

# A “What Matters Index” (WMI) for Adolescents

*John H. Wasson, MD*

**Abstract:** A “What Matters Index” (WMI) represents the distillation of many self-reported measures about what matters. The WMI for adults contains only 5 items that efficiently identify important needs, reliably identify people at risk for future problems, and provide guidance for improving health care and well-being. This report uses data from 10 000 respondents to illustrate the value of a 3-item WMI for adolescents built on the model of the Adult WMI.

**Key words:** *adolescent health, public health adolescents, What Matters Index*

**A** “WHAT MATTERS INDEX” (WMI) represents a distillation of many self-reported measures into the few that matter. Over several decades, a primary care research group developed and tested a multipurpose, 5-item WMI to rectify the significant mismatch

observed between what matters to adult patients and what clinicians know (Wasson, 2021; Wasson, Soloway, et al., 2018). This brief and immediately interpretable WMI efficiently communicates important needs to health professionals and identifies strategies that can improve health care and overall health. The Adult WMI also stratifies patients at risk for future costly care (Wasson, Ho, et al., 2018).

The fact that the Adult WMI effectively stratified people with no common chronic conditions strongly suggested that it should be applicable to generally healthy adolescents. Therefore, the Adult WMI can be a model for examining the value of a similar tool for adolescents. This report examines that hypothesis.

## METHODS

### An Adolescent WMI

The Adolescent WMI elements were derived from the analogous Adult WMI. The Adult WMI relies on 5, single-item measures, each of which guides specific actions, and their composite sum identifies the risk for subsequent hospital and emergency use. The

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5 items for adults are self-reported: insufficient health confidence, bothersome pain, bothersome emotional problems, polypharmacy, and a suspicion that medications may be causing illness.

Since adolescents are much less likely than adults to be taking chronic medications, 2 items relating to medications were not included in the Adolescent WMI. In addition, because most adolescent respondents have little experience managing chronic conditions, a broader construct of “insufficient problem-solving” is an alternative to “insufficient health confidence.”

The resultant Adolescent WMI for public health or community settings (eg, in schools or Web browsers) and clinical settings is illustrated in Figure 1. When automated, the Adolescent WMI provides the responder a summary and suggested resources tailored to responses. Examples include a problem-solving tool that promotes a personal, cognitive-behavior therapeutic approach and a more comprehensive assessment when the WMI score is greater than zero (<https://howsyourhealth.org/>; Wasson, 2021).

**Data source**

The WMI items for adolescents are included in an extensive health assessment called [HowsYourHealth.org](https://howsyourhealth.org). [HowsYourHealth.org](https://howsyourhealth.org) provides an immediate and standard source of information about a respondent’s function,

diagnosis, symptoms, health habits, preventive needs, capacity to self-manage chronic conditions, and experiences of care (Nelson et al., 2015; Wasson et al., 2011). Adolescent users of the Web site are asked about 30 items with primary emphasis on core measures that matter identified by adolescents: pain, emotion, physical fitness, schoolwork, social support, family communication, health habits, and problem-solving (Wasson et al., 1994; Wasson et al., 1995).

Of 9804 adolescent respondents, about 5% were in a school setting, 30% were associated with clinical settings, and the remainder accessed the Web site in the community. Fifty-three additional adolescents with health concerns listed steps to improve their confidence for managing and controlling most of their health problems.

**Analysis**

All data are cross-sectional. Because cause and effect cannot be established with such data, only associations are illustrated and described.

**RESULTS**

**The Adolescent WMI for public health and community use**

Table 1 sorts adolescent responses by their WMI scores using “Insufficient problem-solving” in the calculation. The table

<b>A What Matters Index (WMI) for Adolescents</b>	
For Public Health and Community Settings	<b>Insufficient Problem-Solving Capacity</b> How often during the PAST FOUR WEEKS have you been bothered by trouble solving problems? <i>(Always or often scored as 1, versus very never, seldom or sometimes scored as a zero)</i>
For Clinical Settings	<b>Insufficient Health Confidence</b> How confident are you that you can manage and control most of your health problems? <i>(Not very confident or somewhat confident scored as 1, versus very confident scored as a zero)</i>
For Any Settings	<b>Pain</b> During the past 4 weeks how much bodily pain have you generally had? <i>(Extreme or moderate pain scored as 1, versus none, very mild or mild scored as a zero)</i>
	<b>Emotions</b> During the past 4 weeks how much have you been bothered by emotional problems such as feeling anxious, irritable, depressed, or sad? <i>(Extremely or quite a bit scored as 1, versus not at all, a little or some-what scored as a zero)</i>

**Figure 1.** A What Matters Index (WMI) for Adolescents. Each item identifies a need and the sum of the WMI stratifies respondents into categories of risk.

**Table 1.** Self-Report From Adolescents Illustrating How an Adolescent What Matters Index Is an Expedient Proxy for What Else Might Matter

Categories	WMI = 0 (6880)	WMI = 1 (1975)	WMI = 2+ (949)
What Matters Index items triggered			
Poor problem-solving	0	16	61
Bothersome emotional problems	0	48	90
Bothersome pain	0	38	76
Demographics			
% Female	53	69	74
% Age (14-17), y	83	85	85
Any self-reported diagnosis			
Respiratory	16	22	28
Other	7	12	23
Using chronic medication(s)	19	29	39
Situational			
Family dysfunction	30	42	57
Inadequate health care experience	16	29	45
Inadequate social support	9	21	38
Bothersome attention deficit	8	30	64
Concerns about			
Exercise needs	26	38	43
Nutrition needs	20	35	45
Mental health and suicide	10	33	58
Sex and birth control	9	15	25
Alcohol and drugs	6	12	25
Violence and abuse	6	13	22
STDs	7	9	16
Common clinical symptoms			
Headaches	9	36	61
Fatigue	9	33	61
Menstrual related	7	18	32
Skin	7	15	28
Gastrointestinal	4	21	41
Respiratory	3	11	21
Chest pain	2	8	26

Abbreviations: STDs, sexually transmitted diseases; WMI, What Matters Index.

demonstrates that respondents with a WMI of 1 and higher have many disadvantages compared with the 70% of respondents with a WMI of zero. The table also illustrates how the WMI can be a convenient proxy for multiple measures of clinical problems, symptoms, adverse situations, and concerns. Although adolescents with a WMI of zero have many advantages relative to peers who have a higher WMI, some with a score of zero will have situational problems, concerns, and symptoms. However, the overall burden is much lower.

Although cause and effect cannot be assumed, the adverse associations with higher

WMI score are reflected in adolescents' personal behaviors and outcomes (Table 2). Bed-days are noteworthy because they detract from time in school and social interactions and often greatly inconvenience parents. Figure 2 illustrates the statistical strength of the association between the Adolescent WMI and any days spent at home in bed during the past 3 months.

**Adolescents' communication patterns for addressing problems that matter**

When adolescents identified significant health and social problems, automated

**Table 2.** Association of an Adolescent What Matters Index With Personal Behaviors and Outcomes

Categories	WMI = 0 (6880)	WMI = 1 (1975)	WMI = 2+ (949)
What Matters Index items triggered			
Poor problem-solving	0	16	61
Bothersome emotional problems	0	48	90
Bothersome pain	0	38	76
Personal behaviors			
No regular exercise	15	30	36
>2-h screen time each day	14	18	26
Poor personal preventive behaviors	6	15	34
Engaging in risky behaviors	4	9	22
Outcomes			
Any bed sick-days in past 3 mo	20	31	46
Self-assessed obesity	13	18	27
Poor school performance	6	17	36
Poor physical condition	6	13	24

Abbreviation: WMI, What Matters Index.

algorithms directed them to indicate whether they had talked to anyone, to whom they talked (family, friend, doctor, teacher, other), and to indicate their perception of communication effectiveness. Table 3 lists these important problem domains and the people most often consulted by the adolescents for each domain.

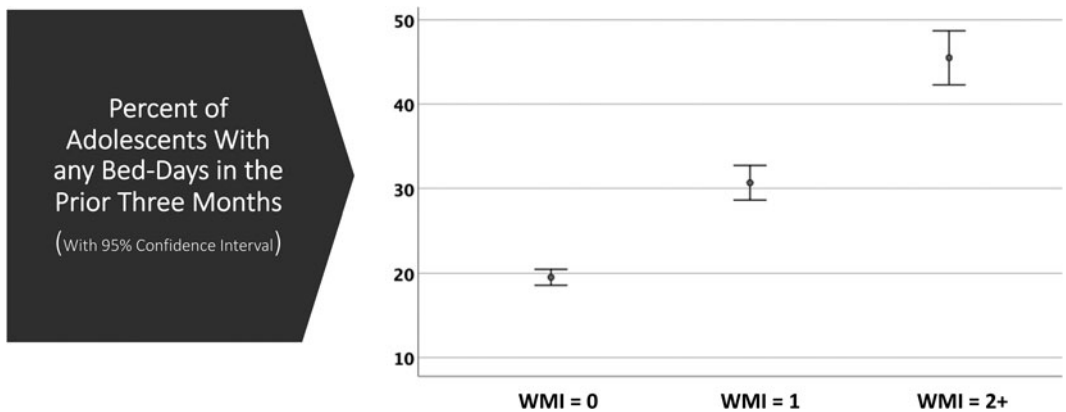
Peers are the primary sources for information for 4 of the 6 listed domains. Physicians were only commonly consulted for pain.

Information value to adolescents can be calculated as a function of the frequency of their consultations and its quality. The product of the frequency and a positive assessment

of information quality by the adolescents are illustrated in Figure 3. The findings indicate that regardless of the domain, adolescents who regard themselves as insufficient problem-solvers are likely to have less useful information than adolescents who have sufficient problem-solving capacity. However, Figure 3 also illustrates that most adolescents with better problem-solving capacities are still not obtaining helpful information.

**Health confidence**

Although the broad construct of “problem-solving” is applicable to all adolescents, for some who have chronic conditions and



**Figure 2.** An illustration of the strength of association between an Adolescent What Matters Index (WMI) and any days spend in bed for illness during the previous 3 months. WMI indicates What Matters Index.

**Table 3.** Important Problem Domains Identified by Adolescents and Health Professionals and the Most Common Sources Adolescents Sought for Information

Problem Domains	Percentage of Adolescents Impacted	Percentage of People Most Commonly Consulted
Family communication	35	Friends: 72; family: 28
Emotions	18	Friends: 76; family: 46
Pain	15	Family: 82; MD: 55
Social support	14	Friends: 64; family: 52
School work	12	Family: 65; teachers: 60
Risky health habits	11	Friends: 76; family: 52

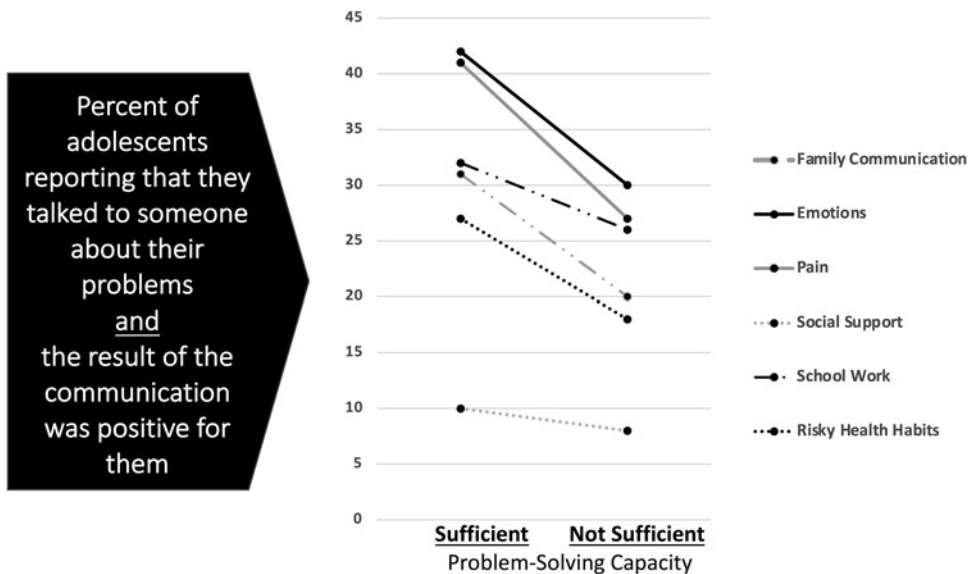
Abbreviation: MD, Medical Doctor, Health Professional.

frequent clinical encounters, the construct of "health confidence" can be helpful for guiding health-related behavior changes. For example, among 53 adolescents who responded to the automated query about what they think they would need to attain greater health confidence, three-quarters identified personal changes such as engaging in wellness activities and seeking better information.

**DISCUSSION**

The hypothesis that the Adult WMI can be a model for examining the value of a simi-

lar tool for adolescents is supported by these analyses when value is defined by quality divided by cost. In terms of quality, both the Adult and Adolescent WMIs greatly simplify the assessment of what matters to guide care, serve as proxies for many other measures that matter, and stratify populations based on need. When a WMI is completed before a planned visit to a health professional, health professionals can identify which patients may benefit from a longer interaction and more resources. Thereby, unwanted professional variance in interpretation of needs is reduced and more reliable planning is facilitated.



**Figure 3.** The effectiveness of information acquisition strategies pursued by adolescents based on their self-reported problem-solving capacities.

In terms of cost as a determinant of value, neither the Adolescent WMI nor the Adult WMI has a direct cost and the few items require little effort to complete.

When adolescents have problems, they are very likely to reach out to friends (presumably the Internet has accelerated adolescent contact with distant acquaintances as well). The brevity of the WMIs enables them to be easily accessible on ubiquitous smartphones. Based on the pattern of responses, users

receive immediate links for relevant information, additional assessment, and helpful tools. From a public health perspective, rather than being overly dependent on friends and online acquaintances, an automated WMI can target trustworthy information and tools to increase adolescent knowledge, improve behaviors, and self-management of health problems.

In summary, there is a strong case for the value of an Adolescent WMI.

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