed by ensuring all information will be kept private from third parties (e.g., schools). Anonymity will be managed by ensuring that participants' data will not be identifiable by anyone, including the researchers in this study. No responses or information will be tracked and all responses in the survey will be anonymous. Participants will not be asked any personal questions involving their experiences or stories, this study will only ask questions to measure the frequency of adolescent secret-keeping and relationship with parents. There will be no follow-up. The data in this study will be stored on a secure AUT server.

What are the costs of participating in this research?

The survey should only take around 10 to 15 minutes of your time. There are no other costs involved.

What opportunity do I have to consider this invitation?

You can complete the survey at any time between July and October 2023 at your convenience.

Will I receive feedback on the results of this research?

A summary of the findings will be accessible at this URL (https://tinyurl.com/AdolSecrecyResults) when the findings have been uploaded. If the findings have not yet been uploaded, it will say "Come Back Later". Unfortunately, individual data and responses will not be provided due to the anonymity of this survey.

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Dr *Ying Wang*, *y.wang@aut.ac.nz*, (+649) 921 999 Ext 5012.

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTEC, *ethics@aut.ac.nz*, (+649) 921 9999 ext 6038.

Whom do I contact for further information about this research?

Please keep this Information Sheet for your future reference. You are also able to contact the research team as follows:

Anna Fu ykk7517@autuni.ac.nz

Appendix D – PARTICIPANT CONSENT FORM

AUT

Project Title

How The Quality of Parental Attachment, Parental Control and Monitoring Influences Adolescent Secrecy

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Whom do I contact for further information about this research?

Please keep this Information Sheet for your future reference. You are also able to contact the research team as follows:

Anna Fu ykk7517@autuni.ac.nz

Approved by the Auckland University of Technology Ethics Committee on *7 July 2023*, AUTEC Reference number *23/110*

Download a copy of this here: Participant Information Sheet

Have you read the information above? Do you wish to participate in this study?

◯ Yes, I have read the information and I wish to participate in this study.

◯ No, I do not wish to participate in this study.

→

Appendix E – STUDY ADVERT POSTER

DO YOU KEEP SECRETS?

WE ARE LOOKING FOR INDIVIDUALS AGED 16-19 TO PARTICIPATE IN OUR STUDY!

This research is interested in identifying how often adolescents keep secrets and if this is influenced by their relationship with their parents.

PARTICIPATION INCLUDES:
Completing an Online Survey
Takes 10 - 15 Minutes

Parental Relationships and Secret Keeping may be sensitive topics for some people and may trigger distress. Participation is voluntary and you may withdraw at any time.

Participation in this project is anonymous.

PARTICIPATION IN THIS STUDY ENTERS INTO A GIFT CARD PRIZE DRAW OF 17 GIFT CARDS OF $50 TO BE WON

TO FIND OUT MORE
tinyurl.com/SecrecyStudy

Contact Details
Primary Researcher: Anna Fu
yhk7617@autuni.ac.nz

AUT