Clinical Instructor Perceptions of the Collaborative Clinical Education Model: Providing Solutions for Success in Physical Therapy Education

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Abstract

Purpose: The most common approach to physical therapy clinical education is the one-to-one (1:1) model. The collaborative clinical education model (CCEM) offers an alternative and beneficial approach to education but is not widely utilized within physical therapy. The primary aim of this study was to explore the experiences and perceptions of clinical instructors (CIs) teaching within the CCEM while also receiving structured support from an academic program. Methods: This study used semi-structured interviews before and after the CCEM experience to explore CI perceptions. CIs received formalized support that included pre-experience meetings, a CCEM Toolkit resource, scheduled follow-ups during the experience, and a post-clinical debriefing. Interview transcripts were analyzed using a qualitative data analysis program and collaborative coding process. Results: CIs' perceptions of the CCEM shifted following participation. Participants noted a need to be prepared with appropriate teaching strategies, have frequent communication with the academic program, and have a supportive clinical environment. Conclusion: CI participation in the CCEM is challenged by negative perceptions and lack of experience with collaborative learning. CI perceptions of the CCEM can become more positive after actually teaching in the CCEM; therefore, perceived challenges need to be addressed to increase CI participation. The CCEM may be more widely accepted if CIs' perceived challenges are addressed in partnership with an academic program with intentional CCEM training and support strategies.

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ABSTRACT

Purpose: The most common approach to physical therapy clinical education is the one-to-one (1:1) model. The collaborative clinical education model (CCEM) offers an alternative and beneficial approach to education but is not widely utilized within physical therapy. The primary aim of this study was to explore the experiences and perceptions of clinical instructors (CIs) teaching within the CCEM while also receiving structured support from an academic program. **Methods:** This study used semi-structured interviews before and after the CCEM experience to explore CI perceptions. CIs received formalized support that included pre-experience meetings, a CCEM Toolkit resource, scheduled follow-ups during the experience, and a post-clinical debriefing. Interview transcripts were analyzed using a qualitative data analysis program and collaborative coding process. **Results:** CIs' perceptions of the CCEM shifted following participation. Participants noted a need to be prepared with appropriate teaching strategies, have frequent communication with the academic program, and have a supportive clinical environment. **Conclusion:** CI participation in the CCEM is challenged by negative perceptions and lack of experience with collaborative learning. CI perceptions of the CCEM can become more positive after actually teaching in the CCEM; therefore, perceived challenges need to be addressed to increase CI participation. The CCEM may be more widely accepted if CIs' perceived challenges are addressed in partnership with an academic program with intentional CCEM training and support strategies.

Keywords: clinical education, clinical instructor, collaborative model, 2:1, physical therapy

INTRODUCTION

With student enrollment in physical therapy education at an all-time high, implementing innovative solutions to address the growing demands for clinical experiences is a top priority for all stakeholders involved in clinical education.[1-7] The most common approach to physical therapy clinical education is the one-to-one (1:1) model which consists of one student supervised by one clinical instructor.[3] However, this model faces increasing challenges related to changes in current health care policies, declining reimbursement for physical therapy services, high productivity (>85% direct patient care) and work-related stress for practicing clinicians who serve as clinical instructors.[8-13] These challenges, combined with the reliance on the 1:1 model, affect the overall sustainability of the current approaches to clinical education.[3,9,14]

The collaborative clinical education model (CCEM) may provide a way to address these challenges.[4,5,14,15] This model, commonly referred to as the "2:1 model," is defined as two or more students working together under the supervision of one primary clinical instructor (CI).[16,17] Educators within allied health professions, including physical therapy, occupational therapy, speech language pathology, and nursing, have explored the CCEM as an alternative approach to clinical education.[2,15,16,18,19-22] The benefits of the CCEM include peer-to-peer learning, increased productivity, cost-effectiveness, and enhanced CI satisfaction.[5,22-27] Conversely, the research also suggests that CIs perceive that the CCEM will increase their administrative burden, and they do not feel prepared to effectively supervise two learners simultaneously.[10,21,28-30] Although the literature identifies a disconnect between the benefits of the CCEM and the perceived barriers, attempts to address perceived barriers are beginning to emerge in the literature.[14,20,21,28]

Two neighboring Doctor of Physical Therapy (DPT) programs located in a metropolitan region of the western United States faced similar challenges in securing clinical education placements for students in their geographic region. Both institutions attempted to implement the CCEM with their clinical partners but were unsuccessful in gaining consistent acceptance of the model. In an effort to confront these challenges, the clinical education teams at both institutions collaborated to create a formalized system to educate and support CIs teaching in the CCEM. The system included in-person pre-clinical experience meetings, an innovative CCEM Toolkit resource, scheduled follow-ups with the CIs throughout the experience, and a post-clinical debriefing with the instructors. The aim of this study was to explore the experiences of CIs willing to teach within the CCEM while also receiving structured support from the affiliating academic program.

METHODS

Study Design

This multicenter, convenience-sampled qualitative study used an exploratory research design and semi-structured interviews as a primary data collection method to assess CI perceptions of and experiences within the CCEM. Exploratory research assists in determining the nature and scope of a problem but does not offer solutions.[31] The institutional review boards at each university approved the research proposals.

Participants

Participants included three community-based CIs who self-selected the clinical model and affiliate with the two DPT programs involved in this study (Table 1). These CIs, with approval from their Site Coordinator of Clinical Education (SCCE), agreed to teach students using the CCEM during a first or intermediate 8-week, full-time clinical experience, and following an informed consent process, agreed to participate in this study. While all of the participants possessed experience as a CI, none of them had experience teaching in a CCEM during a full-time clinical experience. The supervised students were matched to the clinical sites by their respective program's Director of Clinical Education and were aware that they would be in a 2:1 experience at the time of the match. Only students from the same institution were paired together.

Table 1: CI Demographic Profiles

	Years practicing as a PT	Years as a CI	Number of students mentored prior to CCEM	Practice setting
Participant #1	15	7	18	Skilled Nursing Facility
Participant #2	4.5	3.5	5	Acute Hospital
Participant #3	7.5	6.5	20	Acute Hospital

Instrumentation and Procedures
Interviews
The participant interviews occurred before and after teaching in the CCEM. The interview guide (Table 2) was based on topic-areas cited in the literature that were consistent with the aim of this study.[1,21] Participants were interviewed 2 to 4 weeks prior to the start of the clinical experience and again 1 to 3 weeks following the end of the experience. To reduce potential bias, the researchers alternated conducting pre- and post-experience interviews with other members of the research team.

Table 2: Interview Guide

Pre-Clinical Experience Questions	Post-Clinical Experience Questions
• How many years of clinical experience do you have? • How many years have you been a clinical instructor? • How many students have you supervised? • Are you an APTA credentialed clinical instructor? • In what setting do you practice? • What is your experience with different models of clinical education? • What is your impression of the 2:1 model? • What kind of training, if any, do you feel a clinical instructor should have before teaching in the 2:1 model? • What is the role of the academic program in clinical education? • How does the role of the academic program change during the 2:1 experience, if at all? • What concerns or fears do you have for teaching in the 2:1 model? • What do you perceive to be the challenges for the 2:1 model? • What are some of the benefits to the 2:1 model? • What do you perceive the role of the CCCE to be when a CI is teaching in the 2:1 model?	• What was your experience or impression with the collaborative model? • What kind of training do you feel a CI should have when teaching in the 2: 1 model? • What is the role of the academic program in clinical education? • How does the role of the academic program change during the 2:1 model, if at all? • What were some of the challenges with the 2:1 collaborative model? • What were some of the benefits to the 2:1 model? • What was the role of the CCCE during the 2:1 experience? • What do you perceive the role of the CCCE to be when a CI is teaching in the 2:1 model?

Toolkit Resource
The "Collaborative Model of Clinical Education Toolkit," a reference document designed by the researchers, was provided to each CI at the conclusion of the pre-experience interview. The researchers chose to provide it after the interview so as to more accurately capture the CI's perceptions of the 2:1 model prior to any specific training.

The Toolkit included information in three sections: 1) roles and responsibilities of clinical education stakeholders that are unique to the 2:1 model, 2) suggestions and guidelines for structure and progression of a CCEM clinical experience, and 3) suggested approaches to common challenges faced by clinical instructors teaching within this model. Content included recommended CI preparation strategies, weekly schedule templates, and general strategies to manage typical challenges faced in the CCEM such as low census and divergent student performance. The Toolkit was compiled as a simple document that could be shared as a hard copy and/or electronically. CIs and researchers reviewed each section of the Toolkit together. Researchers explained each individual section and provided the CIs with an opportunity to ask questions and discuss anticipated challenges.

CI Support during the Clinical Experience
CIs received structured support from the academic programs throughout the clinical experience. As the rotation began, the researchers sent weekly electronic communication to the CIs, inquiring about student progress and any challenges the CI was facing, as well as answering any questions that may have arisen. At the midterm of the clinical experience, each CI received a check-in by phone or with a detailed email. The researchers queried CIs regarding overall student performance, as well as any concern on the CIs' part that the CCEM was affecting the students/ experience. Researchers also assessed each student's performance with a thorough review of the Clinical Performance Instrument (CPI) evaluation to ensure students were meeting academic program expectations. The formal weekly check-ins were discontinued when it was apparent that students were meeting midterm academic expectations and there was no indication that the CCEM was negatively impacting the experience. Participants

were instructed to contact the academic faculty if challenges arose in managing the students' experience, including if the students' performances began to diverge, if personality differences emerged that impacted the collaborative experience, or challenges emerged in the clinical environment such as low census or patient availability.

Data Analysis
Data from pre- and post- interviews were audio recorded and transcribed verbatim to assure accuracy and authenticity. To reduce bias, each member of the 4-person research team hand-coded an anonymized transcript. Following independent coding, the research team entered the codes into the data analysis program, NVivo, to substantiate major and minor themes (QSR International Pty. Ltd., Doncaster, Victoria Australia, version 2.0.163™). Results from the NVivo analysis were discussed by the research team until consensus on the final interpretation of the theme was reached. This process of centralizing themes to find harmony and then verifying with all researchers, assures data consensus and reliability.[32] Respondent validation was performed through solicitation of feedback by a randomly chosen research participant who reviewed the major themes and agreed they accurately represented the participant experience.

RESULTS
Three major themes and related sub-themes emerged through the data analysis process: Benefits and Challenges, Inexperience with the model, and Roles and Responsibilities. Figure 1 demonstrates how the themes coexist and can intersect to impact a CI's perceptions and experience with the CCEM.
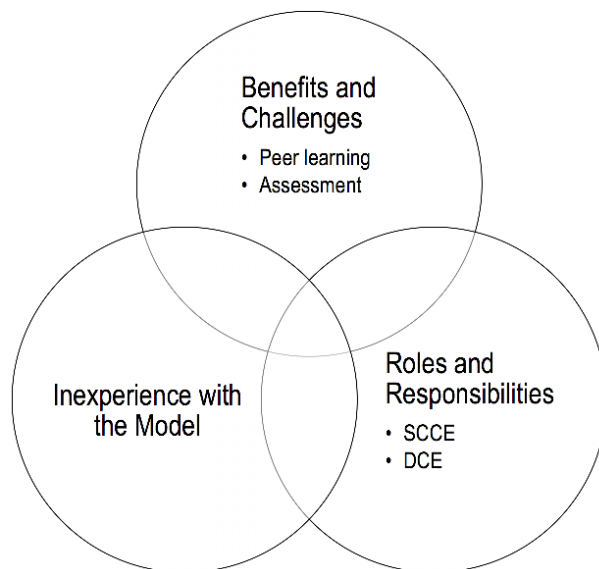

Figure 1: Themes and sub-themes from data analysis

Theme 1: Benefits and Challenges
Participants discussed the benefits and challenges of the CCEM in both the pre-experience and post-experience interviews. CI perceptions of what constituted a benefit or challenge with the CCEM shifted in focus after experiencing teaching in the CCEM.

Benefits:
Prior to teaching in the CCEM, CIs focused on the anticipated benefits to student learning in a peer-learning model. After the experience, participants continued to identify benefits related to student learning specific to peer-to-peer learning that occurs in a collaborative model. Comments around productivity pressures, which was identified prior to the experience as a barrier, shifted to an unexpected benefit after implementation of the model. CI productivity in the CCEM transformed into a benefit in their workload expectations.

"I see it being very beneficial for the students where it may be easier for them to approach a peer about an issue. It's a collaborative model; it's nice to have them have the opportunity to collaborate with a peer as opposed to an instructor."
– Participant 2 (pre-experience)

"To be able to see them have that conversation back and forth. You can actually see the learning happening, and make sure that it is happening."
– Participant 3 (post-experience)

"Certainly, my productivity was much better than it normally is. I don't know how it would compare to just one student versus two, but it was definitely better than when it's just me alone."
 – Participant 3 (post-experience)

Challenges:
Similar to the benefits, CIs spoke of the challenges related to the CCEM in both interviews, yet the focus of the comments shifted. The pre-experience interviews focused on fears and concerns related to workload demands and meeting the expectations of their role in the facility. After the experience, the participants continued to identify challenges, but rather than focus on the general challenges of the model, the CIs noted a need for more specific strategies to manage the assessment of two students, as well as mechanisms to overcome unanticipated teaching challenges. Despite these topics being included in the Toolkit resource, no participant specifically referenced the Toolkit when discussing these challenges.

"I think it will take up a bit more time during the day and working in acute care, where productivity is very highly emphasized, we don't have a ton of specified time just for students."
– Participant 2 (pre-experience)

"I think after the experience, [the challenges were] the CPI. Filling it out for both students and going over both of them, was twice as much time."
 – Participant 3 (post-experience)

"I think it would be nice, from a school perspective in general or a CI perspective, to have more information about resources for a 2 to 1. But either having a way to talk to other people who have done a 2 to 1 or suggestions for things that work really well coming from the school."
– Participant 2 (post-experience)

Theme 2: Inexperience with the Model
In both pre and post interviews, CIs referenced a lack of experience with any other model besides the traditional 1:1 model. During the pre-experience interviews, CIs admitted to a lack of knowledge and an absence of direct experience with the CCEM. No participant had taught full-time students in the CCEM model, nor had experienced it as students themselves. To prepare for this new experience, CIs gathered most of their information about the CCEM from secondhand reports, relying on what colleagues near them had heard or experienced. These subjective reports from others exposed the participants to challenges their colleagues had experienced without expressing strategies on how to manage two students concurrently. Comments during pre-experience interviews reflected anxiety related to a lack of understanding or knowledge of how to manage the stressors of teaching two students. The interviewees reported a lack of insight in this alternative model. While inexperience of the model remained a common theme after the experience, the responses shifted away from anxiety regarding the model toward a recommendation to train CIs on the strategies of managing two students at once. CIs suggested creating a training session for other instructors like themselves who had not taught in the model before to educate them more about the strategies of managing two students.

"I don't think I've had any [training], so hopefully it can be successful without a lot. I guess I've seen it be successful without a lot of training or experience."
– Participant 3 (pre-experience)

"I think it would be nice, too, from a school perspective in general or a CI perspective to have more information about resources for a 2 to 1."
– Participant 2 (post-experience)

> "I think maybe [creating] an online module or a two-hour training, in person, where you can actually ask questions, I think would be helpful."
> – Participant 3 (post-experience)

Theme 3: Roles and Responsibilities
Clinical Faculty
In both interviews, participants commented on the high level of support needed from the Site Coordinator of Clinical Education (SCCE). Prior to the clinical experience, participants viewed the SCCE as the connection between the clinical site and academic program and acknowledged the importance of creating a "strong bridge" between these two stakeholders. Additionally, the participants perceived the need for the SCCE to be accessible and available. After the experience, the comments remain characteristically similar with each participant commenting multiple times on the SCCE being "accessible" and "involved."

> "I feel like the [SCCE] may have had to provide me a little bit more support because I'm new to the model."
> – Participant 2 (pre-experience)

> "I actually think that in some ways he was pretty supportive, our [SCCE,] in terms of if we were doing more things, like just trying to schedule extra coverage around the time of midterms, trying to schedule some extra coverage during that first week."
> – Participant 1 (post-experience)

Academic Program
Participants highlighted the roles and responsibilities of the academic program in both pre- and post-experience interviews. Prior to the experience, CIs emphasized communication and availability as key characteristics of academic programs supporting CIs teaching in the CCEM. After teaching in the CCEM, the participants again placed an emphasis on the supportive role of the academic program, including being available for assistance in the face of challenges during the experience. In the post-experience interviews, participants also suggested a new responsibility for the academic program when using this model. CIs suggested academic programs should be matching students in an intentional manner to maximize the compatibility of the student learners. CIs noted in post-experience interviews that an important contributor to the success of the CCEM experience was the ability for the students to be successful in a peer-learner model. Participants suggested academic programs consider specific student attributes when matching students together. Participants identified traits such as self-direction of learning, ability to give and receive feedback effectively, and adaptability as especially valuable to this model. Once again, participants did not reference the specific Toolkit as a resource when facing challenges, but instead emphasized the need for open access to the academic faculty.

> "I think it's really important to have good communication between the site and the program, just a good relationship so that things can be discussed, issues can be talked about, even just progress so that nothing's a surprise. So overall, I think a lot of information and communication beforehand and during."
> – Participant 2 (pre-experience)

> "I do think [the academic program role needs to demonstrate] being there and being supportive and being involved, which I think [these academic programs] always do. I think it's also up to the CI to make sure that they're in constant communication [with the academic program]. It's probably just even more critical in this model.
> – Participant 3 (post-experience)

> "I don't know if [academic programs] are going to do some training [with the student]. I think that would be a good piece to bring in to be able to really assess your own performance with someone else's, too.
> – Participant 3 (post-experience)

> "I do think [the success of CCEM] would be very dependent on the two students [ability to work together]."
> – Participant 3 (post-experience)

DISCUSSION
This study intended to explore the experiences of CIs teaching in the CCEM and to understand how CI needs and perceptions intersect with the structured academic program support provided by the authors. The results of this study reinforce findings in current literature in that participants recognized the benefits of the CCEM to student learning but initially seemed cautious about participating in the CCEM due to perceived challenges.[1,4,15,19,33] This study builds on related literature by exploring how clinical instructors' perceptions of the CCEM change after first-hand teaching experience. Analysis of our results also cast new light on

how important the relationship is between academic institutions and clinical sites when addressing actual challenges and perceived barriers of the CCEM.

Perceptions Change with Experience
The major interview themes revealed a change in participants' attitudes and perceptions about the CCEM after the experience. In the pre-experience interviews, CIs voiced hesitancy to participate, as well as general concerns related to workload, productivity, and managing a student team. Lacking direct experience with the CCEM, our study participants relied on past knowledge from teaching in the 1:1 model or on their colleagues' stories of the CCEM to shape their perceptions. Neither source was reported to help CIs build confidence or trust in their own abilities to teach successfully in this model. According to social cognitive theory, information about a model combined with observation of others' negative experiences or failures within a performance model can adversely affect an individual's confidence and self-efficacy.[34] The fear related to inexperience itself may create the primary barrier to CI acceptance of the CCEM.[10,20,29,30]

Previous studies have demonstrated that a positive shift in CI perception of the CCEM can occur simply by teaching in the model.[2,21,33] Furthermore, prior studies have shown that CIs who have taught in the CCEM perceive it to be a better learning experience for the students.[4,15,35] Indeed, participants in this study actually found their anticipated barriers, such as workload and productivity demands, were not as great as originally expected.

Therefore, if CI participation is an effective way to change CI perceptions about the CCEM, then overcoming these negative perceptions and presumed difficulties of the CCEM is paramount to the acceptance of the model as a mainstream approach to teaching.[2,21] Inexperienced CIs require a combination of positivity and pragmatism to overcome their anxiety about participating in the model.[21] Collaboration between academic programs and the clinical site to provide support and resources may be a useful strategy to overcome perceived barriers and improve implementation of the CCEM by CIs.

Partnership
It is important in any clinical education model that academic programs remain accessible and available to the CI.[21,25,36] In this study, participants anticipated a greater need for communication with the academic program during the CCEM, and this perception remained unchanged post-experience. This consistent perception suggests that academic programs have a responsibility in the CCEM to remain actively involved and accessible to the CI throughout the entirety of the experience.

Participants also suggested the academic programs could provide earlier support for the CCEM through the student-pairing and site match processes. CIs have historically viewed the process of matching students to site and/or CI for any type of clinical experience as an important responsibility of the academic program.[18,21,37] In the CCEM, the academic program's responsibility expands to consideration of both the dynamic of the student pair and the dynamic between students and CI.[38] Participants in this study stressed the importance of the academic program's role in the student-pairing and match process, including the academic program's responsibility to identify students that might be most successful in the CCEM experience. Participants identified student characteristics consistent with the definition of an adult-learner, including autonomous learning, self-direction and collaboration.[39]

Providing Structured Academic Support
Previous literature identified the necessity of CI support to promote successful teaching in the CCEM.[3,15,19,21,29,33,38] Therefore, the CIs in this study received specific support and preparation before teaching in the model. Two facets of the support included consistent communication with the academic program, as well as a tangible resource that CIs could utilize throughout the clinical experience. This led to the creation of the Toolkit. The study results, however, do not specifically highlight the Toolkit's utility or impact. The fact that interviewers did not ask specific questions about the structured support or the Toolkit likely influenced this finding. Additionally, participants only had one opportunity to review the document with the researchers. This single touch-point may have been insufficient for creating value in the resource, as repeated facilitation of new clinical teaching skills over a period of time is important for clinical faculty development.[40] However, in post-experience interviews, CIs recognized the importance of the academic program's role. This may imply that the Toolkit, combined with the ongoing communications and structured support provided by the academic programs, contributed to the CIs' heightened awareness of the important role the academic program plays in the success of the CCEM.

The results of this study reveal that academic support of the clinical site may need to extend beyond the CI. National conversations highlight the role of the SCCE as crucial to the culture of the clinic.[25,41] A positive and supportive clinic culture is a major factor in the experience of both CIs and students during clinical experiences.[25] In our study, the participants anticipated that the SCCE would need to be more accessible to support the CIs throughout the CCEM experience. Afterwards, this perception shifted from an SCCE that was not just accessible, but actively involved throughout the experience as well. This suggests that training and

preparation for the CCEM model should involve both SCCEs and CIs in order to support and reinforce a positive culture at clinical sites.

LIMITATIONS AND FUTURE CONSIDERATIONS

This study adds to discussion of the CCEM in physical therapy education, particularly in the domains of academic-clinical partnership and implementation strategies. As previously discussed, it is important to consider that the interview questions were broad and did not specifically request feedback on the formalized support system or the utility of the CCEM Toolkit resource. Although the changes in CI perceptions cannot be explicitly linked to the formalized support system initiated by the researchers, the role of the academic program in supporting, training, and preparing CIs appears to remain central to success. Related future research includes exploration of a more dynamic delivery method for CI training, as well as consideration of best timing and content of academic support during the experience. The findings of this study provide a foundation for future investigation into innovative strategies to support CIs teaching in the CCEM in increasingly complex healthcare environments. In addition, much of the prior research on the CCEM looks at its utility with other healthcare disciplines in countries with variable health systems, most notably Australia, the United Kingdom, and Ireland. This study adds to the literature examining physical therapy clinical education models specifically within the complex United States healthcare system.

The small sample size and single-setting application limits the ability to generalize the study results. It is important to note that two of the major inpatient practice areas are represented – subacute rehabilitation and acute care. The findings justify further research with a larger sample size examining the adoption and utility of the CCEM in other settings, particularly general outpatient facilities, where the bulk of physical therapy practice occurs.[42]

This study did not examine student assessment of the CI teaching or of the learning experience itself. The authors chose to focus on CI perceptions of teaching in the CCEM to address a gap in current literature. However, the participants in this study noted that the student-pairing was an important aspect of the CCEM experience, and further exploration of the impact of intentional matching processes and academic program support on student experience would be a valuable addition to the CCEM literature.

CONCLUSION

The collaborative clinical education model benefits multiple stakeholders in clinical education and offers one way to address the need for an alternative and potentially more sustainable approach to physical therapy clinical education. Clinical instructors' negative perceptions and inexperience with the CCEM remains a barrier to its utilization. Prior to teaching in the CCEM, the participants in this study reported feeling unprepared to manage students while meeting their facility expectations and identified a need for consistent support from the academic program. Their experience of teaching in the CCEM resulted in more positive perceptions of the CCEM, possibly aided by the intentional and structured support provided by the academic program. By addressing the perceived barriers with training, an intentional student match process, and on-going communication and support, the academic program may contribute to increased CI participation within the CCEM resulting in a more sustainable approach to this model of clinical education.

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