

Food Literacy, Mental Health, and Gardening in Schools: Drawing Connections

Heather Woodward, UBC Dietetic Intern Dec 2014

Preceptor: Kathy Romses, Vancouver Coastal Health Public Health Dietitian

According to the World Health Organization (WHO), the social, physical, and economic environments and personal attributes all play major roles in the mental health of individuals. This table is designed to demonstrate that hands on programs such as gardening, cooking programs, and building food literacy can influence the social, economic, and physical environment and personal attributes in positive ways that help promote mental health. The first column outlines the determinant of mental health broken down into the subgroups of social environment, physical environment, economic environment and personal attributes. The second column outlines how to build on the determinant to promote mental health. The third column outlines the evidence that connects gardening (G), food literacy (FL) or cooking programs (C) to each determinant and the fourth column is a list of references. Detailed references can be found in the Word document that outlines findings from a literature search titled "Food Literacy, Mental Health, and Gardening in Schools"

*Determinants of Mental Health	Promoting Positive Mental Health	Connection with Gardening (G), Food Literacy (FL), or Hands on Cooking Programs (C)	Reference
<u>Social Environment</u>			
Social Equality	Create Equity. Build a culture of respect. Decrease bullying and increase empathy for others. Allow all members to use strengths and contribute equally	School gardens support the reduction of inequalities: inclusive of all children, non-competitive alternative to sports, (G). Increased caring and empathy towards/from peers (G). Includes children with all different learning styles and abilities (G). Potential to reduce bullying (G).	2, 13, 14, 15, 20
Social Support	Increase Social Support between peers, with community members, and with parents and families	Sense of belonging, contribution, connection within the school (G). Increased caring and empathy towards/from peers (G). Builds social connections (G). Helps develop teamwork and cooperation (G). Students build better social relationships (G).	2, 7, 9, 10, 11, 13, 14, 16, 20
Cultural Respect	Build Respect for Culture. Educate, expose people to different cultures and create a culture of respect. Eliminate discrimination	Increased understanding and acceptance of different cultures (G). Increased caring and empathy demonstrated towards peers (G).	2, 16
Community Involvement	Create opportunities for all members to be involved in meaningful community/ school activities	School gardens foster community and family involvement. Attract community members and elders to share their expertise (G). Offer unique opportunities for increased involvement of fathers in children's educational activities (G). Opportunities to build connections with local businesses and organizations (G). Creating and sharing meals together with peers can lead to increased involvement and connectedness in the community (G,C). To create meaningful community activities, education programs or approaches should incorporate parents, caregivers, teachers and community members (G, C, FL).	2, 9, 13, 15, 19, 20

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Sense of Coherence	Empower individuals. Collaborate with community on school programs and events	Improved negotiation, communication, and collaboration skills (G). Improved social skills (G). Includes individuals of all different learning styles and abilities (G). Sharing cooking skills in cooking classes builds skills and knowledge necessary to empower individuals to make healthier food choices (G, C)	2, 9, 10, 11, 13, 14, 15, 17, 19, 20
Social Justice	Create Social Justice. Eliminate discrimination	Potential to reduce bullying (G). Schools experience less conflict inside the classroom (G).	13, 14, 20
Interconnectedness	Build interconnectedness and social support. Access community resources available	Provides interaction and an enhanced sense of community; often integrated with the broader community (G). Opportunities for student leadership (G). Sense of belonging, contribution, connection within the school (G). Helped build social connections (G). Offers opportunities for social inclusion (G). 88% of people report that they've made a new friend since coming to their community food center (G, C). Create opportunities for games of various group sizes and increase cooperative play (G).	2, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 19, 20
Trust/Safety in the Community	Involve members of the community in planning and activities, engage community members in school activities	Garden identified as a safe space on school grounds. Also found to create a sense of comfort, security, and belonging, especially for students who don't fit in (G). Increased caring and thoughtful attitudes towards all living things, including peers (G). Potential to reduce bullying (G).	2, 13, 14
<u>Physical Environment</u>			
Contact with Nature	Increase access to the natural environment and outdoor spaces. Acknowledge the value of interaction with nature.	Contact with nature is important for mental, social, emotional health in children. Encourages imagination and creativity, cognitive/intellectual development, and enhances social relationships. Unstructured activities in the garden can foster this connection (G). Early experiences in positive outdoor environments help students develop a greater sense of environmental stewardship in developing life and adulthood (G). Students develop a better relationship with the environment (G).	8, 20

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Participation in Outdoor Activities	Increase access to the natural environment and outdoor spaces. Offer more opportunity for participation in activities outdoors.	The relationship between physical and mental health and access to green space is stronger in those with lower SES (G)	19
<u>Economic Environment</u>			
Equity	Involve all members of the community in planning. Poverty Reduction. National strategies to increase employment, education, housing, healthcare, services. Address intergenerational transfer of inequity.		
Food Security	Improve access to culturally acceptable, nutritious food. Increase food literacy and cooking skills. Poverty Reduction. Address intergenerational transfer of inequity. ~ 3.9 million Canadians are food insecure (19).	Learning new cooking skills at harvest time (G). Learning about food preservation (G). Increased access to healthy foods (G). Motivates establishment of vegetable gardens at home (G).	2, 9, 10, 12
Socioeconomic Status	Empower individuals. Build skills for employability and create opportunities for growth. Poverty Reduction	Involvement in gardens builds employable skills like resilience, commitment, perseverance, problem solving, and the ability to plan ahead (G). Students gain useful, personal and marketable skills (G).	2, 9, 13, 14, 20
<u>Personal Attributes</u>			

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Resilience	Build Resiliency. Teach Individuals to utilize resources offered by a supportive environment.	Food literacy encompasses skills that contributes directly to resiliency (FL). Builds skills and confidence to improvise and problem-solve, and ability to access and share information (FL, CS). Improved confidence and ability to work independently (G). Students become active, independent learners (G). Builds resiliency (G). Builds commitment, perseverance, problem-solving skills, ability to plan ahead (G). 91% of parents said their children showed increased confidence in the kitchen after attending an after school program (G, C)	2, 3, 9, 13, 14, 15, 19
Self-Esteem	Increase Self-Esteem	Ability to cook for ones-self and ability to improvise in the kitchen builds confidence (FL). Preparing food for others has been identified as a source of pride and satisfaction (CS). Increased children's involvement in cooking and sharing knowledge and skills gained at school with family (G). Participation in planning and implementation of school gardens (G). Enhance psychosocial development and self-esteem (G). Opportunities for student leadership (G). When tasks are non-competitive, they lead to feelings of accomplishment at having succeeded when completed (G). 88% of food skills program participants have increased confidence in making healthy food	1, 2, 9, 10, 13, 14, 15, 16, 19
Physical Health	Universal Access to both primary healthcare and preventative health services. Increase physical activity and consumption of whole, nutritious foods. Decrease sedentary activity and consumption of calorie dense highly processed foods.	See below for nutritional adequacy. See food security. Gardening can increase physical activity throughout the day (G). Promotes muscle coordination and fine motor skills (G). 80% of food skills program participants report positive changes in their physical health (C). 91% of respondents reported that opportunities to harvest and taste food from the garden furthered student awareness and appreciation of nutritious food (G).	2, 10, 11, 12, 13, 15, 16, 19, 20
Nutritional Adequacy	Build knowledge, skills, and attitudes toward healthy foods. Increase food security and access to nutritious foods. Build practical life-long skills around food such as cooking, shopping, and budgeting.	Opportunity to try new healthy foods (G). Increased exposure to fruits and vegetables (G). Opportunity to try foods prepared in different ways (G). Help contextualize and support healthy eating messages (G). Increase knowledge of healthy food (G). Pass skills, knowledge, and attitudes of healthy eating and food literacy to families (G). Children promote healthy eating at home (G). Improved attitude towards healthy vegetables (G). Increased understanding of options for preparing fruits and vegetables (G). Increased vegetable and fruit consumption (G). Increased preference for vegetables as a snack (G). Increase in number of meals prepared at home (G). Studies show that eating meals with others leads to increased nutritional quality of the diet (G, C). 93% of community members report that community food centers are an important source of healthy food (G) Children consume more fruits and vegetables when fresh produce is available and accessible (G). Increased intake of a wider variety of fruits and vegetables (G).	2, 9, 10, 11, 12, 14, 16, 18, 19, 20
Coping Skills	Enhance/ Build Coping Skills	Improved negotiation, collaboration, and communication skills (G). Garden identified as a safe space on school grounds where students can go to be quiet, reflective, or escape (G). Improved social skills (G). 90% of food skills program participants report positive changes to their mental health (C)	2, 9, 10, 11, 13, 14, 17, 19, 20

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Personal Dignity	Create interactions that affirm dignity in all persons	Preparing food for others has been identified as a source of pride and satisfaction (CS). Created sense of pride and ownership within the education system (G). Accommodates children with all different learning styles and abilities (G).	1, 2, 13, 14, 15, 17
Sense of Being	Allow students to be individuals and express themselves. Build self-esteem and positive self-image and personal acceptance.	Sense of pride and ownership within the education system (G). Opportunities for student leadership (G). Creates sense of autonomy, responsibility (G). Provided sense of meaning and purpose for some students (G).	2, 11, 13, 14, 15, 16, 17
Sense of Belonging	Build a positive social environment (social determinants). Encourage positive interactions with others, the physical environment, and build cultural identity.	Gardens found to create a sense of comfort, security, and belonging, especially for students who don't fit in as well with school culture (G). Created sense of belonging, connection, contribution within the school (G). Includes children with all different learning styles and abilities (G). Unstructured, outdoor activities help give children a sense of 'place' in the world (G). 87% of people surveyed felt that they belonged to their community at their local community food center (G, C)	2, 8, 11, 13, 14, 15, 16, 19
Sense of Becoming	Offer options for direction in life and positive reinforcement. Encourage students to use their strengths and have reasonably high expectations.	Opportunities for student leadership (G). Creates a sense of autonomy and responsibility (G).	13, 15, 16
Cognitive Status	develop academic and cognitive ability. Prevent injuries.	Children perform better mentally when they have access to green space (G). Opportune setting to teach science, math, literacy, economics, history (G). Evidence that experiential, hands on learning is preferred by vulnerable young adults (G, C). Students have reported learning better in the garden because they feel more calm than when they are in the classroom (G). Students more likely to explore widely (90%), to learn about their local environment (91%), and to have a greater sense of wonder and curiosity (92%) (G). Incorporating school gardens into curriculum improves academic performance (G). Students have a greater understanding for ecological cycles and sustainable agriculture (G).	1, 10, 13, 15, 20
Happiness	Build social and emotional skills and stability	School gardens found to improve emotional well-being (G). Inclusion in all stages of school gardens created a sense of belonging, contribution, and connection to the school (G).	2, 11, 12, 13, 14, 16

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Work (School) Stress	Offer balance. Encourage healthy coping mechanisms.	Time in the garden reduced stress (G). Gardening can help relieve symptoms of ADHD (G). Completing a physical task can lead to feelings of contentment and relaxation (G). Students are more engaged, enthusiastic, and aware in school (G). Students more likely to explore widely (90%), to learn about their local environment (91%), and to have a greater sense of wonder and curiosity (92%) (G). Incorporating school gardens into curriculum improves academic performance (G).	7, 9, 10, 11, 20
Mastery**	Empower Individuals. Build social, emotional, academic, and cognitive abilities.	Sense of pride and ownership within the education system (G). Improved confidence and ability to work independently (G). Opportunities for student leadership (G). Creates a sense of autonomy and responsibility (G). Experience freedom and creativity (G). Allows students to take control over their own learning when tasks are flexible (G). Higher food preparation frequency has been associated with greater fruit and vegetable preference and self-efficacy for healthy eating (FL)	2, 10, 13, 14, 15, 16, 17, 20

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