

Research Paper

## Vocational Training Pre- and during Pandemic at B.M.I.M.H.: A Sequential Longitudinal Explanatory Mixed Methods Design

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### ABSTRACT

This Sequential Longitudinal Explanatory Mixed Methods study was aimed at understanding the types of activities, skill development and behavior modification strategies employed at B.M. Institute of Mental Health pre- and during the pandemic and the corresponding skill behaviors and problem behaviors demonstrated by the beneficiaries. This would be instrumental in devising a new hybrid model of interventions post pandemic. We used a Before-After Experimental approach towards quantitative analysis of the BASAL-MR scores of adults seeking vocational training at B.M.I.M.H. at the Baseline and Third Quarter levels both pre- and during the pandemic. Later, we conducted Narrative interviews of the Occupational Instructors involved in creating and executing the Individual Vocational Plans and targeted group activities to explain the direction of these results. Quantitative results showed a significant improvement in the skill behaviors of adults pre-pandemic with in-person interventions. We found no significant difference in the problem behaviors pre-pandemic (in-person work) and skill behaviors during pandemic (online work). The scores for Problem Behaviors during the pandemic remained the same as instructors could not address them in person and parents were being prepared gradually to deal with them effectively. Based on the comparisons and insights, a new hybrid model using technology and involving concerned adults, occupational instructors and parents in the vocational training process could be an efficient strategy later on. This study can help Vocational Rehabilitation Professionals in their decision-making process.

**Keywords:** *Individuals with Intellectual Disability, Occupational Instructors, Vocational Training, Pandemic, B.M. Institute of Mental Health*

COVID-19 pandemic has brought multi-dimensional changes to the frequency and ways in which we maintain personal hygiene, socialize, adopt patterns and means of interactions, and hence, the ways in which we understand and explore ourselves and the world around us (Ana, 2020; Oosterhoff et al., 2020). The nature and ways of performing rituals in collectivist countries like India usually involving large gatherings, celebrations or mourning now accompany a constant fear amongst attendees relating to meeting someone infected or with a travel history, or being cautious about not developing symptoms of new variants (Chaturvedi, 2020). While these health-related anxieties are noticed widely across demographics, it has had profound impact for persons undergoing rehabilitation and seeking

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services at day boarding and day care centers to deal with mental health problems due to the nationwide lockdown. While persons seeking vocational education and training could be a rich resource to enhance production of cleaning materials, disposable materials including Personal Protective Equipments, Face protection shields, N95 Standards, and medical masks by becoming one of the major suppliers in society (Ozer, 2020), their vocational participation was reduced during lockdown.

Vocational Rehabilitation Professionals develop skills such as personal hygiene, executive functioning, community mobility, leading to increased independence, ability to network with resourceful persons, and developing and following a routine to receive and maintain employment (Carrasquillo & Gerken, 2021; Juan & Swinth, 2010; Michaels & Orentlicher, 2004). The sub-goal of vocational training involves development of social skills by encouraging social interactions, in turn reducing the socio-emotional distance created as a consequence of their mental health problem. Work from home and being confined to the home environment has impacted persons undergoing psychiatric rehabilitation leading to adverse consequences on the previous vocational training efforts, indicating that re-training may become a challenge (Patel et al., 2020; Martel et. al, 2021; Chaturvedi, 2020; Denisova, Lekhanova & Gudina, 2020). Additionally, the ability of persons with mental health problems to build self-confidence and self-esteem have reduced due to disrupted daily routines and lack of opportunities to perform, achieve and gain motivation from authority and peers in an in-person day care centre unit.

With transition to online platforms such as Zoom, Google Meets, and Microsoft Teams, this collaboration could be extended to opening pre-employment skill development opportunities within community, participation in simulated job interviews, increased use of PowerPoint or Excel presentations and spiritual components to prepare individuals with disabilities to become equally equipped to join the workforce at all levels (Carrasquillo & Gerken, 2021), which they have been able to achieve by joining online training programs. Marmaras and Evangelos (2020) developed safety courses for adults with disabilities receiving vocational secondary education of short duration to be shown during the pandemic. These courses included a course on traffic education and "hygiene and safety for all" course through workshops, photographic materials, interactive games, notebook work, pedagogical work, collages, sign boards, external educational visits, inviting speakers and finally, structured evaluation sheets and result-dissemination methods to ensure learning. It is anticipated that home-based rehabilitation strategies can help mitigate these struggles, provided they are planned in advance (Chaturvedi, 2020). However, the current scenario is unprecedented and hence, the ways to provide rehabilitation services online or at home and its effect must also be unique.

In Pakistan, vocational education practitioners adopted reflective practices and began reflective journal writing, wherein they identified and adopted six different types of reflective journaling as per personal preference. They viewed these practices as major breakthroughs to improve teachers' self-efficacy and enhancement of their roles to provide better quality of vocational training. They devised more aware, insightful and thoughtful teaching decisions with a constant aim for progress and enhancement of teaching abilities (Sanders, 2017). Furthermore, journals could be a guiding light for further improvement and continuous evaluation of services provided for the organization (Pirzada, Muhammad & Ahmed, 2021). It is imperative to understand that previous methods of vocational teaching and training need to undergo a drastic change in unidentified directions, and hence, exploratory and qualitative

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methods shall best suit the purpose of improving our quality of services during and post-pandemic. Owing to this need, Australia developed an innovative online platform to support young people with mental health problems and achieve work and study goals (Rickwood, Kennedy & Miyazaki, 2021). They evaluated the efficacy of this program by collecting data regarding their beneficiaries, information of services delivered and its impact and administered a survey to their headspace Work and Study (hWS) adults. Young persons with mental health problems deemed the online platform as acceptable (Carrasquillo & Gerken, 2021), assistance and clinical integration as helpful and sought more assistance for work than study-related goals. Greater engagement in seeking online services produced better outcomes compared to those taking less than 5 sessions.

Carrasquillo and Gerken (2021) suggested that collaborations among school teachers, occupational therapy practitioners, community employment programs and community employers can help maintain the acquired pre-employment skills and knowledge of skill-building opportunities for persons with disabilities and pandemic-related challenges. Successful collaborations align with and support the student, caregiver, and community-based pre-employment and employment programs promoting increased structure, success and execution post-graduation. Healthcare systems should be prepared to continue providing services with proper precautions and least physical risk of infection to address this public health challenge.

### ***Problem Statement***

The purpose of this sequential longitudinal explanatory mixed methods study was two-fold:

- To report the difference in skill behaviors and problem behaviors as a result of the vocational training strategies employed by the Occupational Instructors pre- and during the pandemic; and
- To understand the intricacies of training strategies that were found effective and the ones that needed modifications or substitute methods, the ones that could be accommodated/assimilated in a new hybrid model utilizing technology and various formal and informal ways of assessment.

### ***Significance of the Study***

As reflected in the Literature Review, previous studies have included Reflective journaling and effects of newly devised specific courses designed during the pandemic for adults with intellectual disability in an online setting. Since there has been no specific exploration connecting the previously normal and new online vocational training techniques employed, their effectiveness and instructors' insights, the current study will be beneficial in eliciting empirical evidence to understand the course of interventions chosen pre- and during pandemic along with future anticipations of instructors. The BASAL-MR scores were timely assessed by the instructors providing accurate quantitative and longitudinal data to strengthen the evidence for support.

### ***Hypothesis***

In order to understand the changes in Skill Behaviors and Problem Behaviors of individuals with intellectual disability seeking vocational training at B.M.I.M.H., we formulated the following hypothesis:

**Hypothesis 1:** There is no difference between the Baseline and Third Quarter Skill Behaviors of individuals during 2019-20 as a result of Vocational Plans executed.

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**Hypothesis 2:** There is no difference between the Baseline and Third Quarter Problem Behaviors of individuals during 2019-20 as a result of Vocational Plans executed.

**Hypothesis 3:** There is no difference between the Baseline and Third Quarter Skill Behaviors of individuals during 2020-21 as a result of Vocational Plans executed.

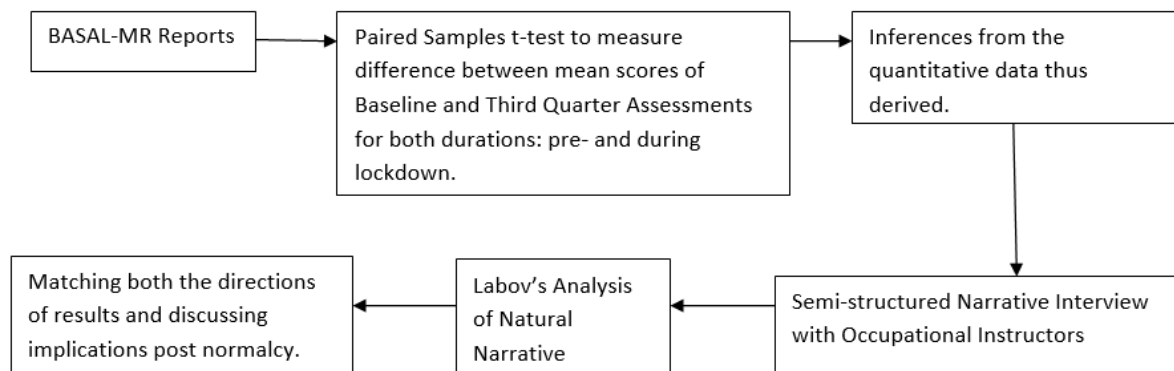
**Hypothesis 4:** There is no difference between the Baseline and Third Quarter Problem Behaviors of individuals during 2020-21 as a result of Vocational Plans executed.

Based on the quantitative results thus obtained, we formulated Research Questions to guide the Narrative Interviews of Occupational Instructors to explain the results.

### METHODOLOGY

#### Design

Seeking to develop an empirical understanding of the impact of nation-wide lockdown on the skill behaviors and problem behaviors displayed by persons with intellectual disabilities seeking vocational training at the Multi-Category Workshop (M.C.W.) at B.M. Institute of Mental Health and the effect of vocational interventions provided from a distance, we undertook this study utilizing an Explanatory Mixed Methods Study. We used a quantitative approach to determine the difference between continuous assessments conducted pre-lockdown and during lockdown to understand the impact of chosen activities reflected on the timely evaluated Behavioral Assessment Scale for Adult Living- Mental Retardation (BASAL-MR) scores. In order to explain the direction of results, we conducted a semi-structured narrative interview of the Occupational Instructors, who directly work with these adults to gain a deeper and more holistic understanding of the approach and activities during both these times. Additionally, we discussed prospective apprehensions and plans of action.



**Figure 1: Conceptual Framework of the Research Model Adopted for this study.**

#### Participants

We approached four Occupational Instructors at the Multi-Category Workshop (M.C.W.) at B.M. Institute of Mental Health to participate and provide information about the activities performed pre- and during lockdown in their respective units. To participate, the Occupational Instructors who had planned and implemented the quarter-wise activities: individual and group vocational tasks allotted to enhance skills and reduce problematic behaviors amongst adults were only included. We used Total Population and Expert Purposive Sampling including and receiving consent from all professionals at the unit (M.C.W.), who were at the best ability to share information critical to this study.

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While choosing which adults' data to include or exclude, we used a Critical Case Purposive Sampling. Initially, we got BASAL-MR reports of 62 adults; however, after the screening process, 18 remained and were included in the study. All Occupational Instructors had worked together with these adults both during 2019-20 and 2020-21 and each of their Baseline and Third Quarter Assessments were timely prepared and available. Demographically, all the included adults were in the range of 18-40 years, including 56.25% males, 43.75% females. Occupational Instructors provided us with the BASAL-MR reports of total 18 adults (after screening) seeking vocational training at their unit to evaluate effectiveness and reception of the activities.

### ***Procedure***

We proposed the purpose and design of this study to the Director of B.M.I.M.H. to receive her inputs and consent to conduct this study due to availability of rich quantitative and qualitative data at the institute. With her permission, the study went through a review of the Research Committee of the institute and was given the green signal to execute.

### ***Phase 1. Quantitative (Before-After Measurements: In-person and Online Treatments)***

Occupational Instructors were approached and informed of the voluntary and confidential nature of the study. If they agreed to participate, we asked them to share the BASAL-MR report cards of the adults and later, participate in an interview. After explaining the purpose of this study and receiving signed informed consent from Occupational Instructors, we procured the existing BASAL-MR evaluation Report cards at B.M. Institute of Mental Health. These reports provided progressive evaluations of adults with intellectual disability seeking vocational training over every quarter. This was instrumental in indicating the progress made by adults in developing skill behaviors and the reduction in problem behaviors with reference to the time-period. In order to establish control, we eliminated scores of persons with intellectual disability with any missing assessments. We only included persons who were continuously provided in-person/ online interventions and assessed throughout 2019-20 and 2020-21 academic year. The same adults were included in both the groups to avoid any confounding.

### ***Phase 2. Qualitative (Narrative Semi-Structured Interviews)***

To explain the direction of results, we conducted semi-structured narrative interviews of the Occupational Instructors in vernacular language to explain the training perspective with regards to past, present and future orientations. Each interview took approximately 45-50 minutes. We transcribed the interview responses into English. With a focus to develop an explanatory theory regarding the direction of results, six areas of Research Questions were developed as follows to guide the interview process:

1. RQ1: Which activities were performed at M.C.W. for skill development and behavior modification before and during the pandemic? Please provide an as accurate a timeline of activities as possible.
2. RQ2: How did these activities benefit in terms of their effectiveness and the time-period over which they were delivered? Did you observe any immediate or carry-forwarded learning effects in later assessments?
3. RQ3: Which challenges or barriers were experienced to execute all activities pre- and during the pandemic times?
4. RQ4: Which factors helped you in the decision-making process regarding continuing/ discontinuing/ introducing/ modifying certain activities further during both times?

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5. RQ5: In your opinion, if we were to adopt a new hybrid model of skill development at M.C.W., after normalcy, which activities you would like to keep/ introduce/ modify?
6. RQ6: Discuss your points of concerns about getting back to normalcy when M.C.W. reopens in-person.

We thanked the Occupational Instructors for their unceasing support throughout the study and willingness to add clarity and insight.

## **RESULTS**

### *Data Analysis*

We conducted Paired Samples t-test to measure the difference between Baseline Assessment and Third Quarter Assessments of both Skill Behaviors and Problem Behaviors during the years 2019-20 (in-person Vocational Training) and the years 2020-21 (online Vocational Training) using IBM's SPSS (Version 25). It is important to note that higher scores on Skill Behaviors indicate higher level of skills and lower scores on Problem Behaviors indicate lesser problematic behaviors displayed by the individual with intellectual disability. We chose Paired Samples t-test to account for the employment of same subjects and repeated measurements.

We employed Labov's Method of Natural Narrative to analyze data from the semi-structure interviews. We had designed our research questions in a manner that elicits information in the format answering the six main components: Abstract, Orientation, Complicated Action, Reflection/ Evaluation, Result/ Resolution and Coda. This information provided background information about the activities undertaken at various times, their reflected effects, decision-making process of trainers, future apprehensions and plans when adults return. In order to draw conclusions from the data, we examined, compared, conceptualized, and then categorized the raw data from the interviews. After comparing the interviews, we reflected on the six components of Labov's Natural Narrative. Analyzing the data in this way helped us develop explanatory theories of how vocational training changed and impacted the skill behaviors and problem behaviors of individuals with intellectual disability from the ones planning and executing the Individual Vocational Plans.

### *Quantitative Results*

#### **Paired Samples Statistics**

|        |      | <b>Mean</b>        | <b>N</b> | <b>Std. Deviation</b> | <b>Std. Error Mean</b> |
|--------|------|--------------------|----------|-----------------------|------------------------|
| Pair 1 | PBSB | 296.00             | 18       | 95.137                | 22.424                 |
|        | PTSB | 316.06             | 18       | 116.526               | 27.466                 |
| Pair 2 | PBPB | 13.89              | 18       | 22.588                | 5.324                  |
|        | PTPB | 13.89              | 18       | 23.116                | 5.448                  |
| Pair 3 | LBSB | 331.28             | 18       | 91.064                | 21.464                 |
|        | LTSB | 341.06             | 18       | 98.953                | 23.323                 |
| Pair 4 | LBPB | 10.44 <sup>a</sup> | 18       | 13.836                | 3.261                  |
|        | LTPB | 10.44 <sup>a</sup> | 18       | 13.836                | 3.261                  |

a. The correlation and t cannot be computed because the standard error of the difference is 0.

**Table 1:** Mean, N, SD, SE Mean of Prior Baseline Skill Behaviors (PBSB), Prior Third Quarter Skill Behaviors (PTSB), Prior Baseline Problem Behaviors (PBPB), Prior Third Quarter Problem Behaviors (PTPB), Later Baseline Skill Behaviors (LBSB), Later Third

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Quarter Skill Behaviors (LTSB), Later Baseline Problem Behaviors (LBPB) and Later Third Quarter Problem Behaviors (LTPB). The observed Problem Behaviors prior to and after online vocational training continue to remain the same without any forward or backward progress.

| Paired Samples Test |             |                    |                |                 |   |        |        |    |                 |
|---------------------|-------------|--------------------|----------------|-----------------|---|--------|--------|----|-----------------|
|                     |             | Paired Differences |                |                 |   |        |        |    |                 |
|                     |             | Mean               | Std. Deviation | Std. Error Mean | 99.9% Confidence Interval of the Difference |        | t      | df | Sig. (2-tailed) |
|                     |             |                    |                |                 | Lower                                       | Upper  |        |    |                 |
| Pair 1              | PBSB - PTSB | -20.056            | 38.859         | 9.159           | -56.373                                     | 16.262 | -2.190 | 17 | .043            |
| Pair 2              | PBPB - PTPB | .000               | 3.068          | .723            | -2.867                                      | 2.867  | .000   | 17 | 1.000           |
| Pair 3              | LBSB - LTSB | -9.778             | 27.871         | 6.569           | -35.825                                     | 16.270 | -1.488 | 17 | .155            |

**Table 2: Showing the t values, degrees of freedom and Levels of Significance of each Paired Samples t-test with a Confidence Interval of 99.9% or at a .001 level.**

**Labov's Analysis of Natural Narrative.**

| Orientation     | 2019-20  | 2020-21  | Future Anticipations   |
|-----------------|--|--|--|
| <b>Abstract</b> | Adults were sent to every vocational unit on a regular basis to understand their interests and ease with which they could comprehend and execute tasks given to them. The adults were majorly involved in production-related activities only. The tasks were broken down in the smallest units, in pre-determined steps and taught to the client. Sometimes we had to hold hands and cue adults to perform. If we received a huge order, more hands and time were invested | We used the audio-visual medium to ensure ongoing vocational training. Adults undertook activities following videos of certain tasks of the production process that can be carried out at home. These adults continued to earn and benefit from the online training and vocational involvement. They sent their videos to their instructors for review of work done. Socialization reduced; however, the time to connect with peers and teachers personally by talking about daily routines and personal experiences were enhanced. We constantly reminded them about the pandemic related precautions they need to follow and community guidelines. We prepared them for the new rules and regulations to be followed when they return. The activities we started online were merely on a trial and error basis while we explored new ways of | When the adults return to the institute, we need to foremost observe and ensure adherence to pandemic-related guidelines. The newly required ADL activities need to be brought into action. Adults will be insisted to follow work discipline, regularity and punctuality to bring them into the routine working zone. In the process, new skill assessments and behavior checks need to be done. Gradually, we need to start with working on products they are well-attuned to produce, then moving on to the |

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|                           |   |  |  |
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|                           | towards production. When Khel Mahakumbh was coming up, most adults spent time in extra-curricular activities.   | working virtually. However, we were able to sustain involvement in online activities and not witness a steep downfall or loss of skills gained over time.  | ones requiring higher level skills, and finally, teaching them new products.   |
| <b>Complicated Action</b> | Adults who displayed hyperactivity were given activities that required them to sit calmly, ones feeling lazy/ withdrawn/ loss of interest were motivated to indulge in activities requiring alertness and activity. Ones with inadequate fine motor skills were given tasks involving arranging raw materials, helping others, and assisting teacher in class management. Adults were given special time to engage with peers and play games such as carom to enhance eye-hand coordination, building and relaxing pressure on finger muscles and building a team-spirit. They were reminded of washing hands before and after lunch. We taught color-recognition by asking adults to | Only around a fourth of the total adults enrolled could continue to take classes because of unavailability of electronic devices or internet facilities. Of those who attended, the pace of learning reduced in an online setup. We did not receive an overwhelming response initially. They were constantly reminded of tasks through videos, substitute task homework, questions and classroom discussions. We included activities focusing on counting, helping to enhance life skills, household activities or ADL. We taught through online classes and in order to continue production, sent raw materials at home for the adults to continue working. As a result, we could only get an overview of the skill behaviors and problem behaviors of the adults and feedbacks from parents. The hours of working increased for some enthusiastic adults who would not stop working after a certain time; whereas the ones who resented work earlier were least involved in any production related activities. The home environment came closer to the teachers and they could observe and help with any family difficulties they encountered. Some adults with intellectual disability became irritable and | We will need to update our working methods and skills. New assessments need to be done to understand exactly the observed and functional skills, social-communication skills and basic nature of the adults when they return. When the adults come in, they need to be attuned to the earlier routine of regularity and punctuality. They need to be brought back in the zone of working from 11:00 a.m. to 3:00 p.m. as their routine. The sitting arrangements of the adults will be changed to ensure social distancing. Earlier, we taught them the concept of sharing food with colleagues; we need to go back and explain them how it is not viable now. These skills are equivalent to going back to the level of ADL to be sure of safety. Closer supervision of |



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|  | <p>focus on a single ball as it rolled down in a bowl and speaking out loud the color of the ball. We gave a particular colored thread to the client and asked them to find the same color thread reel from the cupboard. They started associating the colored thread to the particular products they are used for. Music therapy was extensively used as it developed a sense of rhythm, timed clapping and involve in full body movements to understand the song. Group tasks were majorly taken up, leading to cohesiveness. Relaxation and recreation were also carried out simultaneously. Whenever we faced any problem behavior in classroom setting, we had to instantaneously rectify them. We had the chance for detailed observations to plan Individual Vocational Plans for each student.</p> | <p>resentful staying at home and did not follow instructions by elders at home. Here, we started preparing parents to deal with any behavioral problems. Whereas, some adults have perfectly adjusted in the home by helping out with cleaning and drying of utensils and clothes, preparing bed for sleep, and other household chores. While some adults had very supportive family environment, some parents constantly interjected during classes and probed the adult to speak up- affecting the autonomy the adult: that also needed to be addressed beyond class hours. Some adults could also find and secure employment outside of school environment. The work was majorly focused on developing general knowledge of the adults through puzzles, color matching and sorting, videos on personal hygiene, recalling of concepts and products learnt previously. To aid eye-hand coordination, develop interpersonal functioning, following instructions and organization skills, they were asked to help in cutting fruits and vegetables under supervision and help clean refrigerator at home based on the level of development of the adult. We showed videos to adults repeatedly for color recognition and production process revisions by showing them tools during class. Adults started participating in and anticipating conversations in class and hence, started initiating and sustaining a meaningful conversation.</p> | <p>achievement of these goals shall consume more time. We are also preparing adults to create pandemic-related products such as COVID-aprons and masks, for which pre-vocational training has begun. When adults come back to the unit, the focus should be on development of personal skills, more socialization, division of adults into very small groups: each having one person capable of holding a leadership position, willingness and ability to guide others and make peer learning feasible and yet maintain safety precautions. The ones requiring special care and/or repeated instructions need to be placed closer to the class instructor for supervision and targeted vocational training. In terms of activities, we will begin with activities that most interested adults, and then, after proper observation and assessment allot them to using machines/ equipments or teach them new products as we have planned</p> |
|--|--|---|---|

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|                                      |  | <p>Teachers got time to reflect upon the interests and aesthetic sense of the adult. Prayers were done earlier too, but now the reasons and benefits of praying were explained along with meditation and yoga- resultantly, some adults initiated interest in regularly doing exercises and yoga. We individually connected with certain adults post class timings to give them tasks specific to meet their Individual Vocational Plans. We showed adults videos considering the syllabus, level of understanding of the adults: some were personally sent to match their abilities. We slowed down the process of training by starting to train on waste materials at home to using raw materials sent from school. We showed them videos of the steps of hand-washing, maintaining social distancing, using masks and sanitizers and other precautionary steps against the pandemic. Psycho-education with adults and parents was the key relying factor throughout the course of activities with counseling to be mindful and sensitive towards other individuals and responding effectively.</p> | <p>to introduce. For adults with disturbed home environment or least activities after school, some production-related activities could be given at home that keep them engaged: which can be polished at the institute later. Earlier, only ones involved in clay/mud/ sand activities wore gloves for safety. Now, everyone in the unit might be expected to use hand gloves. At a later stage, we should also involve teach adults to preserve and create best out of the waste materials to enhance creativity and aesthetic sense of adults.</p> |
| <p><b>Reflection/ Evaluation</b></p> | <p>We taught adults the ways and means to deal with workplace challenges. We prepared adults to take up leadership positions and be self-reliant at workplace. Close supervision, observation, level</p> | <p>Earlier many adults were not able to sit calmly during class. Now, they could easily sit up for one hour class: developing vocational skill. They became more skilled at using computers, smart phones, making phone calls, classroom video calls and using social media applications. Some demonstrated a lot of interest in coming to school. Some adults</p>  | <p>If adults have involved in counting and measurement activities sitting at home, their peer interaction skills and leadership qualities have also been poorly impacted. Size, shape and color concepts are taught in the online setting</p>  |

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|                                 | <p>of disability of the adult, regular expert consultations guided the further plans. Physical work and practice led to development of tactile sensation and eye-hand coordination. When a task was taken away from an adult or they were given another task or a task they did not like such as cleaning, adults felt hurt. Socialisation was a plus-point as adults worked together and developed their communication and interpersonal skills. Peer learning was possible by pairing one highly skilled adult with a lesser skilled adult through observations.</p> | <p>were asking questions in the online class regarding the appropriateness of vaccine for them, if it is fine to get one dose and not the other, if there will be any negative consequences, if it is important to be fully vaccinated, after how much duration is the second dose to be taken, can I attend school without vaccine: all questions requiring insight and critical thinking. Teachers realized that sometimes it was not the nature of the child, but the parents' reluctance or inability to provide for the raw materials requirements at school. While, some other adults were able to learn exponentially on receiving motivation from and working with close family members. As a result of time on hand, we could develop finer skills of adults as they could grasp more knowledge. Relationships between the adult and family members could be understood better observing the adult in their home environment. We could provide one-to-one psycho-education, provide support and opportunities towards continued learning.</p> | <p>and revised. The focus now would shift to practical application related to the development of skills instead of revisiting videos. The association with caregivers and rapport should be continued further to be instrumental in the placement process later. We would want to pick up some benefits of online classes such as explaining and discussing the logical reasons behind a particular activity with adults to increase motivation. This makes them feel valued and wise when talked to in this manner. We will need to be stricter while ensuring safety measures being taken at the institute. Screening of temperature should be done right at the gate to avoid the spread of pandemic.</p> |
| <p><b>Result/Resolution</b></p> | <p>Practice is essential to ensure overall physical and cognitive development of the adult. It is inevitable for long-term learning. Constant observation of the adult in a work setting and</p>   | <p>Closer understanding, contact and involvement of caregivers is crucial to understand their demonstration of skills and behaviors in different settings. Activities that add to knowledge, provide reason and logic behind certain ritualistic behaviors such as daily exercise, prayers and meditation help elicit self-motivation to do so.</p>  | <p>The environment in which adults return will be totally different. Hence, rules and regulations regarding the pandemic will be strictly adhered to. We should continue educational activities along with the vocational training.</p>  |

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|             | immediate behavior modification are necessary to maintain newly learned behaviors and skills. These will help make the continuous assessment and later, placement process more efficient.                   |  |  |
| <b>Coda</b> | Many of these activities had to be stopped or could not be carried out in an online setting. However, for some activities, we could formulate substitute activities or ones more effective in an AV format. | While production activities reduced drastically and skill behaviors could be enhanced through the use of general knowledge-building activities, peer learning, socialization and optimum personal attention were missed out. We could individually connect and decide on short-term Individual Vocational Plans with slow progress. We were able to form closer relationships amongst adults, parents and instructors. | We shall continue to take the learning from pre- and during pandemic times and build new intervention strategies for better effectiveness. Parental involvement will be strengthened and use of technology for certain activities shall be inevitable. Continuous involvement in production-related and extra-curricular activities will be ensured. |

**CONCLUSIONS**

From the analysis of BASAL-MR scores of skill behaviors and problem behaviors of adults, we can conclude the following:

Conclusion 1: There is a significant difference between the scores of Skill Behaviors during 2019-20 from the Baseline (M=296, SD=95.13) and Third Quarter (M=316.06, SD=116.526);  $t(17)=-2.190, p=.043$ .

Conclusion 2: There is no significant difference between the scores of Problem Behaviors during 2019-20 from Baseline (M=13.89, SD=22.58) and Third Quarter (M=13.89, SD=23.116);  $t(17)=.00, p=1.00$ .

Conclusion 3: There is no significant difference between the scores of Skill Behaviors during 2020-21 from the Baseline (M=331.28, SD=91.064) and Third Quarter (M=341.06, SD=98.95);  $t(17)=-1.488, p=.155$ .

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Conclusion 4: There were no changes in the Baseline and Third Quarter Assessment scores of Problem Behaviors during 2020-21.

Analyzing the quantitative result above and matching it to the interview responses given by Occupational Instructors, we observe that practical and direct involvement of adults with intellectual disabilities in production related activities have brought about significant improvements in skill behaviors. The skewing of Problem Behaviors noticed in 2019-20 reveals that some adults' problem behaviors could be reduced by instant employment of behavior modification strategies when they were encountered in a work setting, while others could not be addressed spontaneously in the moment when they occurred. On a virtual platform, during 2020-21, the focus shifted to developing knowledge, making the adults prepared to take pandemic-related safety precautions and keep the production process memory intact. No production-related activities could be directly carried out in this period. Occupational Instructors resorted to substitute audio-visual activities and household tasks to enhance skill behaviors. Teachers, parents and the adult got time to connect with each other personally, share routines and challenges much more compared to earlier scenarios, facilitating an emotional, social productive and constructive alliance amongst all. Hence, there was no major difference noted, but the skills were sustained over time. Some adults were able to participate online only; whereas others could get raw materials delivered home, work and send the finished products to school. These adults benefitted to the optimum due to gains from learning in a virtual medium plus involvement and utilization of all senses in the production process. They continued to display Problem Behaviors as earlier, but now the parents had to be prepared to handle them in a home setting. The consequences are two-way: even though the progress was not as quick and efficient, Occupational Instructors could reach the home environments of the adults, observe their behaviors in home setting, understand their environment and background through direct observation and prepare others around them. Both these approaches of in-person and online vocational training brought separate pros and cons. It gave a forward-looking vision of a hybrid model of vocational training that can be adopted at the institute.

### ***Future Implications and Limitations***

The findings of this current study are instrumental in gaining a deeper perspective of the direction of progress made using different vocational training strategies pre- and during the pandemic. The interview results are of significant value as they reflect the decision-making strategies of Occupational Instructors. Considering that Vocational Rehabilitation Professionals work at both- group level and Individual Vocational Plan levels, this study answers a very crucial question regarding how we can devise activities in an in-person/online/ hybrid scenario towards skill development and behavior modification of adults with intellectual disabilities. The emphasis on parental involvement and observation of the adult in home, work and community settings needs is essential here as the goal is not only to prepare the adult to take up a work position, but also to prepare the community to assimilate them, fostering an inclusive and assimilative environment. This study shall be helpful to Occupational Instructors, Vocational Counselors, psychologists, Special Educators, social workers and other Vocational Rehabilitation Professionals.

While this study included BASAL-MR reports and beneficiary group of 18 adults with intellectual disabilities seeking vocational training under 4 Occupational Therapists, this sample size is extremely small to generalize the findings over a greater population: three fourth of the adults enrolled at the institute could not participate online due to unavailability

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of devices, internet connectivity or class timings convergent with other family members' meeting timings. This study merely puts forth the insights of Occupational Instructors regarding the activities they chose and the results they received or perceived for future vocational planning. Hence, the problem of sample representativeness is crucial. Another limitation is that earlier least technology support was used with in-person intervention, whereas now, only online interventions are undertaken. Any discussion regarding future anticipations were merely guided by their learning from previous models about helpful/unhelpful training-learning models, approximations and apprehensions regarding further hybrid scenario. Hence, we can provide a decision-making structure, but not a guaranteed direction of activities or intervention strategies. Future research could be undertaken at a later and greater stage to determine the effectiveness of a new hybrid model with a greater number of beneficiaries. Employing methods of observations, closer planning involving parents and adults shall be major advantages in further projects. Replication of this Research model in individual institutions or organizations should be crucial to direct future course of action.

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### ***Ethical Approval***

The Director of B.M. Institute of Mental Health and the Research Committee of the institute conducted a detailed review of the study and ensured that there was no imminent harm due to participation in this study to any participants. We took informed and signed consent of the Occupational Instructors who participated in this research study.

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### ***Data Availability Statement***

Data Sharing will not be encouraged and is unethical as the BASAL-MR report cards elicited from Occupational Instructors are confidential and private. The interview responses are also to be kept intact, preserved and confidential with the Principal Investigator.

### ***Conflict of Interest***

The author declared no conflict of interest.

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