Loneliness and its association with stress and psychopathology

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Summary

Loneliness could be defined as a subjective experience in which a person feels psychological discomfort because he/she is unable to increase the quality and/or quantity of relationships to the person's desired level. Loneliness occurs following a perceived lack of and/or loss of significant relationships and can contribute to several physical and psychological health problems. Populations at risk for loneliness include the elderly, young college students, the seriously ill, the disabled, those who experience significant loss, and those who are isolated like the psychiatric patients. Specially, people presenting with psychological problems often experience social stigmatization and isolation.

Since the patient may be reluctant to express loneliness, all the parties involved in patient's care (physicians, mental health professionals, caregivers, family members) ought to look for the possible risk factors for loneliness, including age (elderly, young adult), recent relocation, recent death of significant other, gradual loss of important relationships over time, disabilities (intellectual or physical), serious illness, depression and other psychiatric disorders. Finally, psychological support of people suffering from loneliness may prevent further deterioration of their physical and mental health.

Key Words: loneliness, solitude, stress, psychopathology, elderly, individuals with disabilities, children, adolescents, stigma, psychosis

Introduction

Loneliness could be defined as a subjective experience in which a person feels psychological discomfort because he/she is unable to increase the quality and/or quantity of relationships to the person's desired level (Cassidy & Asher, 1992; Peplau & Perlman, 1982). On the contrary, solitude is a state of seclusion or isolation which may be often desirable and valued as a time when one may work, think or rest without being disturbed.

Loneliness occurs following a perceived lack of and/or loss of significant relationships and can contribute to several physical and psychological health problems. Loneliness, like any situation that requires behavioral adjustment is stressful, and the fight or flight response is evoked. Walter B. Cannon described the "fight or flight" response to stress, identifying a consistent set of physiologic changes that occur when animals, including humans, are exposed to stress.

(Cannon and de la Paz, 1911; Sterling and Eyer, 1988; McEwen 1998; Charney, 2004; Benson and Casey, 2008; Chrousos, 2009).

What is stress?

Stress hormones (cortisol, adrenaline and noradrenaline) prepare the body to fight or flee.

Breath quickens, heart beats faster, senses are sharpened (sight and hearing), the individual become more alert, certain blood vessels constrict, which helps direct blood to the muscles and the brain and away from the skin and other organs. Body systems not needed for immediate actions are suppressed. The stomach and intestines cease operations. Sexual arousal lessens. Repair and growth of body tissues slows. Hans Selye (1956) was the first to advance the idea that physical and psychosocial stressors trigger the same physiological response. He also suggested that short-term stress (good stress) stimulates people in order to overcome obstacles while ongoing and overabundant stress (bad stress or distress) wears down the ability to adopt and cope. Two Harvard researchers Yerkes and Dodson (1908) noted that as stress or anxiety levels rose, so did performance and efficiency-up to a point. At this turning point, further stress and anxiety led to

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significant declines in performance and ability.

Overabundant (bad) stress is linked to health problems

Hypertension, allergic skin reactions, anxiety, arthritis, constipation, cough, depression, diabetes, dizziness, headaches, heart problems (angina, heart attack, and cardiac arrhythmia), infectious diseases such as cold and herpes, infertility, irritable bowel disease, insomnia, menopausal symptoms such as hot flashes, nausea and vomiting of pregnancy, pains (backaches, headaches, abdominal pains, muscle aches etc.), premenstrual syndrome, slow wound healing, side-effects of AIDS, cancer and cancer treatment, ulcers etc.

Overabundant (bad) stress warning signs

Physical symptoms

Tight neck and shoulders, back pain, sleep difficulties, tiredness or fatigue, racing heartbeat or palpitations, shakiness or tremor, sweating, ringing in ears, dizziness or fainting, choking sensation, difficulty swallowing, stomachache, indigestion, diarrhea or constipation, frequent urgent need to urinate, loss of interest in sex, restlessness.

Behavioral Symptoms

Grinding of teeth, inability to complete tasks, bossiness, fidgeting, overuse of alcohol, emotional eating or overeating, taking up smoking or smoking more than usual, increased desire to be with or withdraw from others, rumination (frequent talking about stressful situations).

Emotional Symptoms
Crying, irritability, edginess, anger, feeling powerless to change things, nervousness, feeling anxious, quick temper, lack of meaning in life and pursuits, boredom, loneliness, unhappiness with no clear cause, depression.

Cognitive Symptoms

Continual worry, poor concentration, trouble remembering things, loss of sense of humor, indecisiveness, lack of creativity, trouble thinking clearly.

Populations at risk for loneliness

Populations at risk for loneliness include the elderly, young college students, the seriously ill, the disabled, those who experience significant loss, and those who are isolated like the patients with psychiatric problems.

Elderly

Social isolation and loneliness in the elderly has been found to be associated with greater levels of stress, greater age related increases in blood pressure and diminished cardiovascular functions underlying blood pressure regulation (Hawkley and Cacioppo, 2003; Cacioppo et al., 2014) increased mortality (Seeman, 1996; Udell et al., 2012; Perissinotto et al., 2012), poor self-rated physical health (Cornwell and Waite, 2009), functional decline (Hawkley et al., 2009; Perissinotto et al., 2012), increased susceptibility to dementia (Fratiglioni et al., 2000) and the onset of disability among older males living alone (Lund et al., 2010). Furthermore, social isolation was reported to be negatively associated with health status and health-related quality of life in the elderly (Gow et al., 2007; Hawton et al., 2010).

Children- Adolescents

Childhood loneliness is characterised by children's perceived dissatisfaction with aspects of their social relationships (Avramidis, 2010; Qualter et al., 2010). A recent literature review showed that about 10–15% of the children and adolescents felt very lonely (Galanaki & Vassilopoulou, 2007). During adolescence, the social expectations, roles, relationships, and personal identities of individuals undergo significant changes (Heinrich & Gullone, 2006). Social relations become increasingly important and adolescents spend considerably more time with their peers, away from adult supervision (Brown & Klute, 2003; Rubin, Bukowski, & Parker, 2006). Additionally, early adolescence coincides with the transition from elementary to secondary school. In recent years, this transition phase, which is often marked by the breakup of old friendships and forming new relationships, has been highlighted as an area of concern (Hardy, Bukowski, & Sippola, 2002; Humphrey & Ainscow, 2006). These significant changes in adolescents' social worlds might be related to the peak in

the prevalence of loneliness during this time. Relationship issues such as poor peer and family relationship quality, difficulty being close to peers and difficulty trusting peers may predict depressive symptoms. We should also bear in mind the associations that exist between bullying perpetration, victimization, that can drive children to loneliness depression, anxiety, low self-esteem, and hopelessness (Hong et al., 2014; Nixon et al., 2014). Depression, shyness, low self-esteem, social anxiety as well as developmental changes and maturation issues might make adolescents susceptible to loneliness (Mahon et al., 2006; Laursen and Hartl, 2013). And vice versa, an association between loneliness in children and adolescents and adverse health outcomes has been reported, including: depression, recreational drug use, suicide ideation and violence (McWhirter et al., 2002); parasuicide and self-harm (Yang and Clum, 1994); eating disturbances, obesity and sleep disturbances (Cacioppo et al., 2000); adolescent alcohol use, general health problems, less than optimal well-being and somatic complaints (Krause-Parello, 2008) personality disorders and psychoses (Richman and Sokolove, 1992).

Children with chronic illnesses and disabilities

Children who are exposed to chronic illnesses (especially those that are life-threatening) are susceptible to loneliness since they might may experience sleep disturbances and nightmares, thought suppression, difficulties in concentration, memory problems, loss of motivation, intense fear, irritability, and aggression toward their parents and peers (Terr, 1991; Pine and Cohen, 2002). Furthermore, such children may develop acute stress disorder, learning disorders, regressive behaviors, somatization, dissociative disorders, separation problems, and posttraumatic stress disorder and depression (Terr, 1991; Pine and Cohen, 2002, Sawyer et al., 2007; Pao et al., 2007; Kakaki and Theleritis, 2007). Older children and adolescents may experience a loss of faith in the future because they realize that life is fragile (Terr, 1991). They may become involved in high-risk sexual behaviors as well as abuse of alcohol, illicit drugs, and tobacco, which may compromise their health status considerably, given the severity of their medical condition.(Pine and Cohen, 2002, Sawyer et al., 2007).

Adults with chronic illnesses and disabilities

Patients with psychiatric problems

Specially, people presenting with psychological problems often experience social stigmatization and isolation (Economou et al., 2009; Karidi et al., 2009, 2010). The negative social consequences of living with a psychiatric diagnosis are understood in experienced social exclusion as follows: reduced access to employment opportunities, difficulties in obtaining insurance, poverty,
and depleted social networks. Self-stigma refers to a process in which patients with
schizophrenia may internalize mental illness stigma and experience diminished self-esteem and self-efficacy. Self-efficacy and self-esteem are the components of self-image that are most affected by self-stigma. When a patient endorses the public stereotype about mental illness, composed of a helpless, weak or dangerous patient image, and adopts these attributes, feelings of shame, devaluation, incompetence and depression surface, undermining self-efficacy and self-esteem (Economou et al., 2009; Karidi et al., 2009, 2010).

Individuals with disadilities

Disabled and handicapped individuals often feel social isolated and lonely (Zhang et al., 2014; Kool et al., 2013; Harris, 2009).Self-esteem partially mediates the relationship between stigma perception and social avoidance, social anxiety and loneliness (Zhang et al., 2014). Loneliness is prevalent in individuals with rheumatic diseases. This could be due to not receiving social support and being stigmatized and invalidated, which might be most common in fibromyalgia, a rheumatic disease that lacks medical evidence (Kool et al., 2013). So, apart from patients with psychiatric problems individuals with other disabilities may also feel stigmatized and invalidated.

How to help these people

Since the patient may be reluctant to express loneliness, all the parties involved in patient's care (physicians, mental health professionals, caregivers, family members) ought to look for the possible risk factors for loneliness, including age (elderly, young adult), recent relocation, recent death of significant

other, gradual loss of important relationships over time, disabilities (intellectual or physical), serious illness, depression and other psychiatric disorders. Finally, psychological support of people suffering from loneliness may prevent further deterioration of their physical and mental health.

Elderly

There is a great effort to reduce the feeling of loneliness in the elderly. As reported in the study by Dikkens et al. (2011), it appears that common characteristics of effective interventions which counteract loneliness in the elderly may include offering social activity and/or support within a group format. Interventions in which older people are active participants also appeared more likely to be effective.In a recent review by Hagan et al., (2014) the following four studies found that their interventions were successful in reporting significant reductions in loneliness in elderly participants . a)Creswell et al.'s (2012) Mindfulness- based stress reduction training group programme, b)Kahlbaugh et al.'s (2011) one-to-one Nintendo Wii intervention, c)Banks et al.'s (2008) introduction of either a living or robotic dog, d)Tsai & Tsai's (2011) study on videoconferencing

Children and young people

Bossaert et al. (2012) report that students with disabilities or special educational needs at this age are in need of adapted types of interventions, with more focus on enhancing same-sex social self-concept and, to a lesser extent, friendship quality. Persons involved with the care of children (physicians, mental health clinicians, community health workers, teachers, caregivers, and family members) should be aware that children and adolescents with a history of exposure to trauma, prior psychopathology, and disruption in social and family support networks are particularly vulnerable to psychological trauma.

Especially for children who experience chronic or life-threatening medical conditions, preventive measures should be implemented: their mental health status, quality of life,and possibility of becoming involved in risk-taking behaviors should be regularly monitored, and any problem that arises should be promptly handled by mental health clinicians (Kakaki and Theleritis, 2007). Spiritual coping is an important predictor of mental health in youth with chronic health conditions. It may affect mental health partly by facilitating more positive interpretations of life events.Clinicians should assess for spiritual distress, particularly among youth with psychosocial adjustment difficulties or more severe conditions (Reynolds et al., 2013). These interventions might make chronic medical conditions more tolerable, both for children and adolescents and for their families. Furthermore, specialised telephone helpline could help enormously children and adolescents in need of psychological support (e.g. childline).

Seriously ill adults

Social support, cognitive therapy and group counseling could help disabled people (Evans et al., 1985; Kool et al., 2013).

Psychiatric patients

Psychosocial rehabilitation interventions could help patients with psychiatric problems. Identification with a patients' group seems to have a protective role that reduces the likelihood that an individual will agree with public stigma and experience diminished self-esteem and self-efficacy (Karidi et al. 2009, 2010). Effective psychologic interventions must deal with the patient's reality, both the external one and the one he or she has internalized. These interventions entail both individualized and group therapy so that each patient can be supported to cope with mental illness in an efficient way.

References

Avramidis, E. Social relationships of pupils with special educational needs in the mainstream primary class: Peer group membership and peer-assessed social behaviour. European Journal of Special Needs Education, 2010; 25, 413–429.

Banks, M.R., Willoughby, L.M., & Banks, W.A. Animal- assisted therapy and loneliness in nursing homes: Use of robotic versus living dogs. Journal of the American Directors Association, 2018; 9(3), 173–177.

Benson H, Casey A. Stress management. Harvard Health Publications, Boston, MA, USA, 2008.

Bossaert G, Colpin H, Pijl SJ, Petry K. Loneliness among students with special educational needs in mainstream seventh grade. Res Dev Disabil.;33(6):1888-97.

Brown, B. B., & Klute, C. Friendships, cliques, and crowds. In G. R. Adams & M. D. Berzonsky (Eds.), Blackwell handbook of adolescence. Malden, MA: Blackwell. 2003; (pp. 330–348).

Cacioppo S, Capitanio JP,Cacioppo JT. Toward a neurology of loneliness. Psychological Bulletin 2014; 140(6): 1464-15.

Cacioppo JT, Ernst JM, Burleson MH, McClintock MK, Malarkey WB, Hawkley LC et al (2000) Lonely traits and concomitant physiological processes: the MacArthur social neuroscience studies. Int J Psychophysiol 35:143–154.

Cannon WB and de la Paz D. Emotional stimulation of adrenal secretion. Am J Physiol 1911; 28: 64 - 70.

Cassidy, J., & Asher, S. R. Loneliness and peer relations in young children. Child Development. 1992; 63, 350–365.

Charney DS. Psychobiological Mechanisms of Resilience and Vulnerability: Implications for Successful Adaptation to Extreme Stress. Am J Psychiatry 2004; 161:195–216.

Chrousos GP. Stress and disorders of the stress system. Nature Rev Endocrinol 2009; 5:374–381.

Cornwell EY, Waite LJ: Social disconnectedness, perceived isolation, and health among older adults. Journal of Health and Social Behavior 2009, 50:31-48.

Creswell, J.D., Irwin, M.R., Burklund, L.J., Lieberman, M.D., Arevalo, J.M.G., Mab, J., Cole, S.W. Mindfulness- based stress reduction training reduces loneliness and pro-inflammatory gene expression in older adults: A small randomized controlled trial. Brain, Behavior, and Immunity. 2012; 26, 1095–1101.

Dickens AP, Richards SH, Greaves CJ, Campbell JL. Interventions targeting social isolation in older people: a systematic review. BMC Public Health. 2011;11:647. doi: 10.1186/1471-2458-11-647.

Economou M, Richardson C, Gramandani C, Stalikas A, Stefanis C. Knowledge about schizophrenia and attitudes towards people with schizophrenia in Greece. Int J Soc Psychiatry 2009; 55(4):361-71.

Evans RL, Halar EM, Smith KM. Cognitive therapy to achieve personal goals: results of telephone group counseling with disabled adults. Arch Phys Med Rehabil 1985;66(10):693-6.

Fratiglioni L, Wang HX, Ericsson K, Maytan M, Winblad B: Influence of social network on occurrence of dementia: a community-based longitudinal study. Lancet 2000, 355:1315-1319.

Galanaki E & Vassilopoulou HD. Teachers and children's loneliness: A review of the literature and educational implications. European Journal of Special Needs Education. 2007; 22: 455–475.

Gow AJ, Pattie A, Whiteman M, Whalley LJ, Deary IJ. Social support and successful aging: investigating the relationships between lifetime cognitive change and life satisfaction.
J Ind Diff. 2007; 28:103–115.

Hagan R, Manktelow R, Taylor BJ & Mallett J. Reducing loneliness amongst older people: a systematic search and narrative review, Aging & Mental Health. 2014; 18:6, 683-693.

Hardy, C. L., Bukowski, W. M., & Sippola, L. K. Stability and change in peer relationships during the transition to middle level school. Journal of Early Adolescence. 2002; 22: 117–142.

Harris JC.Christina's World. Arch Gen Psychiatry. 2009 May;66(5):466. doi: 10.1001/archgenpsychiatry.2009.49.

Hawkley LC, Cacioppo JT. Loneliness and pathways to disease. Brain Behav Imm. 2003; 17:98–105.

Hawkley LC, Thisted RA, Cacioppo JT. Loneliness predicts reduced physical activity: cross-sectional and longitudinal analyses. Health Psychol. 2009; 28:354–363.

Hawton A, Green C, Dickens AP, Richards SH, Taylor RS, Edwards R, Greaves CJ, Campbell JL: The impact of social isolation on the health status and health-related quality of life of older people. Quality of Life Research 2010, 1-11.

Heinrich, L. M., & Gullone, E. The clinical significance of loneliness: A literature review. Clinical Psychology Review, 2006; 26, 695–718.

Hong JS, Kral MJ, Sterzing PR.Pathways From Bullying Perpetration, Victimization, and Bully Victimization to Suicidality Among School-Aged Youth: A Review of the Potential Mediators and a Call for Further Investigation. Trauma Violence Abuse. 2014 Jun 4 published online doi:10.1177/1524838014537904

Humphrey, N., & Ainscow, M. Transition club: Facilitating learning, participation and psychological adjustment during the transition to secondary school. European Journal of Psychology of Education. 2006; 21: 319–331.

Qualter P, Brown SL, Munn P, Rotenberg KJ. Childhood loneliness as a predictor of adolescent depressive symptoms: an 8-year longitudinal study. Eur Child Adolesc Psychiatry. 2010 Jun;19(6):493-501.

Kahlbaugh, P.E., Sperandio, A.J., Carlson, A.L., & Hauselt, J. Effects of Playing Wii on well-being in the elderly: Physical activity, loneliness, and mood. Activities, Adaptation & Aging. 2011; 35(4), 331–344.

Kakaki M, Theleritis C. Health outcomes in long-term survivors of childhood cancer. JAMA 2007;298(14):1635.

Karidi MV, Stefanis CN, Theleritis C, Tzedaki M, Rabavilas AD, Stefanis NC. Perceived social stigma, self-concept, and self-stigmatization of patient with schizophrenia. Compr Psychiatry. 2010;51(1):19-30.

Karidi MV, Theleritis C, Stefanis NC. Stigma and schizophrenia. Lancet. 2009;373(9672):1335-6.

Kool MB, van Middendorp H, Lumley MA, Bijlsma JW, Geenen R. Social support and invalidation by others contribute uniquely to the understanding of physical and mental health of patients with rheumatic diseases. J Health Psychol 2013;18(1):86-95. doi: 10.1177/1359105312436438.

Krause-Parello CA. Loneliness in the school setting. J Sch Nurs. 2008; 24:66–70.

Laursen B, Hartl AC. Understanding loneliness during adolescence: developmental changes that increase the risk of perceived social isolation. J Adolesc. 2013;36(6):1261-8

Lund R, Nilsson CJ, Avlund K: Can the higher risk of disability onset among older people who live alone be alleviated by strong social relations? A longitudinal study of non-disabled men and women. Age Ageing 2010, 39:319-326.

Mahon NE, Yarcheski A, Yarcheski TJ, Cannella BL, Hanks MM. A meta-analytic study of predictors for loneliness during adolescence. Nurs Res 2006;55(5):308-15.

McEwen BS. Protective and damaging effects of stress mediators. N Engl J Med 1998; 338, 171–179.

McWhirter BT, Besett-Alesch TM, Horibata J, Gat I. Loneliness in high risk adolescents: the role of coping, selfesteem, and empathy. J Youth Stud. 2002; 5:69–84.

Nixon CL. Current perspectives: the impact of cyberbullying on adolescent health. Adolesc Health Med Ther. 2014;5:143-58.

Pao M, Ballard ED, Rosenstein DL. Growing up in the hospital. JAMA. 2007; 297(24):2752-2755.

Peplau, L. A., & Perlman, D. Perspectives on loneliness. In L. A. Peplau & D. Perlman (Eds.), Loneliness: A sourcebook of current theory, research and therapy. New York: Wiley. Perlman, D., & Landolt, M. A. 1982 (pp. 1–18). Examination of loneliness in children-adolescents and in adults: Two solitudes or a unified enterprise? In K. J. Rotenberg & S. Hymel (Eds.), Loneliness in childhood and adolescence, Cambridge, England: Cambridge University Press. 1999; (pp. 325–347).

Perissinotto CM, Stijacic Cenzer I, Covinsky KE. Loneliness in older persons: a predictor of functional decline and death. Arch Intern Med 2012;172(14):1078-83.

Pine DS, Cohen JA. Trauma in children and adolescents: risk and treatment of psychiatric sequelae. Biol Psychiatry. 2002;51(7):519-531.

Perlman, D., & Landolt, M. A. Examination of loneliness in children-adolescents and in adults: Two solitudes or a unified enterprise? In K. J. Rotenberg & S. Hymel (Eds.), Loneliness in child-

hood and adolescence Cambridge, England: Cambridge University Press.1999; (pp. 325–347).

Reynolds N, Mrug S, Guion K. Spiritual coping and psychosocial adjustment of adolescents with chronic illness: the role of cognitive attributions, age, and disease group. J Adolesc Health. 2013;52(5):559-65.

Richman NE, Sokolove RL. The experience of aloneness, object representation, and evocative memory in borderline and neurotic patients. Psychoanal Psychol. 1992; 9:77–91.

Rubin, K. H., Bukowski, W., & Parker, J. G. Peer interactions, relationships and groups. In N. Eisenberg (Ed.), Social, emotional and personal development. Wiley: John Wiley & Sons Inc. 2006; (6th ed., pp. 571–645)

Sawyer SM, Drew S, Yeo MS, Britto MT. Adolescents with a chronic condition: challenges living, challenges treating. Lancet. 2007;369(9571):1481-1489.

Seeman TE: Social ties and health: The benefits of social integration. Annals of Epidemiology, 1996, 6:442-451.

Selye, H. The Stress of Life (McGraw-Hill, New York, 1956).

Sterling P, Eyer J. Allostasis, a new paradigm to explain arousal pathology. In: Fisher, S., Reason, J. (Eds.), Handbook of Life Stress, Cognition and Health. John Wiley & Sons, New York, 1988, pp. 629–649.

Terr LC. Childhood traumas: an outline and overview. Am J Psychiatry. 1991; 148(1):10-20.

Theleritis C. Stress and Depression. "In Mental health: Current approaches-reflections". National Research Institute (E.I.E.), Athens 2011, pp. 45-54.

Tsai, H.H., & Tsai, Y.F. Changes in depressive symptoms, social support, and loneliness over 1 year after a minimum 3-month videoconference program for older nursing home residents. Journal of Medical Internet Research, 2011; 13(4), e93.

Udell JA, Steg PG, Scirica BM, Smith SC Jr, Ohman EM, Eagle KA, Goto S, Cho JI, Bhatt DL. Living alone and cardiovascular risk in outpatients at risk of or with atherothrombosis. Reduction of atherothrombosis for continued health (REACH) registry Investigators. Arch Intern Med 2012; 172(14):1086-95.

Yang B, Clum GA. Life stress, social support, and problem solving skills predictive of depressive symptoms, hopelessness, and suicide ideation in an asian student population: a test of a model. Suicide Life Threat Behav. 1994; 24:127–139.

Yerkes RM, Dodson JD. "The relation of strength of stimulus to rapidity of habit-formation". Journal of Comparative Neurology and Psychology 1908; 18: 459–482.

Zhang L, Li W, Liu B, Xie W. Self-esteem as mediator and moderator of the relationship between stigma perception and social alienation of Chinese adults with disability. Disabil Health J. 2014 7(1):119-23.