CSMLS SCSLM

Canadian Society for Medical Laboratory Science
Société canadienne de science de laboratoire médical

Mental Health Status of Medical Laboratory Professionals

Final Report
October 2021
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CSMLS Research

1.0   Executive Summary

1.1.   Report Scope

This report focuses on the changes in mental health status observed within CSMLS since 2018.

With the participation of other related professions, the report is intended to be followed by an account of mental health status with allied health professionals included in the joint research project.

1.2.   Purpose

The Canadian Society for Medical Laboratory Science gauges and compares the level and impact of mental health issues, including stress and burnout, as well as mental illness of medical laboratory assistants, technologists and other related professions. The study seeks to:

- determine the level of stress, burnout, mental health issues, and psychological distress within the profession (spectrum of mental health) as defined by key questions extracted from the National Institute for Occupational Safety and Health (NIOSH) Quality of Work-life Survey, and complete questions sets from the Maslach Burnout Inventory (General), Mental Health Inventory and the Kessler Psychological Distress Scale (K6);
- determine the overall level of job satisfaction and quality of work-life in relation to the specific climate/culture questions as defined within the NIOSH Quality of Work-life Survey associated subsection and;
- identify any relationships between the workplace and mental health indicators.

1.3.   Participants

The study received 1,366 viable responses. This exceeded the target of 1,361 responses required to achieve data with a confidence interval of 95% and a 2.5% margin of error. At the time of this survey there were 11,838 active CSMLS members.

- 955 MLT participants are the largest demographic subgroup.
- 235 MLA participants are the second largest demographic subgroup.

1.4.   Key Findings

1.4.1.   Employment

- 92% of respondents are employed at the time of the survey.
  - 89% employment rate for MLAs
  - 95% employment rate for MLTs
- 42% of respondents indicate they will make a genuine effort to find a new job with another employer within the next year. This has increased from 34% in 2018.
- Mental health issues have contributed to 8% and 16% of the instances of unemployment for MLAs and MLTs respectively.

1.4.2.   Quality of Work-life and Mental Well being

- The sentiment of job security has improved.
- An increase in stress levels is noted despite an increased awareness of stress reduction programs.
- The feeling that there are not enough people or staff to get all the work done spans multiple professions (e.g. MLA, MLT, Supervisor).
- 67% of respondents strongly agreed with the sentiment "I have too much work to do everything well", a 9% increase since 2018.

1.4.3.   Maslach Burnout Inventory

- A 14% increase in emotional exhaustion was indicated by the 2021 respondents, after a 3% increase between 2016 and 2018
- CSMLS members have a high level of reduced personal accomplishment in general (comparatively to other health care professions). This value increased slightly for 2021.

1.4.4. Mental Health Index

- Feelings of 'anxiety' and 'depression' have increased since 2016, however the scores indicate an overall improvement since 2018 in these fields.
- Positive correlation with feelings of 'behavioral control' and 'positive affect' have increased by 10% and 14% respectively since 2018.

1.4.5. Kessler-6 Psychological Distress Scale

- 29% of CSMLS members are experiencing incidences of nonspecific serious psychological distress (NSPD).
    - Serious psychological distress includes mental health problems severe enough to cause moderate-to-serious impairment in social, occupational, or school functioning and to require treatment. See reference for more information on NSPD.[1]
- Incidences of NSPD have nearly doubled since 2018 (16% in 2018).
- 57% of respondents perceived increases in psychological distress in the month prior to the survey, indicating that negative effects on mental health are still accumulating approximately a year after the COVID-19 pandemic started.
- Respondents reported that feelings associated with psychological distress affected their ability to work 4 days per month on average. This includes 1.5 days they were totally unable to work, and an additional 2.7 days they spent doing only half or less of what they would normally have been able to do.
- 20% of respondents saw a doctor or other health professional about these feelings with an average of 2 visits each.

1.5. Future Action

CSMLS engaged Dr. Rosina Mete, a registered psychotherapist, to provide an expert opinion and insight into next steps. A follow up survey is planned for 2022. Areas of focus for the survey were identified, along with guidance towards relevant questions. Her review and complete analysis are included within this report.

CSMLS will continue advocacy efforts on behalf of members, and will continue providing resources for members in the form of the Mental Health Toolkit. Information and insight into the mental wellbeing of our members will be shared with employers and educators to address and help with concerns about burnout in the workplace.

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[1] https://www.cdc.gov/nchs/products/databriefs/db203.htm

2.0   Introduction to the Mental Health Status of Medical Laboratory Professionals

2.1.   Report Scope

This report focuses on the changes in mental health status observed within CSMLS since 2018.

With the participation of other related professions, the report is intended to be followed by an account of mental health status with allied health professionals included in the joint research project.

2.2.   Purpose

The Canadian Society for Medical Laboratory Science gauges and compares the level and impact of mental health issues, including stress and burnout, as well as mental illness of medical laboratory assistants, technologists and other related professionals. The study seeks to:
- determine the level of stress, burnout, mental health issues, and psychological distress within the profession (spectrum of mental health) as defined by key questions extracted from the National Institute for Occupational Safety and Health (NIOSH) Quality of Work-life Survey, and complete questions sets from the Maslach Burnout Inventory (General), Mental Health Inventory and the Kessler Psychological Distress Scale (K6);
- determine the overall level of job satisfaction and quality of work-life in relation to the specific climate/culture questions as defined within the NIOSH Quality of Work-life Survey associated subsection and;
- identify any relationships between the workplace and mental health indicators.

2.3.   Objectives

The following are the study objectives:
- collect and examine mental health data for medical lab professionals via survey
- examine current CSMLS mental health data as compared to past results
- examine data to determine similarities and differences between medical lab professionals and other related professions including SC (Sonography Canada) and CAMRT (Canadian Association of Medical Radiation Technologists)

2.4.   Chronological List of Survey Changes

Dissemination	CREB No.	Survey Comments
2016	007	Inaugural survey
2018	009	Joint submission with SC and CAMRT
2021	016	Joint Submission with SC. CAMRT launched an independent but identical study at the same time.

2.5.   Data Analysis and Interpretation

- Unless specified by profession, the data being reported is an aggregate of all respondents
- The margin of error for the 2021 results is ±2.5%. Thus, in instances throughout the report where 2021 results are within ±2.5% of the 2018 results, the values are considered similar/the same.
- 2018 Data analysis by Laura Zychla
- 2021 data analysis by Laura Zychla and Brandon Djukic

2.6.   Survey Dissemination

The survey was open for a three-week period in May 2021. The participation rate was deemed acceptable after the 3-week period. No additional data collection time was required and it was closed permanently.

2.6.1.   Survey Dissemination Timeline

Task	Timeline	Comments
Study Go-Live	Week 1 Day 1 – May 10th	
Email Invitation	Week 1 Day 1 – May 10th	Wednesday launch for best organization open rates for emails/newsletters
Website Invitation	Week 1 Day 1 – May 10th	
Social Media	Week 1 Day 1 – May 10th	
Organization-specific newsletters Invitation	Week 2 Day 1 – May 17th	Depending on study start date, this invitation may be before or after the reminder email. Examples: CSMLS eNEWS
Reminder Email	Week 2 Day 1 – May 17th	
Reminder Email	Week 3 Day 1– May 25h	
Study Close	Week 3 Day 7 – May 31st midnight Ontario time zone	

2.7.   Participation

All current CSMLS members at the time of survey distribution were invited to participate in this study. There are no exclusionary criteria based on membership type, professional group, employment status or title, gender, or any another demographic categorization as the study is intended to determine and examine mental health issues associated with the entire population of members. However, members aged 18 years or younger were excluded from this study as they may require additional monitoring and survey questions beyond the intent of the current application. Students and other member categories where the individuals' age is 19 years or older, are included in this study and considered 'adults'.

At the time of this survey there were 11,838 active CSMLS members. Assuming a confidence interval of 95% with a 2.5% margin of error, a total of 1,361 members were required to participate to ensure statically relevant population values. A total of 1428 CSMLS members responded to the survey, with 1366 participants identified as acceptable for use. 62 of 1428 responses were excluded from use in this mental health study. Of those excluded, 28 indicated they do not live in Canada and 34 were blank apart from initial demographic information.   For comparison the 2016 and 2018 surveys respectively had 802 and 1414 participants identified as acceptable for use.

3.0   Participant Demographics

3.1.   Description

This section of the report breaks down the demographic information of the report.

3.2.   Key Results

- 92% of respondents were employed at the time of the survey
- 955 MLT participants are the largest demographic group
- 235 MLA participants are the second largest demographic group
- Professions with less than 10 respondents have been grouped together as 'Other' for the purposes of analysis in this report.

3.3.   Profession Demographics

Profession	Count
Student	37
Retired	3
Researcher	4
Other	8
Medical Laboratory Technologist - General	844
Medical Laboratory Technologist - Cytology	27
Medical Laboratory Technologist - Clinical Genetics	84
Medical Laboratory Assistant/Technician	235
Manager/Supervisor	70
Educator	27
Director or Senior Executive	14
Diagnostic Medical Sonographer (DMS)	1
Consultant	4
Combined Laboratory and X-Ray Technologist (CLXT)	8

3.4.   Age Demographics

	19-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
Educator	0%	0%	7%	7%	7%	4%	19%	19%	30%	7%
MLA	14%	18%	17%	15%	10%	11%	8%	4%	3%	1%
MLT	5%	12%	17%	14%	10%	8%	12%	13%	6%	3%
Other	4%	7%	4%	4%	18%	18%	11%	11%	0%	25%
Student	41%	35%	8%	8%	5%	3%	0%	0%	0%	0%
Supervisor / Manager / Director	0%	2%	2%	12%	4%	18%	27%	21%	10%	4%

3.5.   Employment Demographics

	Educator	MLA	MLT	Other	Student	Supervisor / Manager / Director
No	11%	11%	5%	14%	78%	2%
Yes	89%	89%	95%	86%	22%	98%
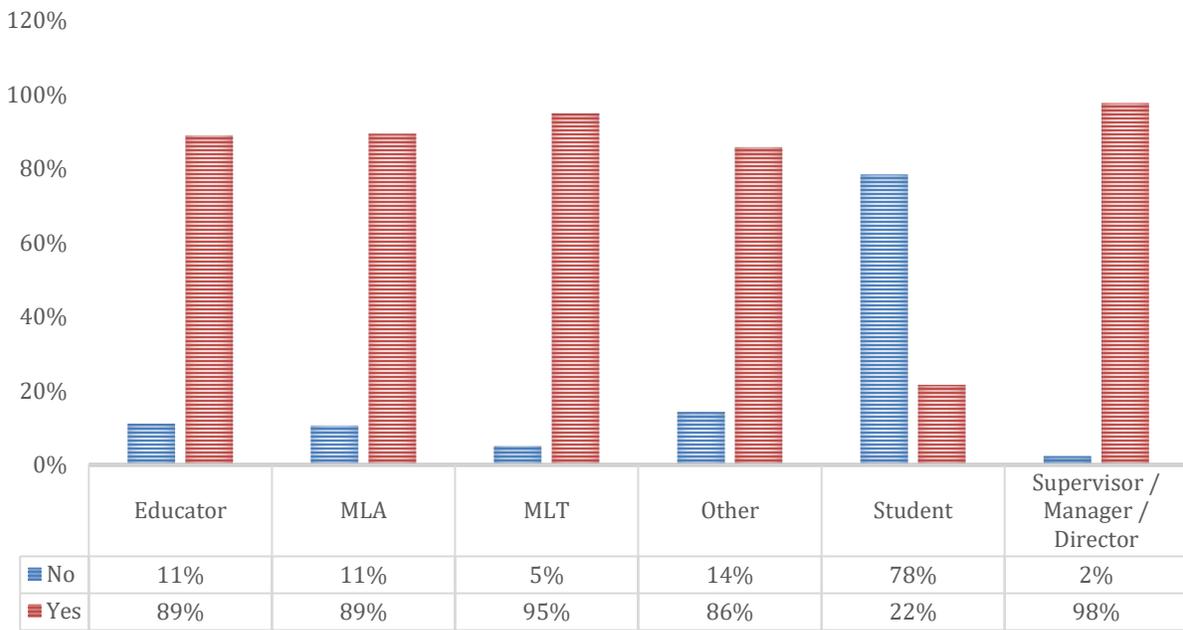
3.6. Cause of unemployment, if unemployed

3.6.1. Is the cause of your unemployment due to mental health illness or issues?

	Educator	MLA	MLT	Other	Student	Supervisor / Manager / Director
No	100%	92%	84%	75%	86%	100%
Yes, partially	0%	0%	12%	25%	14%	0%
Yes, fully	0%	8%	4%	0%	0%	0%
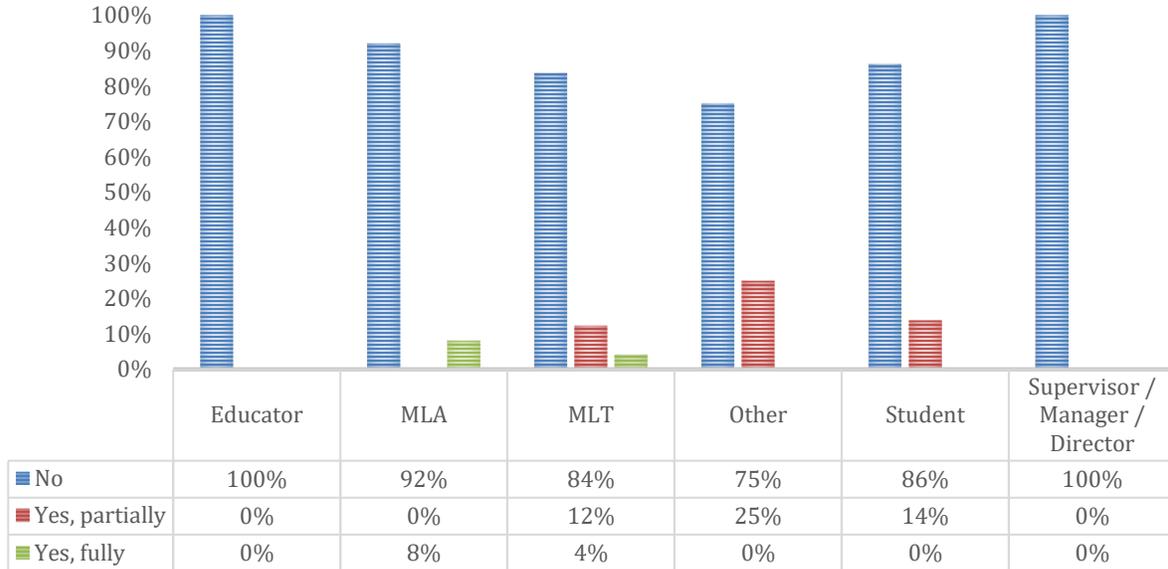
3.6.2. Is the cause of your unemployment due to physical health issues?

	Educator	MLA	MLT	Other	Student	Supervisor / Manager / Director
No	100%	100%	88%	100%	100%	100%
Yes, partially	0%	0%	12%	0%	0%	0%
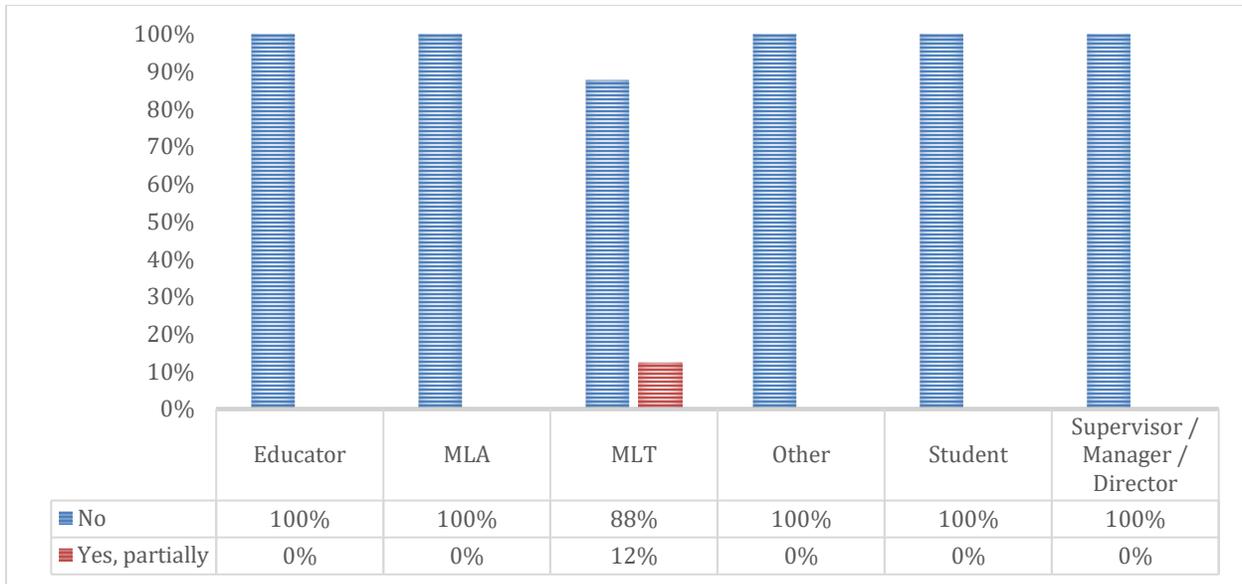
3.6.3. Comparison to previous years

Cause	All Participants			MLA			MLT		
	2016	2018	2021	2016	2018	2021	2016	2018	2021
Mental health	34%	15%	14%	35%	6%	**8%**	34%	19%	14%
Physical health	19%	10%	5%	15%	3%	0%	31%	14%	12%

4.0   Quality of Work-life and Mental Wellbeing

4.1.   Description

In 2000, the National Institute for Occupational Safety and Health (NIOSH) entered into an interagency agreement with the National Science Foundation to add a special module assessing the quality of work life in America to the 2002 General Social Survey. The General Social Survey is a biannual, nationally representative, personal interview survey of U.S. households conducted by the National Opinion Research Center and funded by the National Science Foundation. Using a small group process with internal and external expert teams, NIOSH selected 76 questions dealing with a wide assortment of work organization issues. These include (but are not limited to) hours of work, workload, worker autonomy, layoffs and job security, job satisfaction/stress, and worker well-being. Half of the questions in the Quality of Work-life module were taken directly from the 1977 Quality of Employment Survey, allowing comparisons of worker responses over a 25-year period. The current study extracts specific questions from this survey to identify stress, job satisfaction, and job culture/climate.[2]

4.2.   Key Results

- The sentiment of job security has improved.
- An increase in stress levels is noted despite an increased awareness of stress reduction programs.
- The feeling there are not enough people or staff to get all the work done that spans multiple professions (e.g. MLA, MLT, Supervisor)
- 67% of respondents strongly agreed with the sentiment "I have too much work to do everything well", a 9% increase since 2018.

4.3.   How often do you find your work stressful?

4.3.1.   Comparison to previous years

Respondents indicating that they find their work stressful 'often' or 'always':

2018	2021
55%	**69%**

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[2] http://www.cdc.gov/niosh/topics/stress/qwlquest.html

4.3.2.   2021 results by CSMLS member's profession

	Educator	MLA	MLT	Other	Student	Supervisor / Manager / Director
Always	21%	38%	19%	25%	0%	27%
Often	50%	35%	48%	38%	50%	55%
Sometimes	21%	24%	30%	29%	25%	17%
Hardly ever	8%	3%	2%	4%	25%	1%
Never	0%	0%	0%	4%	0%	0%
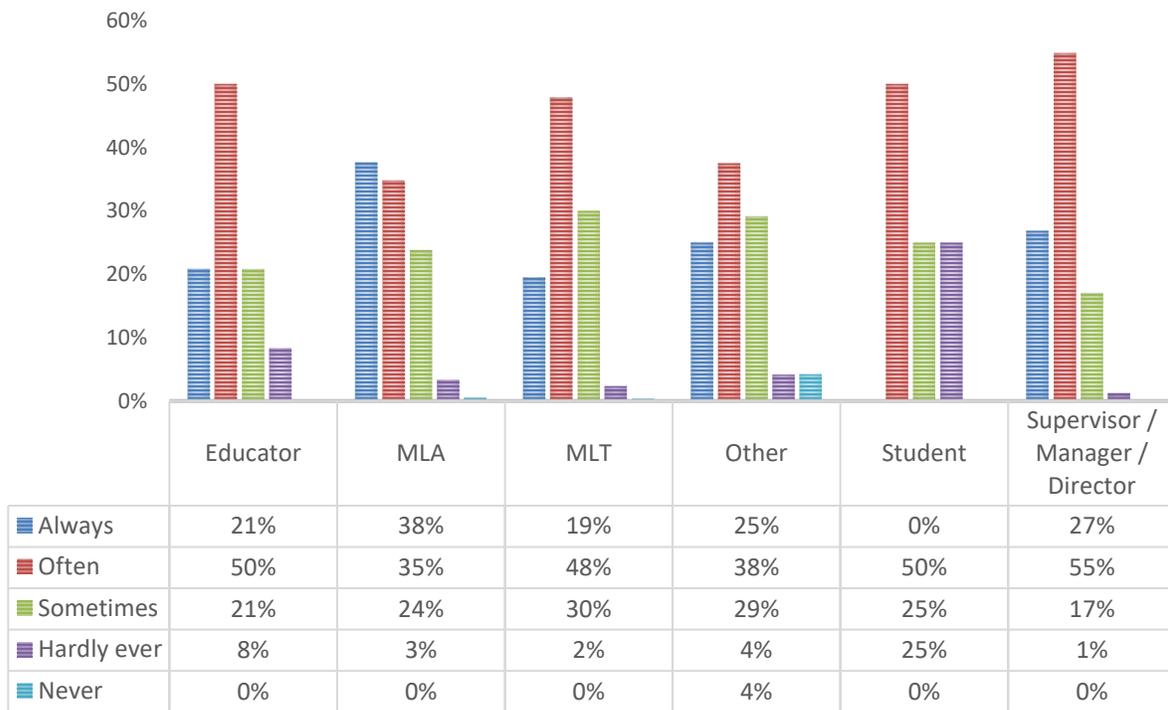
4.4.   Do you have access to stress management or stress reduction programs at your current workplace?

4.4.1.   Comparison to previous years

Respondents indicating 'unsure' or 'did not have' access:

2018	2021
60%	**47%**

4.4.2.   2021 results by CSMLS member's profession

	Educator	MLA	MLT	Other	Student	Supervisor / Manager / Director
No	8%	28%	18%	42%	25%	9%
Unsure	17%	40%	29%	13%	25%	15%
Yes	75%	32%	53%	46%	50%	77%
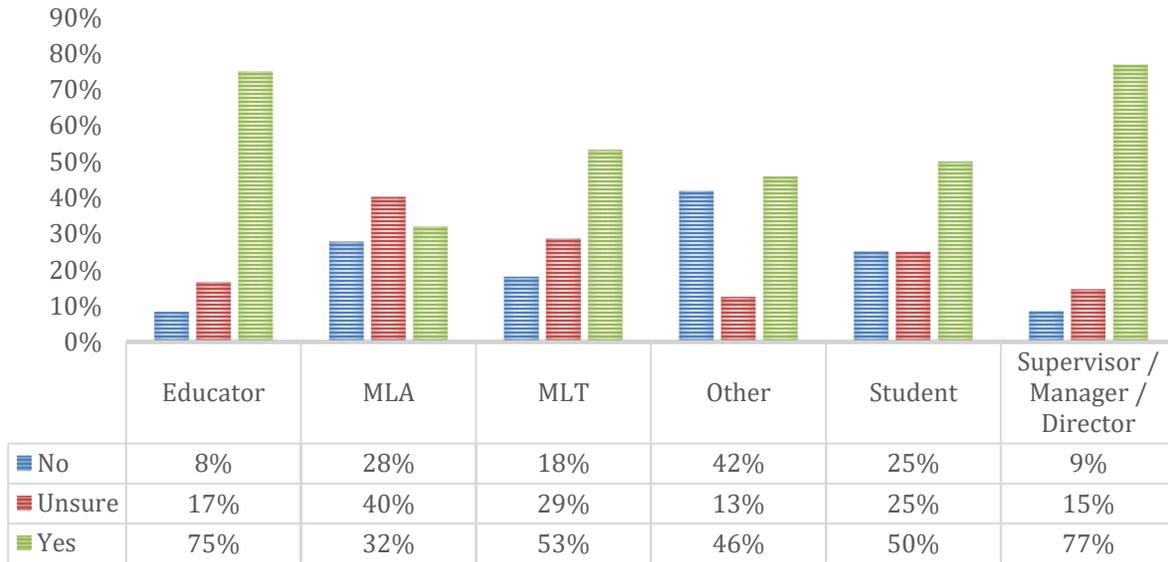
4.5.   How often are there not enough people or staff to get all the work done?

4.5.1.   Comparison to previous years

Respondents indicating there are not enough people or staff to get all the work done 'sometimes' or 'often':

2018	2021
No Data Available	87%

4.5.2.   2021 results by CSMLS member's profession

	Educator	MLA	MLT	Other	Student	Supervisor / Manager / Director
Never	0%	4%	1%	18%	0%	1%
Rarely	13%	9%	11%	14%	25%	11%
Sometimes	58%	21%	28%	14%	38%	29%
Often	29%	66%	60%	55%	38%	59%
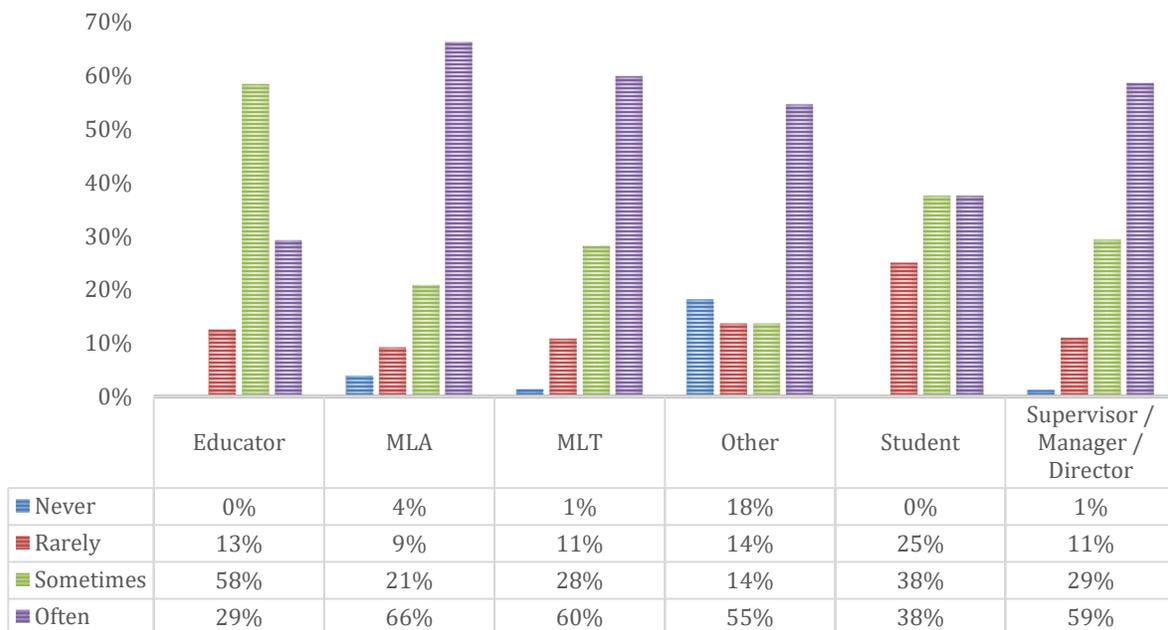
4.6.   Is the job security good?

4.6.1.   Comparison to previous years

Respondents indicating 'somewhat' or 'very' true:

2018	2021
90%	**92%**

4.6.2.   2021 results by CSMLS member's profession

	Educator	MLA	MLT	Other	Student	Supervisor / Manager / Director
Not at all true	4%	4%	2%	4%	13%	1%
Not too true	4%	10%	5%	4%	0%	5%
Somewhat true	38%	46%	29%	43%	50%	34%
Very true	54%	39%	65%	48%	38%	60%
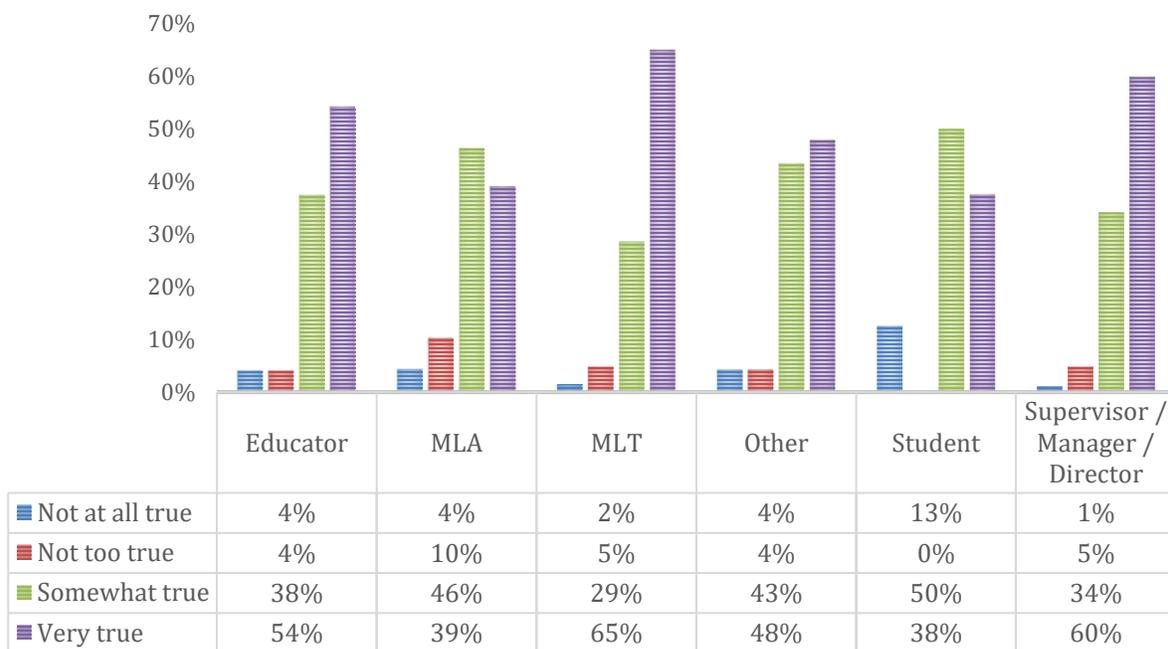
4.7.   All in all, how satisfied would you say you are with your job?

4.7.1.   Comparison to previous years

Respondents indicating 'somewhat' or 'very' satisfied:

2018	2021
79%	**77%**

4.7.2. 2021 results by CSMLS member's profession

	Educator	MLA	MLT	Other	Student	Supervisor / Manager / Director
■ Not at all satisfied	4%	12%	6%	9%	0%	4%
■ Not too satisfied	25%	20%	17%	0%	13%	17%
■ Somewhat satisfied	33%	53%	56%	48%	63%	55%
■ Very satisfied	38%	15%	21%	43%	25%	24%
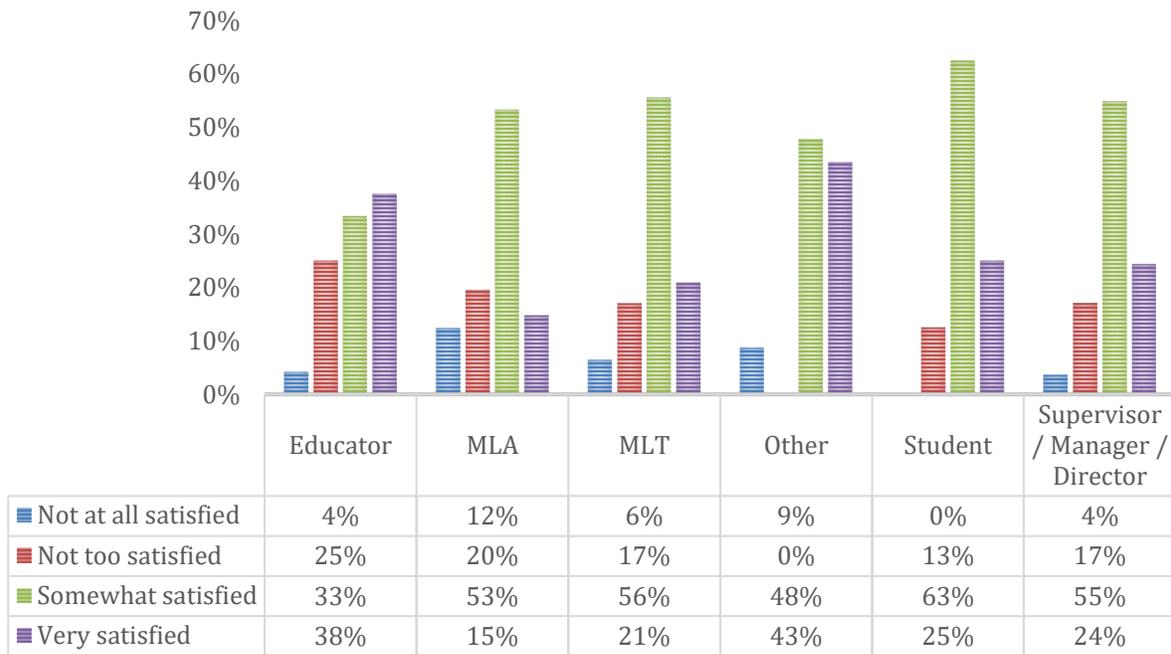
4.8. Taking everything into consideration, how likely is it you will make a genuine effort to find a new job with another employer within the next year?

4.8.1. Comparison to previous years

Respondents indicating 'somewhat' or 'very' likely:

2018	2021
34%	**42%**

	Educator	MLA	MLT	Other	Student	Supervisor / Manager / Director
▇ Not at all likely	83%	33%	62%	57%	0%	60%
▇ Somewhat likely	4%	41%	25%	35%	38%	18%
▇ Very likely	13%	25%	13%	9%	63%	22%
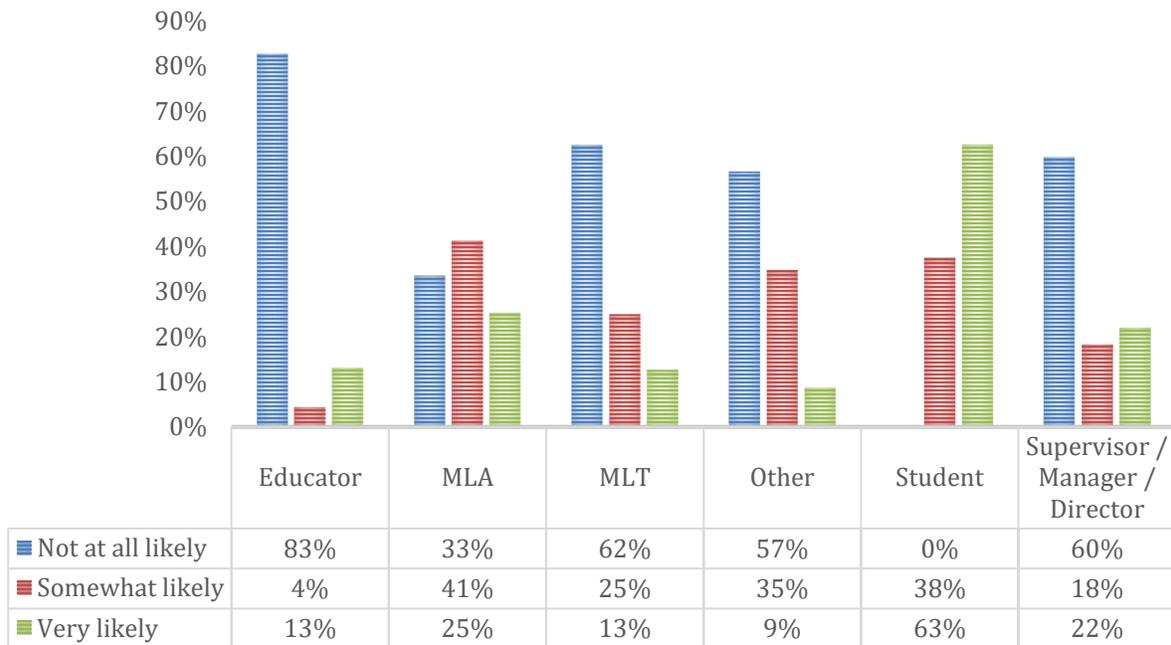
4.9.   Do you feel in any way discriminated against on your job?

4.9.1.   Comparison to previous years

Respondents indicating 'yes' they feel discriminated against on their job:

2018	2021
No Data Available	21%

4.9.2.   2021 results by CSMLS member's profession

	Educator	MLA	MLT	Other	Student	Supervisor / Manager / Director
▇ No	83%	74%	80%	71%	75%	80%
▇ Yes	17%	26%	20%	29%	25%	20%
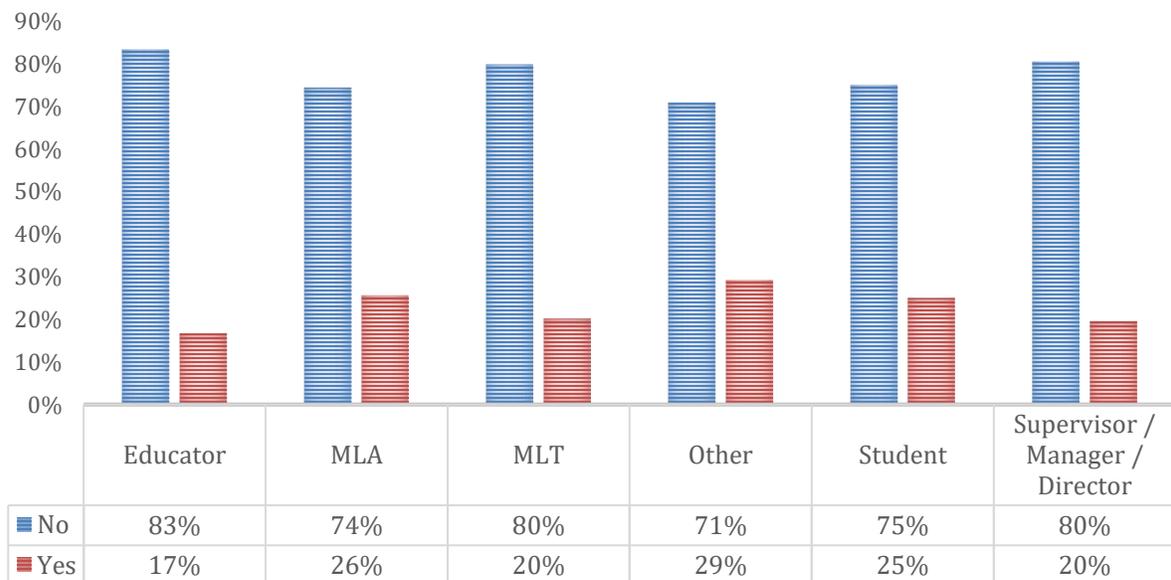
4.10.   Quality of Work-life

67% of respondents agreed with the sentiment "I have too much work to do everything well", a 9% increase since 2018. This affects 76% of the supervisor / manager / director subgroups, followed by MLAs at 75% and then educators at 74%. In this regard, MLTs are slightly below average at 66%. Other metrics looked at within this study are nearly identical to their 2018 values.

	Educator	MLA	MLT	Other	Student	Supervisor / Manager / Director
Strongly Disagree	0%	1%	2%	11%	0%	1%
Disagree	26%	24%	32%	47%	75%	14%
Agree	35%	39%	41%	21%	25%	36%
Strongly Agree	39%	36%	25%	21%	0%	49%
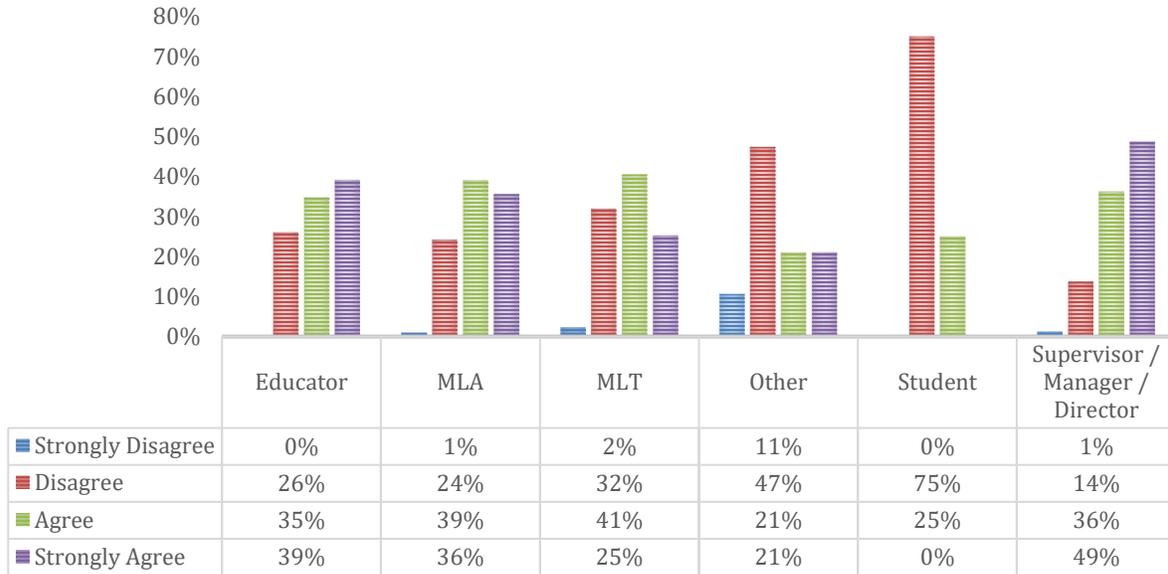
4.10.1.   Comparison to previous years

Respondents agree with the following:

	2018	2021
My job lets me use my skills and abilities	91%	93%
At the place where I work, I am treated with respect	77%	79%
There are no significant compromises or shortcuts taken when worker safety is at stake	78%	78%
The safety of workers is a high priority with management where I work	75%	76%
I have too much work to do everything well	58%	**67%**
I trust management at the place where I work	52%	55%

5.0 Maslach Burnout Inventory

5.1. Description

"Recognized for more than a decade as the leading measure of burnout, the Maslach Burnout Inventory incorporates the extensive research that has been conducted for more than 25 years since its initial publication. The survey addresses three general scales as described, which combine to provide a burnout indicator:
- Emotional Exhaustion measures feelings of being emotionally overextended and exhausted by one's work
- Depersonalization measures an unfeeling and impersonal response toward recipients of one's service, care treatment, or instruction
- Personal Accomplishment measures feelings of competence and successful achievement in one's work.

Several studies carried out by Iwanicki & Schwab (1981) and Gold (1984) support reliability such as the three-factor structure and internal reliability. Cronbach alpha ratings of 0.90 for emotional exhaustion, 0.76 Depersonalization, and 0.76 for Personal accomplishment were reported by Schwab; very similar ratings were reported by Gold. Time periods of a few weeks, 3 months, and 1 year were used for test-retest reliability. Scores in the 'few weeks' range were the highest (.60-.82) whereas scores in the year range were the lowest (0.54-0.60). The test manual covers validity for the MBI by noting patterns that appear again in the field. For example, male teachers score higher than females in the depersonalization scale, which is consistent with other helping professions."[3]

5.2. Key Results

- A 14% increase in emotional exhaustion was indicated by the 2021 respondents, after a 3% increase between 2016 and 2018
- CSMLS members have a high level of reduced personal accomplishment in general (comparatively to other health care professions). This value increased slightly for 2021.

5.3. Emotional exhaustion

Respondents are asked how frequently the following situations arise at work. The values are then combined to determine the overall emotional exhaustion score.
- I feel emotionally drained by my work.
- Working with people all day requires a great deal of effort.
- I feel like my work is breaking me down.
- I feel frustrated by my work.
- I feel I work too hard at my job.
- It stresses me too much to work with people.
- I feel like I'm at the end of my rope.
- I feel tired when I get up in the morning.
- I have no patience by the end of my work day

5.3.1. Comparison to previous years

Respondents indicating high levels of emotional exhaustion:

All Participants			MLA			MLT		
2016	2018	2021	2016	2018	2021	2016	2018	2021
38%	**41%**	**55%**	39%	**44%**	**66%**	38%	**41%**	**54%**

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[3] https://www.statisticssolutions.com/maslach-burnout-inventory-mbi/

5.3.2.   2021 results by CSMLS member's profession

	Educator	MLA	MLT	Other	Student	Supervisor / Manager / Director
Low	30%	17%	27%	59%	25%	15%
Moderate	22%	17%	19%	6%	0%	19%
High	48%	66%	54%	35%	75%	66%
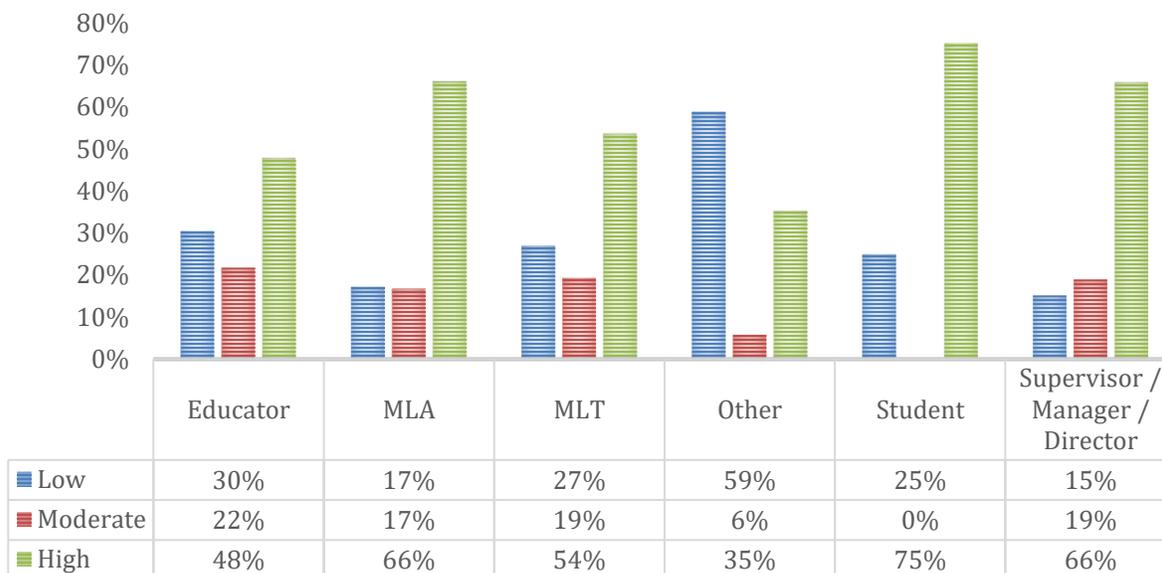
5.4.   Depersonalization

Respondents are asked how frequently the following situations arise at work. The values are then combined to determine the overall depersonalization score.

- I feel I look after certain patients impersonally, as if they are objects
- I have the impression that my patients make me responsible for some of their problems.
- I really don't care about what happens to patients.
- I have become more insensitive to people.

5.4.1.   Comparison to previous years

Respondents indicating high levels of depersonalization:

All Participants			MLA			MLT		
2016	2018	2021	2016	2018	2021	2016	2018	2021
10%	**13%**	**14%**	15%	**17%**	**28%**	8%	13%	10%

5.4.2. 2021 results by CSMLS member's profession

	Educator	MLA	MLT	Other	Student	Supervisor / Manager / Director
▥ Low	65%	53%	71%	81%	63%	59%
▥ Moderate	13%	20%	19%	0%	25%	22%
▥ High	22%	28%	10%	19%	13%	19%
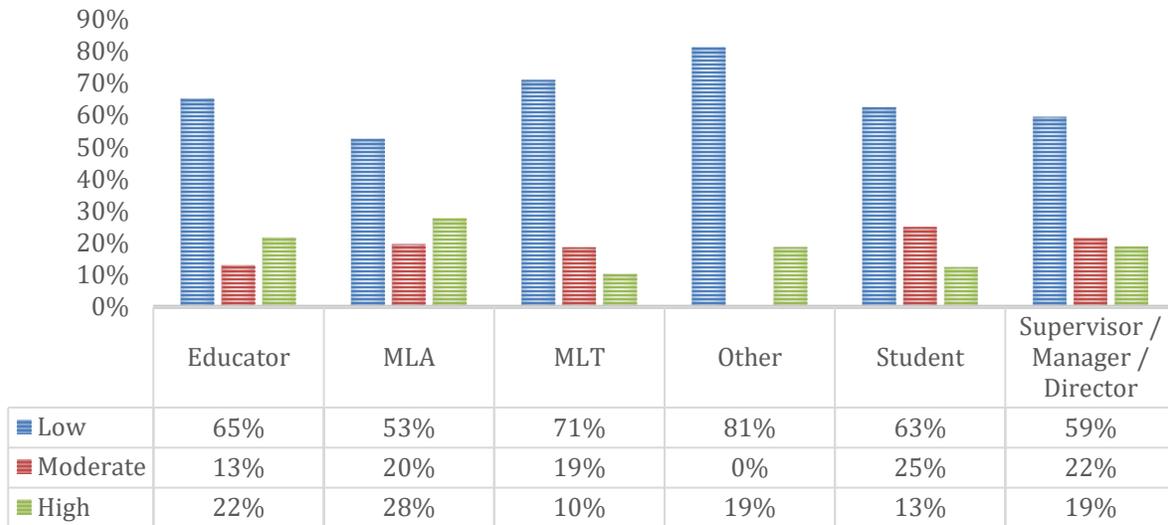
5.5. Personal accomplishment

Respondents are asked how frequently the following situations arise at work. The values are then combined to determine the overall personal accomplishment score. In this case higher scores indicate a reduced sense of personal accomplishment.

- I accomplish many worthwhile things in this job.
- I feel full of energy.
- I am easily able to understand what my patients feel.
- I look after my patients' problems very effectively.
- In my work, I handle emotional problems very effectively.
- I feel that I have a positive influence on people.
- I can easily create a relaxed atmosphere with my patients.
- I feel refreshed when I have been close to my patients at work.

5.5.1. Comparison to previous years

Respondents' levels of reduced personal accomplishment:

All Participants			MLA			MLT		
2016	2018	2021	2016	2018	2021	2016	2018	2021
32%	**40%**	**41%**	42%	30%	29%	31%	**41%**	**45%**

5.5.2.   2021 results by CSMLS member's profession

|	Educator	MLA	MLT	Other	Student	Supervisor / Manager / Director
Low	52%	44%	33%	53%	38%	42%
Moderate	26%	28%	22%	27%	25%	23%
High	22%	29%	45%	20%	38%	34%
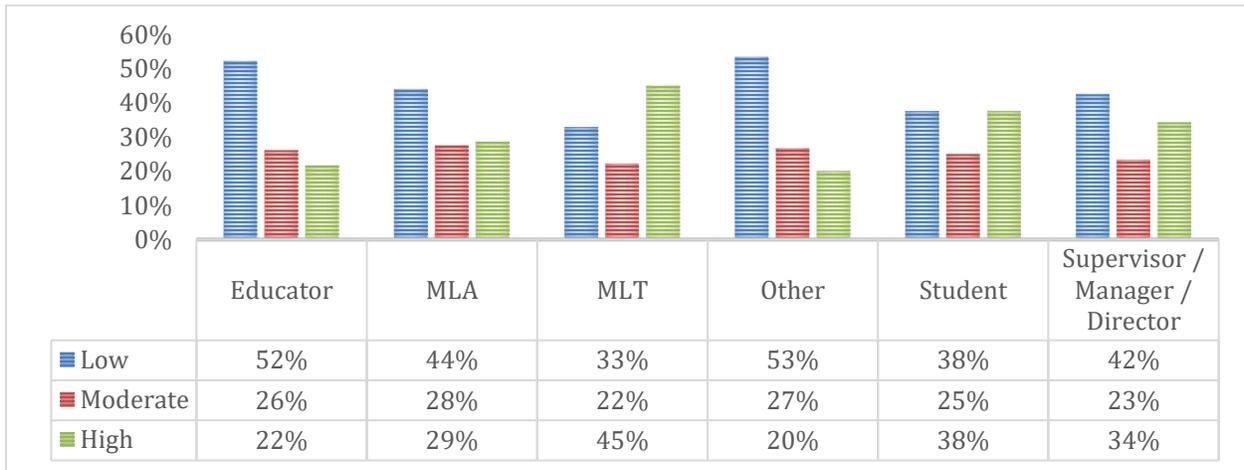
6.0   Mental Health Inventory

6.1.   Description

"As a part of the National Health Insurance Study, the Mental Health Inventory (MHI) is a method for evaluating mental health issues such as anxiety, depression, behavioral control, positive effect, and general distress. This instrument helps in the measure of overall emotional functioning. The Mental Health Inventory includes 38 items in which the respondent uses a 6-point Likert-style response. According to the National Multiple Sclerosis Society, the Mental Health Inventory has a reported .93 Cronbach alpha rating[4] whereas its abbreviated version has .82. This test is well-known and has been field tested in extensive populations. Also, the Mental Health Inventory showed a high correlation rating with MSQLI, or Multiple Sclerosis Quality of Life Inventory."[5]

6.2.   Key Results

- Feelings of anxiety and depression have increased since 2018, however the scores indicate an overall improvement since 2016 in these fields.
- Positive correlation with feelings of 'behavioral control' and 'positive affect' have increased by 10% and 14% respectively since 2018.

6.3.   2021 results by CSMLS member's profession

	Anxiety	Depression	Behaviour Control	Positive Affect
■ Educator	74%	84%	90%	64%
■ MLA	64%	73%	82%	60%
■ MLT	67%	75%	83%	57%
■ Other	74%	79%	81%	72%
■ Student	53%	66%	74%	60%
■ Supervisor / Manager / Director	70%	79%	90%	59%

[4] https://stats.idre.ucla.edu/spss/faq/what-does-cronbachs-alpha-mean/
[5] http://www.statisticssolutions.com/mental-health-inventory-mhi/
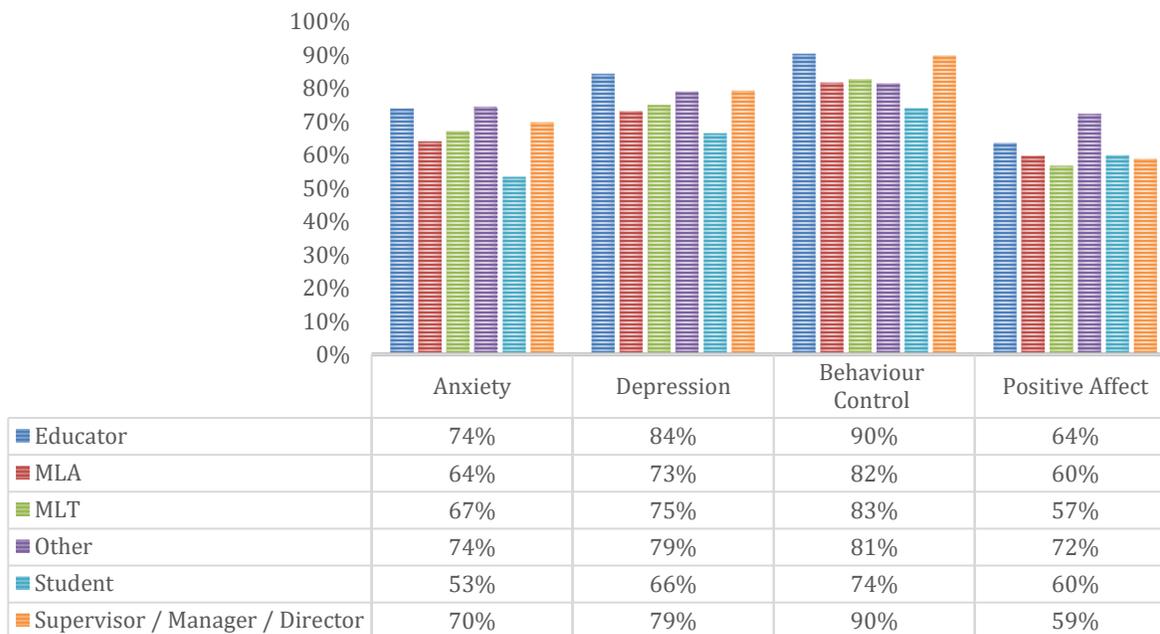
6.4.   Anxiety

Respondents are asked the following questions about how they feel, and how things have been during the past 4 weeks prior to taking the survey. The values are then combined to determine an overall anxiety score. Higher scores indicate better mental health states. The question number appears in parentheses.

- (4) have you been a very nervous person?
- (6) have you felt tense or high-strung?
- (10) were you able to relax without difficulty?
- (11) have you felt restless, fidgety, or impatient?
- (18) have you been anxious or worried?

6.4.1.   Comparison to previous years

Respondents anxiety scores:

All Participants			MLA			MLT		
2016	2018	2021	2016	2018	2021	2016	2018	2021
64%	70%	**67%**	61%	70%	**64%**	64%	70%	**67%**

6.5.   Depression

Respondents are asked the following questions about how they feel, and how things have been during the past 4 weeks prior to taking the survey. The values are then combined to determine an overall depression score. Higher scores indicate better mental health states. The question number appears in parentheses.

- (2) did you feel depressed?
- (9) have you felt downhearted and blue?
- (12) have you been moody, or brooded about things?
- (14) have you been in low or very low spirits?

6.5.1.   Comparison to previous years

Respondents depression scores:

All Participants			MLA			MLT		
2016	2018	2021	2016	2018	2021	2016	2018	2021
69%	80%	**75%**	64%	76%	**73%**	69%	81%	**75%**

6.6.   Behavioral Control

Respondents are asked the following questions about how they feel, and how things have been during the past 4 weeks prior to taking the survey. The values are then combined to determine an overall behavioral control score. Higher scores indicate better mental health states. The question number appears in parentheses.

- (5) have you been in firm control of your behavior, thoughts, emotions, feelings?
- (8) have you felt emotionally stable?
- (16) did you feel you had nothing to look forward to?
- (17) have you felt so down in the dumps that nothing could cheer you up?

6.6.1.   Comparison to previous years

Respondents behavior control scores:

All Participants			MLA			MLT		
2016	2018	2021	2016	2018	2021	2016	2018	2021
74%	73%	83%	68%	70%	82%	75%	74%	83%

6.7.   Positive Affect

Respondents are asked the following questions about how they feel, and how things have been during the past 4 weeks prior to taking the survey. The values are then combined to determine an overall behavioral control score. Higher scores indicate better mental health states. The question number appears in parentheses.

- (1) has your daily life been full of things that were interesting to you?
- (7) have you felt calm and peaceful?
- (13) have you felt cheerful, light-hearted?
- (15) were you a happy person?

6.7.1.   Comparison to previous years

Respondents positive affect scores:

All Participants			MLA			MLT		
2016	2018	2021	2016	2018	2021	2016	2018	2021
53%	44%	58%	52%	43%	60%	53%	44%	57%

7.0   Kessler-6 Psychological Distress Scale

7.1.   Description

"The Kessler Psychological Distress Scale (K6) was developed with support from the U.S. government's National Center for Health Statistics for use in the redesigned U.S. National Health Interview Survey (NHIS). As described in more detail in Kessler et al. (2003), the scale was designed to be sensitive around the threshold for the clinically significant range of the distribution of nonspecific distress in an effort to maximize the ability to discriminate cases of serious mental illness (SMI) from non-cases. A small validation study carried out in a convenience sample in Boston found evidence that the scales perform quite well and that, in fact, the six-question scale is at least as sensitive as the ten-question scale for the purpose of discriminating between cases and non-cases of SMI. The K6 is now included in the core of the NHIS as well as in the annual National Household Survey on Drug Abuse. The Kessler Psychological Distress Scale which utilizes 10 questions (K10) instead of 6, is also included in the National Comorbidity Survey Replication (NCS-R) as well as in all the national surveys in the World Health Organization's World Mental Health (WMH) Initiative. [6]

After the K6 was used in two of the largest ongoing national health tracking surveys in the U.S. (the Centers for Disease Control and Prevention's Behavioral Risk Factors Surveillance Survey and the SAMHSA National Household Survey), other countries began studying the validity of the K6. All of these studies concluded that the K6 is found to be consistent when used in multiple surveys, the K6 performed just as well as the K10. The K6 has also been proved to have little bias in regards to education and sex."[7]

Participants indicate how often they have had six different feelings or experiences during the past 30 days using a 5-point Likert scale: 4 (All of the time), 3 (Most of the time), 2 (Some of the time), 1 (A little of the time), and 0 (None of the time). The feelings and experiences for this first item are the following:

- nervous?
- hopeless?
- restless or fidgety?
- so depressed that nothing could cheer you up?
- that everything was an effort?
- worthless?

The scores are then determined by summing the numerical value associated with the scale for each question. With total scores ranging from 0 to 24, a standard cutoff score of 13 or higher on the K6 has been used to identify persons with nonspecific serious psychological distress (SPD); i.e., those with a high likelihood of having a diagnosable mental illness severe enough to cause functional limitations and to require treatment.[8]

7.2.   Key Results

- 29% of CSMLS members are experiencing incidences of nonspecific serious psychological distress.
- Incidences of nonspecific serious psychological distress have nearly doubled since 2018 (16%).
- 57% of respondents perceived increases in psychological distress in the month prior to the survey, indicating that negative effects on mental health are still accumulating approximately a year after the COVID-19 pandemic.
- Respondents reported that the feelings associated with psychological distress affected their ability to work 4 days per month on average. This includes 1.5 days they were totally unable to work, and an additional 2.7 days they spent doing only half or less of what they would normally have been able to do.

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[6] http://www.hcp.med.harvard.edu/ncs/k6_scales.php
[7] https://www.statisticssolutions.com/kessler-psychological-distress-scale-k6/
[8] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5468522/

- 20% of respondents saw a doctor or other health professional about these feelings with an average of 2 visits each.

7.3. Psychological Distress Data

#### 7.3.1. 2021 results by CSMLS member's profession
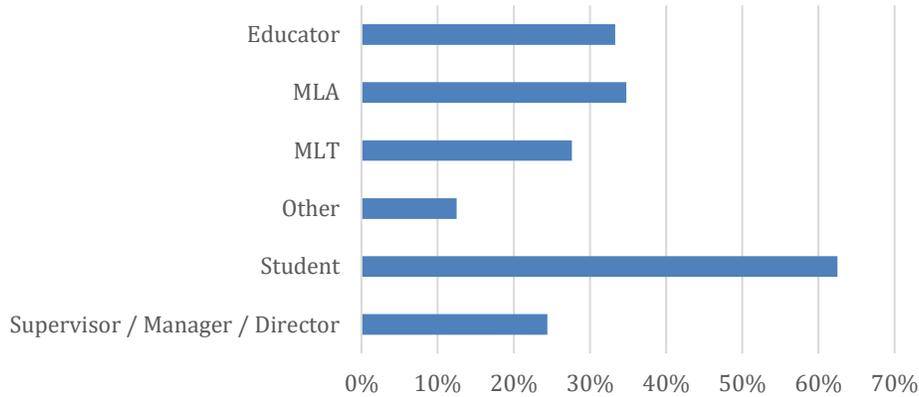
7.3.2. Comparison to previous years

Respondents psychological distress scores:

| All Participants			MLA			MLT		
2016	2018	2021	2016	2018	2021	2016	2018	2021
13%	16%	**29%**	27%	21%	**35%**	11%	15%	**28%**

7.3.3. Did these feelings occur more often in the past 30 days?

Respondents were asked if the feelings of psychological distress were occurring more frequently in the 30 days prior to taking the survey. The results indicated that 59% of participants were feeling an increase in distress in the weeks preceding the survey.

	Educator	MLA	MLT	Other	Student	Supervisor / Manager / Director
▤ Less often than usual	17%	8%	7%	0%	18%	2%
▤ About the same as usual	35%	30%	37%	67%	30%	36%
▤ More often than usual	48%	63%	56%	33%	52%	62%
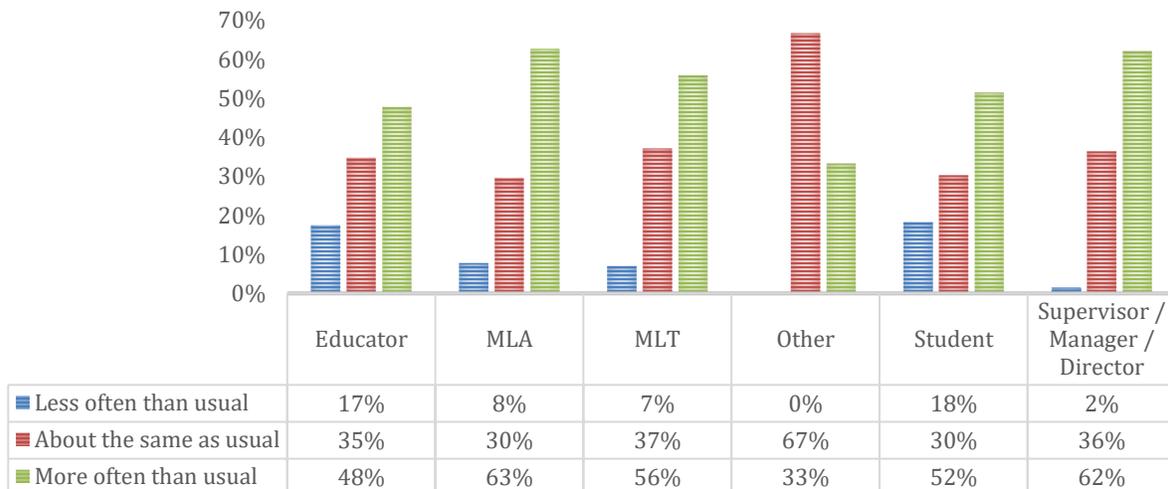
7.3.4. During the past 30 days, how often have physical health problems been the main cause of these feelings?

The study also considers how often physical health problems contributed to the feelings and experiences associated with psychological distress. Most respondents indicated low correlation between physical problems and their feelings associated with distress. For example, omitting the responses from most severe instances of physical ailment (most of the time and all of the time) reduces the average perception of increased psychological distress by only 0.3%.

	Educator	MLA	MLT	Other	Student	Supervisor / Manager / Director
None of the time	60%	42%	48%	48%	58%	68%
A little of the time	20%	27%	25%	19%	26%	14%
Some of the time	16%	21%	20%	19%	10%	15%
Most of the time	4%	9%	6%	14%	6%	4%
All of the time	0%	0%	2%	0%	0%	0%
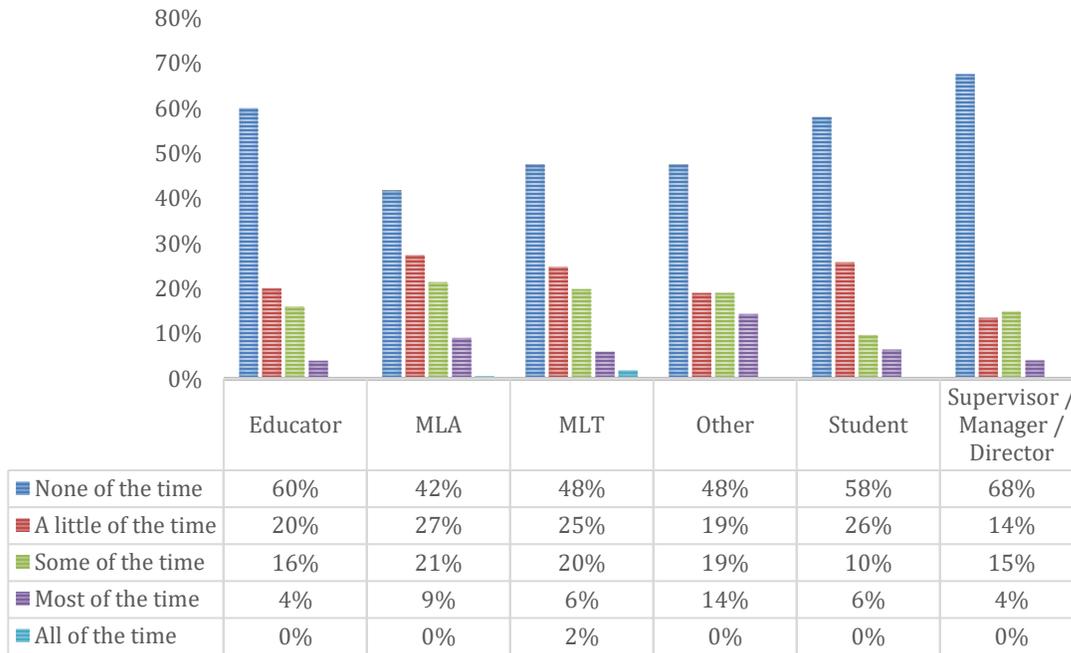
7.3.5.   Impact on psychological distress results, after excluding individuals who indicated the cause of the feelings and experiences was due to physical health issues most or all of the time.

	Educator	MLA	MLT	Other	Student	Supervisor, Manager, or Director	Average
Less often than usual	14%	8%	7%	0%	21%	2%	7%
About the same as usual	38%	29%	38%	72%	32%	34%	36%
More often than usual	48%	63%	55%	28%	46%	65%	56%

8.0   Review by Dr. Rosina Mete

8.1.   Introduction

Dr. Rosina Mete is a registered psychotherapist and was asked to review the results contained within the report and provide a reflection regarding future implications. To date she has previously provided psychoeducational presentations to the medical laboratory professional community and as a result, has an awareness of their roles and responsibilities.

8.2.   Reflection

The Mental Health Survey provides an overview of the mental health status of medical laboratory professionals with an examination of their overall mental health, their work context, and its impact on their emotional wellbeing. Relevant comparisons from survey results in 2018 are also added. The Canadian Society for Medical Laboratory Science's role includes the mandate "to promote, maintain, and protect the professional identity and interests of the medical laboratory professional and of the profession." Given the increase of education and awareness regarding the importance and impact of mental health within the workplace, CSMLS is expanding its understanding of its members' emotional and work context for future initiatives.

Due to the COVID-19 pandemic, the increase in laboratory testing, tracing and case management is reflected within the results. The survey results outline a decline in quality of work-life since 2018 as well as the impact of increased workload. However, the participants noted strong job security within the field which reflects the current labour market.

Job security often correlates with employee engagement. The conundrum faced by medical laboratory professionals revolves around the work demand which may impact work quality as evidenced by the response "I have too much work to do everything well" and an increase in emotional exhaustion. Upon examination of 4.10.1, medical laboratory professionals noted they were able to use their skills and abilities, experiencing a respectful workplace with safety prioritized and a general trust in management. These results may act as protective factors or characteristics that nullify the negative impact of the stressful workload. Additionally, many of the respondents identified a pro-active stance with an increased possibility to find a new job with a different employer within the next year.

There was a 14% increase in emotional exhaustion in 2021 as compared to 3% between 2016 to 2018. These results suggest that many medical laboratory professionals are experiencing symptoms of burnout including higher levels of exhaustion, difficulty concentrating on work, and increased frustration regarding their work tasks. Further evidence of burnout was found in the Kessler-6 Psychological Distress Scale where incidences of nonspecific serious psychological distress had nearly doubled since 2018. The impact of stress on the body is well-documented and may result in both emotional and physical symptoms. A meta-analysis of research found that an infectious disease outbreak, such as SARS or Ebola, can intensify levels of psychological distress among health care workers.[9] As the COVID-19 pandemic continues, it is my opinion that emotional exhaustion and serious psychological distress may persist within the medical laboratory population. Unfortunately, increased laboratory demand without sufficient funding and staffing contribute to these findings and predictions.

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[9]Sirois, F.M. & Owens, J. (2021). Factors associated with psychological distress in health-care workers during an infectious disease outbreak: A rapid systematic review of the evidence. *Frontiers in psychiatry,* 11, 589545.

However, further review of the Mental Health Report yields additional findings of interest to be explained. The report outlined that anxiety and depression scores increased since 2016; yet, a general improvement was identified when 2021 responses were compared to 2018 results. Participants also disclosed increased feelings of behavioural control and positive affect since 2018. In the survey, behavioural control was measured by emotional stability and positive affect was linked to interest and enjoyment in life. How might this phenomenon be possible amongst individuals who are experiencing burnout? As a mental health professional, I think of the overall context of an individual's life including their connections, such as family and friends as well as hobbies and interests. The COVID-19 pandemic encouraged individuals to bake, become crafty(ier), and engage in different healthy lifestyle practices. Medical laboratory professionals may be incorporating other hobbies or activities which increase their positive mood or spend time with connections, such as family and friends, which help with emotional stability. Research examining the impact of infectious diseases including COVID-19 found that higher levels of social support were protective factors against psychological distress, including anxiety and depression.[10]

Another explanation is linked to the concept of self-confidence, which is linked to self-efficacy and self-esteem. Increased self-confidence impacts mood and improves emotional adaptability. Self-confidence is trust in oneself or self-assurance whereas self-efficacy is the personal belief that one can complete a specific task or overcome challenges. Self-esteem is the "cognitive and emotional appraisal of one's self worth."[11] If medical laboratory professionals are experiencing higher levels of behavioural control and positive affect, they may be experiencing higher levels of self-efficacy within work as evidenced in responses 4.10.1. Therefore, they do understand the tasks required for their role. On the other hand, the societal and work demands of a medical laboratory professional may be impacting their self-esteem and, therefore their self-confidence, if they are consistently feeling like they cannot do their job well no matter how hard they try. Future research by CSMLS may allow for additional questions regarding self-confidence, self-esteem, and self-efficacy to investigate these findings.

As a mental health professional, I also caution that some individuals, such as medical laboratory professionals, who experience burnout and are dedicated workers may have difficulty with insight of their mood and behaviour. There may be a disconnect within responses which might be explored with further research and analysis.

Another fascinating finding was the increased awareness of stress management programs with the increase in symptoms of burnout and emotional exhaustion. There appears to be stronger knowledge of different initiatives at work but a possible disconnect in their utilization. The American Association for Clinical Chemistry (AACC) recently posted an article outlining escalated levels of burnout among laboratory staff who were also aware of stress management programs.[12] Unfortunately, the University of Rochester reported that some types of programs, such as an ice cream truck or yoga classes, caused increased stress for staff due to workload demands and inability to access the workshops (shift work). The respondents found that access to mental health services including EAP had a strong positive impact on emotional wellbeing.

The CSMLS survey examined access to a professional regarding mental health care and only one-fifth of respondents met with a professional such as a doctor for an average of two sessions. These results may be explained by lack of access to mental health resources, lack of time to use resources, cost to access, or stigma surrounding mental health care. Mental health also accounted for work lost (four days on average, with one and a half days of missed work). These trends are common for individuals who are experiencing higher levels of burnout.[13] Further questions in future mental health surveys would illuminate this trend regarding availability and follow up with care.

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[10] Sirois, F.M. & Owens, J. (2021). Factors associated with psychological distress in health-care workers during an infectious disease outbreak: A rapid systematic review of the evidence. *Frontiers in psychiatry,* 11, 589545.
[11] Psychology Today. Self-confidence versus self-esteem. Retrieved from
https://www.psychologytoday.com/ca/blog/hide-and-seek/201510/self-confidence-versus-self-esteem
[12] AACC.org. Your burnout is real. Retrieved from https://www.aacc.org/cln/articles/2021/october/your-burnout-is-real
[13] Psychiatric Times. Navigating COVID-19 lessons on burnout. Retrieved from
https://www.psychiatrictimes.com/view/navigating-COVID-19s-lessons-on-burnout

8.3.   Future Action

CSMLS continues to strongly advocate for the medical laboratory profession at federal, provincial, and territorial levels. Their next steps may include further support for medical laboratory professionals and given the patterns among levels of stress and burnout, a peer support program may assist in fostering further connection and communication among the profession.

The CSMLS has developed a Mental Health Toolkit which can be updated with pandemic-specific resources as well as further tailored resources provided by the provincial and federal government for emotional wellbeing during COVID (i.e. Wellness Together).

Additionally, CSMLS' continued advocacy for supportive working environments and addressing public knowledge to increase recognition of medical laboratory professionals will also assist in addressing the context that contributes to burnout.

They may provide an information guide for Educators and for Managers in regards to addressing concerns about future burnout and burnout in the workplace, respectively.

Peer support programs may be facilitated by discipline or geographic location and offered online (via forum, social media, or video such as Zoom). Peer support programs may feature specific topics to discuss or be used as emotional support discussions. Given the high levels of stress found among students, a mentorship program to help new graduates integrate into the workplace may be beneficial.