



Contextual correlates of loneliness in adolescents

Neda Bayat^{a,*}, Tineke Fokkema^{b,c}, Suhreta Mujakovic^d, Robert A.C. Ruiter^a

^a Department of Work and Social Psychology, Faculty of Psychology and Neuroscience, Maastricht University, Maastricht, The Netherlands

^b Netherlands Interdisciplinary Demographic Institute (NIDI)-KNAW/University of Groningen, The Hague, The Netherlands

^c Department of Public Administration and Sociology, Erasmus University Rotterdam, Rotterdam, The Netherlands

^d Department of Knowledge & Innovation, South Limburg Public Health Service, The Netherlands

ARTICLE INFO

Keywords:

Loneliness
Adolescent
School
Social media
Contextual factors

ABSTRACT

Purpose: Loneliness is a common problem that can affect an individual's physical and mental wellbeing. While loneliness has been extensively researched among older people, relatively few studies have investigated loneliness in the adolescent population. In this study, we aim to explore the association between loneliness and contextual factors in a large sample of young people.

Data and Methods: Data stem from the "National Youth Health Monitor" of the Dutch region of South Limburg. Respondents were 7956 Dutch adolescents aged between 12 and 18. Multivariate logistic analyses were performed to assess the strength of association between loneliness and factors in the domains of family, school, and social media.

Results: In the current study, 19.4% of adolescents reported being lonely. Parental divorce, having an ill family member, being bullied at school, poor student-teacher relationship, and problematic use of social media were factors significantly associated with loneliness.

Practice implication: Family- and school-based awareness programs may help protect students from developing problematic levels of loneliness.

1. Introduction

Loneliness is generally understood as the unpleasant feeling that takes place when one's network of social relationships is deficient in some important way, either quantitatively or qualitatively (Perlman & Peplau, 1981). It can be a stressful phenomenon that is associated with adverse physical and mental health outcomes, and increased morbidity and mortality in later life (De Jong-Gierveld, Van Tilburg, & Dykstra, 2006; Holt-Lunstad, Smith, Baker, Harris, & Stephenson, 2015). Loneliness has been predominantly considered a problem affecting older adults, due to the presence of multiple risk factors such as health decline and loss of a partner (Fokkema, De Jong Gierveld, & Dykstra, 2012; Hansen & Slagvold, 2016). Accordingly, most intervention and prevention programs are designed specifically for this age group (Dykstra, 2009; Masi, Chen, Hawkey, & Cacioppo, 2011; Patel, Wardle, & Parikh, 2019). However, studies suggest that loneliness not only peaks in older adults but also among adolescents (Barreto et al., 2021; Yang & Victor, 2011). According to Statistics Netherlands (CBS), 1 in 3 people aged

15–24 report some degree of loneliness (25.2% sometimes, 9% frequently), which is as high as the prevalence in older adults (Statistics Netherlands, 2019). Lonely adolescents report higher rates of depression and social anxiety, and poorer self-rated health (Goosby, Bellatorre, Walsemann, & Cheadle, 2013; Heinrich & Gullone, 2006). Considering the wide array of negative consequences of loneliness for youth, it is essential to develop interventions that are designed specifically for adolescents, which require a more thorough understanding of youth-related factors (Eccles & Qualter, 2021).

Research tends to emphasize personal characteristics such as shyness, low self-esteem, and poor social skills to explain loneliness in adolescents (Mahon, Yarcheski, Yarcheski, Cannella, & Hanks, 2006). However, young people's development is a dynamic process arising from complex interactions between different levels of social contexts (Bronfenbrenner, 1979), and involves biological, psychological, and social changes, including challenging relationships and emotional sensitivity (Moksnes, Bradley Eilertsen, & Lazarewicz, 2016). The importance of context in adolescents' mental development is

* Corresponding author at: Department of Work and Social Psychology, Faculty of Psychology and Neuroscience, Maastricht University, P.O. Box 616, 6200 MD Maastricht, The Netherlands.

E-mail addresses: n.bayat@maastrichtuniversity.nl (N. Bayat), fokkema@nidi.nl (T. Fokkema), Suhreta.Mujakovic@ggdzl.nl (S. Mujakovic), r.ruiter@maastrichtuniversity.nl (R.A.C. Ruiter).

<https://doi.org/10.1016/j.chilyouth.2021.106083>

Received 19 July 2020; Received in revised form 1 January 2021; Accepted 24 May 2021

Available online 26 May 2021

0190-7409/© 2021 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

highlighted in Bronfenbrenner's ecological systems theory, which conceptualizes the transactional nature of multiple levels of influence on human growth (Bronfenbrenner, 1979). This theory is used to identify factors that can explain the development of mental health outcomes (Eriksson, Ghazinour, & Hammarström, 2018).

The most proximal system in the ecological model is the microsystem, which includes the immediate social contexts of the individual (Bronfenbrenner & Morris, 1998). Family and school are two key and well-known contexts in the microsystem (Bronfenbrenner, 1977; Maes, Vanhalst, Spithoven, Van den Noortgate, & Goossens, 2016). However, recent increases in the use of mobile technologies and the internet have introduced new contexts such as social media for today's youth (Johnson & Puplampu, 2008; Lenhart, Arafeh, & Smith, 2008). Different social relationships are formed within these distinct contexts which may fulfill different social needs (Weiss, 1973), and play substantial roles on adolescents' psychological well-being (Guo, Hopson, & Yang, 2018). Consequently, any deficiency or disruption – whether qualitative or quantitative – in interpersonal relationships might lead to the feelings of loneliness (Hawkey & Capitano, 2015; Perlman & Peplau, 1981). In this study, we explored the association between loneliness and problems/deficiencies in relationships within these three contexts of the microsystem: family, school, and social media.

Family, as an individual's primary social context, sets the foundation for positive interactions in interpersonal relationships (Ackerman et al., 2013; Finkenauer, Willems, Weise, & Bartels, 2019). One of the main factors that negatively affects relationships within the family context, both quantitatively and qualitatively, is disruptions in family structure (Magnuson & Berger, 2009), which may induce feelings of loneliness (Civitci, Civitci, & Fiyakali, 2009; Lasgaard, Armour, Bramsen, & Goossens, 2016). Empirical studies have demonstrated that these disruptions often coincide with a major negative life event, such as parental divorce or illness of a family member (Lasgaard et al., 2016). In the face of such events, the emotional link between the parents and the adolescent is disrupted and/or the care for the adolescent deteriorates. This leads to a decline in the adolescent's perceived social support from the family. Adolescents from such families tend to experience lower self-confidence, which triggers a variety of emotional problems, including loneliness (Lasgaard et al., 2016; Ren & Ji, 2019). We hypothesize that the occurrence of major negative events in the family is positively correlated with loneliness among adolescents (Hypothesis 1).

For most adolescents, school life – next to their family life – is important and profoundly influences their psychological well-being (Hanish et al., 2016; Weare, 2000; Weeks & Asher, 2012). The school context encompasses interactions with classmates and teachers. Strong peer relationships at school are considered to be a significant resource against loneliness (Weeks & Asher, 2012), whereas problematic relationships such as victimization are a well-established predictor of loneliness in adolescence (Hawker & Boulton, 2000; Vanhalst, Luyckx, & Goossens, 2014; Woodhouse, Dykas, & Cassidy, 2012). Such an aversive social experience is expected to impact adolescents' abilities to relate to others and to develop close relationships (Rokach, 1989). Restraints in these interpersonal processes could predispose individuals to isolation (Segrin, Nevarez, Arroyo, & Harwood, 2012). The quality of the student-teacher relationship is likewise essential to socio-emotional development (Burgess, Ladd, Kochenderfer, Lambert, & Birch, 1999), and how students feel about their teachers is identified as an important characteristic of this relationship (Bronfenbrenner, 1979). Negative feelings toward teachers lead to emotional insecurity and a poorer sense of belonging in students (Ibrahim & El Zaatari, 2020), which can bring about a variety of psychosocial problems, such as loneliness (Baumeister, 2011). We hypothesize that impaired relationships at school are positively correlated with loneliness among adolescents (Hypothesis 2).

Adolescents appear to be particularly fascinated by communication technologies, which have become an inseparable part of their lives and relationships (Milani, Osualdella, & Di Blasio, 2009). Of all online activities, social media offers a platform for adolescents to stay connected

to friends and develop an online identity in order to experience a sense of community and social acceptance (Valkenburg, Sumter, & Peter, 2011). However, these technologies create interpersonal challenges, namely bullying (referred to as cyberbullying) (Kircaburun et al., 2019; National Academies of Sciences, Engineering, and Medicine, 2016). Research suggests a bidirectional and dynamic association between loneliness and social media use (Nowland, Necka, & Cacioppo, 2018). Lonely teenagers attempt to compensate for their lack of social contacts by finding refuge on the internet, and become more vulnerable to cybervictimization, which in turn enhances feelings of loneliness (Peter, Valkenburg, & Schouten, 2005; Van den Eijnden, Vermulst, Van Rooy, & Meerkerk, 2006). In addition, excessive use of the internet results in less time spent interacting face-to-face, intensifying levels of depression and loneliness (Brenner, 1997). We expect disruptive aspects of social media use to be positively correlated with loneliness among adolescents (Hypothesis 3).

2. Method

2.1. Data source and participants

This is a cross-sectional exploratory study, using data from the "National Youth Health Monitor" of the Dutch region of South Limburg, collected between September 2015 and December 2015. This survey is conducted once every four years by the Regional Public Health Services (GGD) across the Netherlands to gain insight into the health behavior (e.g. eating habits, smoking, alcohol consumption) and health status of young people. The survey protocol was reviewed and approved by the Medical Ethics Review Committee of the University of Amsterdam (Academic Medical Center) in June 2015.¹

All schools in South Limburg were approached for the survey. Only second- and fourth-grade classes were invited to participate. There were no additional inclusion or exclusion criteria. Parents and adolescents were informed about the Health Monitor a few weeks beforehand via an information letter. Survey participation was anonymous and voluntary, and the child's parents (or guardians) had to give informed consent. Students could also object against their own participation. The intended mode of assessment was a computerized self-administered questionnaire. All participants filled in the questionnaires during a 1-hour teaching session in the presence of a teacher.² Thirty-two out of 33 schools agreed to cooperate, with an average student response rate of 70%. This resulted in a final sample of 7956 adolescents (50.4% female).

2.2. Measures

Loneliness is the dependent variable, and was measured with a single direct question, "Do you ever feel lonely?", with the response options "yes, often", "yes, sometimes", "seldom", and "no". We aimed to address the presence of loneliness, hence adolescents were considered lonely if the answer was "yes, often" or "yes, sometimes", similarly to other studies (Stancliffe et al., 2007; Taube, Kristensson, Midlöv, Holst, & Jakobsson, 2013).

For *family* context, we included two variables representing major life events that occur in the family: parental divorce and illness of a family member. These were measured by the questions "Are your parents divorced?" and "Is there someone at your home (the house or family where you are most often) who has been ill or disabled (physically or psychologically) longer than three months?". For both these questions there were two response options: "yes" and "no".

¹ This questionnaire-based survey did not fall within the scope of the Medical Research Involving Human Subjects Act (WMO), as participants were not subjected to actions or imposed a behavior.

² The method of participation is described in detail at <https://www.volksgesondheidzorg.info/onderwerp/gezondheidsmonitor-jeugd/inleiding>.

To investigate the *school* context, one peer-related variable (bullying victimization) and one teacher-related variable (student-teacher relationship) were included. Bullying victimization was addressed by the question “In the past three months, how often have you been bullied at school?”.³ Answer options were “never”, “less than twice a month”, “2 or 3 times a month”, “about once a week”, and “several times a week”. The adolescent was considered “bullied” if either of the last two options were chosen. The student-teacher relationship was assessed by the response to the “yes/no” question “Are the teachers not nice?”.⁴

For *social media* context, we included two variables: cyberbullying and problematic social media use. Cyberbullying was measured by the question “How often have you been bullied via the internet or mobile phone in the last three months?”.⁵ Answer options were “never”, “less than twice a month”, “2 or 3 times a month”, “about once a week”, and “several times a week”. The participant was considered “cyberbullied” if either of the last two options were chosen. Problematic social media use was measured via a scale including 7 items: “How often do you find it difficult to deal with stopping use of social media?”, “How often do others say (e.g. parents or friends) that you should spend less time on social media?”, “How often do you prefer using social media than spending time with others (e.g. friends or parents)?”, “How often do you feel restless, stressed or annoyed when you are not on social media?”, “How often do you rush through your homework to use social media?”, “How often do you use social media because you feel bad?”, and “How often are you short on sleep because of social media use?”. Answer options were “never”, “rarely”, “sometimes”, “often”, and “very often”, which were scored 0–4, respectively. Use of social media was considered problematic if the averaged outcome was larger than 2.

Three control variables were also included in this study: gender (0 = male; 1 = female), age (continuous), and ethnicity. For the latter, a dichotomous variable (0 = native Dutch, 1 = non-native) was computed based on the country of origin of the child and his/her parents. According to the CBS definition, persons are considered native Dutch if both of their parents were born in the Netherlands.⁶ All other cases are considered as non-native Dutch, which includes ethnic backgrounds from 118 different countries.⁷

2.3. Statistical analysis

Descriptive statistics were first performed to calculate frequencies, percentages, means, and standard deviations. Next, univariate logistic regression analyses were conducted to examine the individual association between each study variable and loneliness. All variables were then included in a multivariate logistic regression to examine the unique

³ The definition of bullying was provided in the questionnaire: “Bullying is for example swearing, gossiping, sending annoying messages, taking something away, spitting, or excluding someone. Bullying here means that a person is being harassed by others in a way that this person does not like at all”.

⁴ The question was a checkbox item on the main question “Why don’t you like school so much?” for those who indicated so.

⁵ The definition of cyberbullying was provided in the questionnaire: “The following questions are about bullying via the internet or mobile phone. It’s about bullying in a way the other person does not like at all. Examples: berating someone over the phone; making threats, for example in a tweet; spreading nasty gossip about someone on the internet; posting annoying photos or videos of someone on the internet, for example on YouTube”.

⁶ In this study an adolescent is still considered as native Dutch if one of the parents is born in the Netherlands and the data for the other is missing, or if the child was born in the Netherlands and the data for the parents’ birthplace is missing.

⁷ Largest non-Dutch ethnicities were from Germany (262), Morocco (198), Belgium (114), and Indonesia (63).

Table 1
Descriptive statistics (N = 7956).

Variable	N (%) / Mean (SD)
Loneliness	1511 (19.4)
Parental divorce	2083 (27.5)
Sick family member	1307 (17.2)
Bullied at school	235 (3.0)
Poor student-teacher relationship	542 (6.8)
Bullied via internet	78 (1.0)
Problematic social media use	945 (12.1)
Age	14.3 (1.24)
Female	4009 (50.4)
Non-native	1493 (18.8)

contribution of each predictor to the explanation of loneliness⁸. The regression models were adjusted for age, gender, and ethnicity.⁹ The adjusted odds ratios with 95% CIs, and p-values were reported. All analyses were conducted using SPSS version 25.0.

3. Results

3.1. Sample characteristics and prevalence of loneliness

Table 1 presents descriptive statistics of all variables used in the analyses. Self-reported prevalence of loneliness was 19.4% (26.9% for females and 11.7% for males). Average respondent age was 14.3 years (SD = 1.24). Reported prevalence of loneliness among the native-Dutch group (81.2%, n = 6462) was 18.4%, and among non-native Dutch (18.8%, n = 1493) 23.9%. About a quarter of respondents (26.2%) had experienced parental divorce, and 17.2% reported having an ill family member. The percentage of respondents who were bullied at school and via the internet was 3% and 1%, respectively. Poor student-teacher relationship was identified by 6.8% of students. Out of all respondents, 12.1% indicated problematic social media use.

3.2. Associations between loneliness and contextual factors

The results of the univariate and multivariate analyses are summarized in Table 2. Based on univariate logistic regression analyses, all variables were positively associated with loneliness. Multivariate analyses with predictors entered together in the model revealed that parental divorce, experiencing illness of a close family member, being bullied at school, poor student-teacher relationship, and problematic use of social media were factors in the domains of school, family, and social media significantly associated with loneliness.

4. Discussion

In this study, we explored contextual correlates of loneliness in adolescents (12–18yrs) by examining family-, school- and social media-related contexts while controlling for the background characteristics of age, gender, and ethnicity. Using large-scale data from the 2015 Youth Health Monitor of South Limburg, we found a moderately high (19.4%) prevalence of loneliness in this adolescent population.

We found that participants with divorced parents have a higher likelihood of loneliness. Similarly to other studies, adolescents’ loneliness is predicted by interparental conflicts and low family cohesion (Johnson, Lavoie, & Mahoney, 2001). Divorce leads to changes in the family structure, which in turn increases the risk of straining emotional

⁸ There were in total 539 cases of missing values that were excluded from the regression model (listwise missing value deletion). They were assumed to be random and the proportion was small (6.8%).

⁹ The interaction effect for the independent variables with control variables was assessed, and was not significant.

Table 2
Regression of adolescent loneliness on family-, school- and social media-related factors and background characteristics.

Variable	Univariate Unadjusted OR (CI 95%)	Multivariate Adjusted OR (CI 95%)
Family		
Parental divorce (ref: no)	1.49 (1.32–1.68) ***	1.34 (1.18–1.53) ***
Sick family member (ref: no)	2.14 (1.87–2.45) ***	1.88 (1.63–2.17) ***
School		
Bullied at school (ref: no)	2.10 (1.59–2.78) ***	1.62 (1.18–2.23) **
Poor student-teacher relationship (ref: no)	1.44 (1.17–1.86) ***	1.28 (1.03–1.60) *
Social Media		
Bullied via internet (ref: no)	2.31 (1.44–3.71) **	1.46 (0.86–2.47)
Problematic social media use (ref: low)	1.72 (1.47–2.01) ***	1.56 (1.32–1.84) ***
Control variables		
Age (continuous)	1.15 (1.09–1.20) ***	1.16 (1.11–1.22) ***
Gender (ref: male)	2.76 (2.44–3.12) ***	2.68 (2.36–3.04) ***
Ethnicity (ref: native Dutch)	1.39 (1.21–1.59) ***	1.36 (1.17–1.57) ***

***($p < 0.001$), **($p < 0.01$), *($p < 0.05$); Adjusted R2 = 0.11.

ties between parents and children (Guttman & Rosenberg, 2003). Children may have to deal with unstable and vulnerable parents while stability and support is crucial in their changing life situation (Hetherington, 2003). Consequently, the increased parent-child emotional distance triggers feelings of rejection and loneliness (Johnson et al., 2001). As predicted, we found that having an ill family member is associated with loneliness. This concurs with narrative interviews with adolescents who had a parent affected by cancer. Participants expressed experiencing a type of loneliness they had never felt before. In particular, they had missed their (ill) parents even before they died, as the illness had caused changes in the parent, both in character and appearance (Karlsson, Andersson, & Ahlström, 2013). To protect their children's emotions, ill parents tend to hide their real feelings about the disease, which deteriorates the quality of the relationship with their children (Junttila, Vauras, & Laakkonen, 2007). Moreover, siblings of ill children identify high levels of anxiety and isolation (Bendor, 1990; Sourkes, 1988).

We also documented that school bullying was significantly associated with loneliness. This is in line with findings from large international surveys that being the victim of bullying is significantly and positively associated with loneliness among youth (Due et al., 2005; Fleming & Jacobsen, 2009). One plausible mechanism for this association is that bullying through social anxiety makes the victim discreet and fearful of others, withdrawing from interpersonal contacts (Kochenderfer-Ladd & Wardrop, 2001; Williams, Langhinrichsen-Rohling, Wornell, & Finnegan, 2017). Our findings also indicate a significant association between poor student-teacher relationship and loneliness. When the teacher-child relationship is characterized by conflict and lack of bond, the child is expected to experience distress and other negative emotional experiences, such as loneliness (Galanaki & Vassilopoulou, 2007). Moreover, negative impressions about teachers may limit the extent to which the students rely on that relationship as a source of support, and may reinforce feelings of anger, anxiety, and alienation. All these may predispose the child to withdraw from school activities and become lonely (Mercer & DeRosier, 2010).

Contrary to our expectations, after controlling for other factors we did not observe a positive association between cyberbullying victimization and loneliness. This contrasts with earlier findings claiming that cyberbullying victimization results in stronger negative psychosocial effects than traditional bullying victimization (Bradshaw, 2013; Brighi et al., 2012). This is possibly due to the small percentage of respondents who have been bullied via the internet. A plausible explanation for the low prevalence of bullying (both at school and in social media) is the considerable number of anti-bullying interventions carried out in the Dutch primary education system, among which some programs (Alles

Kidzzz, Plezier op School, PRIMA, KiVa, and Taakspel) have been proven effective (de Castro et al., 2018)

We found that loneliness was higher in female respondents than in males. This is consistent with the hypothesis that females become lonelier than males during and after adolescence, as females are more at risk for adolescent-onset internalization of problems (Martel, 2013). It is however in contrast with a recent meta-analysis study reporting slightly higher levels of loneliness for male adolescents than females (Maes et al., 2019). In relation to age, we observed a positive association between age and loneliness. This is in line with the results of a study among adolescents internationally (Mahon et al., 2006).

Our results revealed a significant association between loneliness and being non-native. This could be explained by findings from previous studies suggesting that adolescents who are not native Dutch are generally more likely to experience difficulties such as discrimination and low self-esteem (Benner et al., 2018; Neto, 2002; Priest et al., 2013). Adolescents with low self-esteem tend to feel less accepted by their peers, which in turn is a risk factor for subsequent feelings of loneliness (Mahon et al., 2006; Vanhalst, Luyckx, Scholte, Engels, & Goossens, 2013).

5. Study limitations

Our findings should be interpreted in the light of several potential limitations. First, the study is cross-sectional, therefore the directionality or causality of the relationships cannot be inferred. Longitudinal studies are required to better unravel the observed relationships. It might be argued that, given the stigma associated with loneliness in young adults, the use of direct questions could lead to participants providing socially acceptable answers. Moreover, using single-item questions does not capture the multi-faceted nature of loneliness, and increases the likelihood that they may be interpreted differently by different respondents. These issues could be avoided in future research by including multiple items that obtain information about loneliness more indirectly. A further limitation is that we were not able to distinguish between social and emotional loneliness in our study.¹⁰ Future studies may be able to distinguish between these two types of loneliness in order to gain a better understanding of loneliness correlates.

6. Conclusion and implication

Despite these shortcomings, this study suggests that adolescent loneliness deserves to be recognized as an important social/mental health problem. Unfortunately, most current prevention programs on loneliness in the Netherlands, such as *Eén tegen Eenzaamheid* [United against loneliness], focus on the senior population. Moreover, a recent international meta-analysis confirmed that loneliness has been merely considered as a primary outcome of intervention in youth (Eccles & Qualter, 2021). The outcome of this study stresses the need for educational interventions that focus on preventing loneliness among adolescents in different contexts and settings. As found in this study, family function and factors play an influential role. Parents and guardians could therefore benefit from family-based educational programs or group sessions focused on promoting effective family interaction with the children after a challenging life event in the family. In addition, families can learn to monitor the safety of communication in technological contexts, impose limits on non-essential internet use, and offer supportive guidance and constructive communication about the use of social media. School-wide awareness programs to inform, equip, and raise the level of awareness of teachers and officials about the importance and mechanisms of loneliness among adolescents can contribute to

¹⁰ Emotional loneliness stems from the absence of a close emotional bond. Social loneliness stems from the absence of a network of relationships (Weiss, 1973).

lessen such feelings. A possible future work is to look at the mesosystem-level contextual determinants of loneliness, which requires an understanding of the inter-relations among contexts within the microsystem.

CRedit authorship contribution statement

Neda Bayat: Conceptualization, Methodology, Software, Writing - original draft. **Tineke Fokkema:** Supervision, Writing - review & editing. **Suhreta Mujakovic:** Supervision, Resources. **Robert A.C. Ruiter:** Supervision, Writing - review & editing.

Appendix A. Supplementary material

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.childev.2021.106083>.

References

- Ackerman, R. A., Kashy, D. A., Donnellan, M. B., Neppl, T., Lorenz, F. O., & Conger, R. D. (2013). The interpersonal legacy of a positive family climate in adolescence. *Psychological Science, 24*(3), 243–250.
- Barreto, M., Victor, C., Hammond, C., Eccles, A., Richins, M. T., & Qualter, P. (2021). Loneliness around the world: Age, gender, and cultural differences in loneliness. *Personality Individual Differences, 110*, 66.
- Baumeister, R. F. (2011). Need-to-belong theory. In P. A. M. Van Lange, A. W. Kruglanski, & E. T. Higgins (Eds.), *Handbook of Theories of Social Psychology* (pp. 121–140). Sage Publications Ltd.
- Bendor, S. J. (1990). Anxiety and isolation in siblings of pediatric cancer patients: The need for prevention. *Social Work in Health Care, 14*(3), 17–35.
- Benner, A. D., Wang, Y., Shen, Y., Boyle, A. E., Polk, R., & Cheng, Y.-P. (2018). Racial/ethnic discrimination and well-being during adolescence: A meta-analytic review. *American Psychologist, 73*(7), 855–883.
- Bradshaw, C. P. (2013). Preventing bullying through positive behavioral interventions and supports (PBIS): A multitiered approach to prevention and integration. *Theory Into Practice, 52*(4), 288–295.
- Brenner, V. (1997). Psychology of computer use: XLVII. Parameters of Internet use, abuse and addiction: The first 90 days of the Internet Usage Survey. *Psychological Reports, 80*(3), 879–882.
- Brighi, A., Melotti, G., Guarini, A., Genta, M. L., Ortega, R., Mora-Merchán, J., ... Thompson, F. (2012). Self-esteem and loneliness in relation to cyberbullying in three European countries. In Q. Li, D. Cross, & P. K. Smith (Eds.), *Cyberbullying in the global playground: Research from international perspectives* (pp. 32–56). Wiley Blackwell.
- Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist, 32*(7), 513–531.
- Bronfenbrenner, U. (1979). *The ecology of human development*. Harvard University Press.
- Bronfenbrenner, U., & Morris, P. A. (1998). The ecology of developmental processes. In W. Damon, & R. M. Lerner (Eds.), *Handbook of child psychology: Theoretical models of human development* (pp. 993–1028). John Wiley & Sons Inc.
- Burgess, K. B., Ladd, G. W., Kochenderfer, B. J., Lambert, B. J., & Birch, S. (1999). Loneliness during early childhood: The role of interpersonal behaviors and relationships. In S. Hymel, & K. Rotenberg (Eds.), *Loneliness in children and adolescents: Current perspectives* (pp. 109–134). Cambridge University Press.
- de Castro, B. O., Mulder, S., Van der Ploeg, R., Onrust, S., Van der Berg, Y., Stoltz, S., ... Scholte, R. (2018). Wat werkt tegen pesten? *Effectiviteit van kansrijke programma's tegen pesten in de Nederlandse onderwijspraktijk*. Nationaal Regieorgaan Onderwijsonderzoek.
- Civiti, N., Civiti, A., & Fiyakali, N. C. (2009). Loneliness and life satisfaction in adolescents with divorced and non-divorced parents. *Educational Sciences: Theory & Practice, 9*(2), 513–525.
- De Jong-Gierveld, J., Van Tilburg, & Dykstra, P. A. (2006). Loneliness and social isolation. In A. Vangelisti, & D. Perlman (Eds.), *Cambridge handbook of personal relationships* (pp. 485–500). Cambridge University Press.
- Due, P., Holstein, B. E., Lynch, J., Diderichsen, F., Gabhain, S. N., Scheidt, P., & Currie, C. (2005). Bullying and symptoms among school-aged children: International comparative cross sectional study in 28 countries. *European Journal of Public Health, 15*(2), 128–132.
- Dykstra, P. A. (2009). Older adult loneliness: Myths and realities. *European Journal of Ageing, 6*(2), 91–100.
- Eccles, A. M., & Qualter, P. (2021). Review: Alleviating loneliness in young people – a meta-analysis of interventions. *Child and Adolescent Mental Health, 26*(1), 17–33.
- Eriksson, M., Ghazinour, M., & Hammarström, A. (2018). Different uses of Bronfenbrenner's ecological theory in public mental health research: What is their value for guiding public mental health policy and practice? *Social Theory & Health, 16*(4), 414–433.
- Finkenauer, C., Willems, Y. E., Weise, M., & Bartels, M. (2019). The social context of adolescent relationships. In T. Burns, & F. Gottschalk (Eds.), *Educating 21st century children: Emotional well-being in the digital age (414-434)* (pp. 414–434). OECD Publishing.
- Fleming, L. C., & Jacobsen, K. H. (2009). Bullying and symptoms of depression in Chilean middle school students. *Journal of School Health, 79*(3), 130–137.
- Fokkema, T., De Jong Gierveld, J., & Dykstra, P. A. (2012). Cross-national differences in older adult loneliness. *The Journal of Psychology, 146*(1–2), 201–228.
- Galanaki, E. P., & Vassilopoulou, H. D. (2007). Teachers and children's loneliness: A review of the literature and educational implications. *European Journal of Psychology of Education, 22*(4), 455–475.
- Goosby, B. J., Bellatorre, A., Walsemann, K. M., & Cheadle, J. E. (2013). Adolescent loneliness and health in early adulthood. *Sociological Inquiry, 83*(4), 505–536.
- Guo, Y., Hopson, L. M., & Yang, F. (2018). Socio-ecological factors associated with adolescents' psychological well-being: A multilevel analysis. *International Journal of School Social Work, 3*(1).
- Guttmann, J., & Rosenberg, M. (2003). Emotional intimacy and children's adjustment: A comparison between single-parent divorced and intact families. *Educational Psychology, 23*(4), 457–472.
- Hanish, L. D., Martin, C. L., Miller, C. F., Fabes, R. A., DeLay, D., & Updegraff, K. A. (2016). Social harmony in schools: A framework for understanding peer experiences and their effects. In K. R. Wentzel, & G. B. Ramani (Eds.), *Handbook of social influences in school contexts: Social-emotional, motivation, and cognitive outcomes* (pp. 48–62). Taylor and Francis Inc.
- Hansen, T., & Slagsvold, B. (2016). Late-life loneliness in 11 European countries: Results from the generations and gender survey. *Social Indicators Research, 129*(1), 445–464.
- Hawker, D. S., & Boulton, M. J. (2000). Twenty years' research on peer victimization and psychosocial maladjustment: A meta-analytic review of cross-sectional studies. *The Journal of Child Psychology and Psychiatry and Allied Disciplines, 41*(4), 441–455.
- Hawkey, L. C., & Capitanio, J. P. (2015). Perceived social isolation, evolutionary fitness and health outcomes: A lifespan approach. *Philosophical Transactions of the Royal Society B: Biological Sciences, 370*(1669), 20140114.
- Heinrich, L. M., & Gullone, E. (2006). The clinical significance of loneliness: A literature review. *Clinical Psychology Review, 26*(6), 695–718.
- Hetherington, E. M. (2003). Social support and the adjustment of children in divorced and remarried families. *Childhood, 10*(2), 217–236.
- Holt-Lunstad, J., Smith, T. B., Baker, M., Harris, T., & Stephenson, D. (2015). Loneliness and social isolation as risk factors for mortality: A meta-analytic review. *Perspectives on Psychological Science, 10*(2), 227–237.
- Ibrahim, A., & El Zaatari, W. (2020). The teacher–student relationship and adolescents' sense of school belonging. *International Journal of Adolescence Youth, 25*(1), 382–395.
- Johnson, G., & Ptoplamp, K. (2008). A conceptual framework for understanding the effect of the Internet on child development: The ecological techno-subsystem. *Canadian Journal of Learning and Technology, 34*, 19–28.
- Johnson, H. D., Lavoie, J. C., & Mahoney, M. (2001). Interparental conflict and family cohesion: Predictors of loneliness, social anxiety, and social avoidance in late adolescence. *Journal of Adolescent Research, 16*(3), 304–318.
- Junttila, N., Vauras, M., & Laakkonen, E. (2007). The role of parenting self-efficacy in children's social and academic behavior. *European Journal of Psychology of Education, 22*(1), 41–61.
- Karlsson, E., Andersson, K., & Ahlström, B. H. (2013). Loneliness despite the presence of others—Adolescents' experiences of having a parent who becomes ill with cancer. *European Journal of Oncology Nursing, 17*(6), 697–703.
- Kircaburun, K., Kokkinos, C. M., Demetrovics, Z., Király, O., Griffiths, M. D., & Colak, T. S. (2019). Problematic online behaviors among adolescents and emerging adults: Associations between cyberbullying perpetration, problematic social media use, and psychosocial factors. *International Journal of Mental Health Addiction, 17*(4), 891–908.
- Kochenderfer-Ladd, B., & Wardrop, J. L. (2001). Chronicity and instability of children's peer victimization experiences as predictors of loneliness and social satisfaction trajectories. *Child Development, 72*(1), 134–151.
- Lasgaard, M., Armour, C., Bramsen, R. H., & Goossens, L. (2016). Major life events as predictors of loneliness in adolescence. *Journal of Child and Family Studies, 25*(2), 631–637.
- Lenhart, A., Arafeh, S., & Smith, A. (2008). Writing, technology and teens. *Pew Internet & American Life Project*.
- Maes, M., Qualter, P., Vanhalst, J., Van den Noortgate, W., Goossens, L., & Kandler, C. (2019). Gender differences in loneliness across the lifespan: A meta-analysis. *European Journal of Personality, 33*(6), 642–654.
- Maes, M., Vanhalst, J., Spithoven, A. W. M., Van den Noortgate, W., & Goossens, L. (2016). Loneliness and attitudes toward aloneness in adolescence: A person-centered approach. *Journal of Youth and Adolescence, 45*(3), 547–567.
- Magnuson, K., & Berger, L. M. (2009). Family structure states and transitions: Associations with children's well-being during middle childhood. *Journal of Marriage and Family, 71*(3), 575–591.
- Mahon, N. E., Yarcheski, A., Yarcheski, T. J., Cannella, B. L., & Hanks, M. M. (2006). A meta-analytic study of predictors for loneliness during adolescence. *Nursing Research, 55*(5), 308–315.
- Martel, M. M. (2013). Sexual selection and sex differences in the prevalence of childhood externalizing and adolescent internalizing disorders. *Psychological Bulletin, 139*(6), 1221–1259.
- Masi, C. M., Chen, H.-Y., Hawkey, L. C., & Cacioppo, J. T. (2011). A meta-analysis of interventions to reduce loneliness. *Personality Social Psychology Review, 15*(3), 219–266.
- Mercer, S. H., & DeRosier, M. E. (2010). A prospective investigation of teacher preference and children's perceptions of the student-teacher relationship. *Psychology in the Schools, 2*(47), 184–192.
- Milani, L., Osualdella, D., & Di Blasio, P. (2009). Quality of interpersonal relationships and problematic Internet use in adolescence. *Cyber Psychology Behavior, 12*(6), 681–684.

- Moksnes, U. K., Bradley Eilertsen, M. E., & Lazarewicz, M. (2016). The association between stress, self-esteem and depressive symptoms in adolescents. *Scandinavian Journal of Psychology, 57*(1), 22–29.
- National Academies of Sciences, Engineering, and Medicine. (2016). *Preventing bullying through science, policy, and practice*. National Academies Press.
- Neto, F. (2002). Loneliness and acculturation among adolescents from immigrant families in Portugal. *Journal of Applied Social Psychology, 32*(3), 630–647.
- Nowland, R., Necka, E. A., & Cacioppo, J. T. (2018). Loneliness and social internet use: Pathways to reconnection in a digital world? *Perspectives on Psychological Science, 13*(1), 70–87.
- Patel, R. S., Wardle, K., & Parikh, R. (2019). Loneliness: The present and the future. *Age and Ageing, 48*(4), 476–477.
- Perlman, D., & Peplau, L. A. (1981). Toward a social psychology of loneliness. *Personal Relationships, 3*, 31–56.
- Peter, J., Valkenburg, P. M., & Schouten, A. P. (2005). Developing a model of adolescent friendship formation on the Internet. *CyberPsychology & Behavior, 8*(5), 423–430.
- Priest, N., Paradies, Y., Trenerry, B., Truong, M., Karlsen, S., & Kelly, Y. (2013). A systematic review of studies examining the relationship between reported racism and health and wellbeing for children and young people. *Social Science & Medicine, 95*, 115–127.
- Ren, Y., & Ji, B. (2019). Correlation between perceived social support and loneliness among chinese adolescents: Mediating effect of psychological capital. *Psychiatry Danubina, 31*(4), 421–428.
- Rokach, A. (1989). Antecedents of loneliness: A factorial analysis. *The Journal of Psychology, 123*(4), 369–384.
- Segrin, C., Nevarez, N., Arroyo, A., & Harwood, J. (2012). Family of origin environment and adolescent bullying predict young adult loneliness. *The Journal of Psychology, 146*(1–2), 119–134.
- Sourkes, B. M. (1988). Siblings of the child with a life-threatening illness. *Journal of Children in Contemporary Society, 19*(3–4), 159–184.
- Stancliffe, R. J., Lakin, K. C., Doljanac, R., Byun, S.-Y., Taub, S., & Chiri, G. (2007). Loneliness and living arrangements. *Intellectual Developmental Disabilities, 45*(6), 380–390.
- Statistics Netherlands (2019). Nearly 1 in 10 Dutch people frequently lonely in 2019. Retrieved from <https://www.cbs.nl/en-gb/news/2020/13/nearly-1-in-10-dutch-people-frequently-lonely-in-2019>.
- Taube, E., Kristensson, J., Midlöv, P., Holst, G., & Jakobsson, U. (2013). Loneliness among older people: Results from the Swedish national study on aging and care – Blekinge. *Open Geriatric Medicine Journal, 6*(1), 1–10.
- Valkenburg, P. M., Sumter, S. R., & Peter, J. (2011). Gender differences in online and offline self-disclosure in pre-adolescence and adolescence. *British Journal of Developmental Psychology, 29*(2), 253–269.
- Van den Eijnden, R., Vermulst, A., Van Rooy, T., & Meerkerk, G. (2006). *Bullying on internet and psychosocial well-being of youth*. Rotterdam: IVO, Rotterdam.
- Vanhalst, J., Luyckx, K., & Goossens, L. (2014). Experiencing loneliness in adolescence: A matter of individual characteristics, negative peer experiences, or both? *Social Development, 23*(1), 100–118.
- Vanhalst, J., Luyckx, K., Scholte, R. H., Engels, R. C., & Goossens, L. (2013). Low self-esteem as a risk factor for loneliness in adolescence: Perceived-but not actual-social acceptance as an underlying mechanism. *Journal of Abnormal Child Psychology, 7*(41), 1067–1081.
- Weare, K. (2000). *Promoting mental, emotional, and social health: A whole school approach*. London: Psychology Press, Routledge.
- Weeks, M. S., & Asher, S. R. (2012). Loneliness in childhood: Toward the next generation of assessment and research. *Advances in child development and behavior, 42*, 1–39.
- Weiss, R. S. (1973). *Loneliness: The experience of emotional and social isolation*. Cambridge, MA, US: The MIT Press.
- Williams, S. G., Langhinrichsen-Rohling, J., Wornell, C., & Finnegan, H. (2017). Adolescents transitioning to high school: Sex differences in bullying victimization associated with depressive symptoms, suicide ideation, and suicide attempts. *The Journal of School Nursing, 6*(33), 467–479.
- Woodhouse, S. S., Dykas, M. J., & Cassidy, J. (2012). Loneliness and peer relations in adolescence. *Social Development, 21*(2), 273–293.
- Yang, K., & Victor, C. (2011). Age and loneliness in 25 European nations. *Ageing & Society, 31*(8), 1368–1388.